AC Correlation with TEKS 2014 Chemistry

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
1	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(i) demonstrate safe practices during laboratory investigations, including the appropriate use of safety showers	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	The Activity Object demonstrates safe practices during laboratory investigations, including the appropriate use of safety showers.	In the Activity Sheet, students are asked to demonstrate safe practices during laboratory investigations, including the appropriate use of safety showers.
2	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(ii) demonstrate safe practices during laboratory investigations, including the appropriate use of eyewash fountains	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	The Activity Object demonstrates safe practices during laboratory investigations, including the appropriate use of eyewash fountains.	
3	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(ii) demonstrate safe practices during laboratory investigations, including the appropriate use of eyewash fountains	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	Enrichment Sheet 2 teaches safe practices during laboratory investigations, including the appropriate use of eyewash fountains.	Enrichment Sheet 2 assesses safe practices during laboratory investigations, including the appropriate use of eyewash fountains.
4	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(ii) demonstrate safe practices during laboratory investigations, including the appropriate use of eyewash fountains	TX2_US4802A02	Using a Calorimeter (TX2_US4802A02)	The Investigation Sheet teaches the appropriate use of eyewash fountains.	
5	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(iii) demonstrate safe practices during laboratory investigations, including the appropriate use of safety goggles	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	The Activity Object demonstrates safe practices during laboratory investigations, including the appropriate use of safety goggles.	Q1 of the Activity Sheet asks students about the appropriate use of safety goggles. Also, Q1 and Q4 of the Assessment in the Activity Object ask students about the appropriate use of safety goggles.
6	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(iii) demonstrate safe practices during laboratory investigations, including the appropriate use of safety goggles	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)		In the Activity Sheet, students are asked to demonstrate safe practices during laboratory investigations, including the appropriate use of safety goggles.
7	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(iv) demonstrate safe practices during laboratory investigations, including the appropriate use of fire extinguishers	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	The Activity Object demonstrates safe practices during laboratory investigations, including the appropriate use of fire extinguishers.	Q6 of the of the Assessment in the Activity Object assesses students on the appropriate use of fire extinguishers.
8	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(iv) demonstrate safe practices during laboratory investigations, including the appropriate use of fire extinguishers	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)		In the Activity Sheet, students are asked to demonstrate safe practices during laboratory investigations, including the appropriate use of fire extinguishers.
9	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(iv) demonstrate safe practices during laboratory investigations, including the appropriate use of fire extinguishers	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	Enrichment Sheet 2 teaches safe practices during laboratory investigations, including the appropriate use of fire extinguishers.	Enrichment Sheet 2 assesses safe practices during laboratory investigations, including the appropriate use of fire extinguishers.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
10	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(iv) demonstrate safe practices during laboratory investigations, including the appropriate use of fire extinguishers	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	The Lab Sheet teaches the appropriate use of fire extinguishers.	
11	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(A) demonstrate safe practices during laboratory and field investigations, including the appropriate use of safety showers, eyewash fountains, safety goggles, and fire extinguishers	(v) demonstrate safe practices during field investigations, including the appropriate use of safety goggles	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	Enrichment Sheet 2 teaches safe practices during field investigations, including the appropriate use of safety goggles.	The Enrichment Sheet 2 assesses safe practices during field investigations, including the appropriate use of safety goggles.
12	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(B) know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Material Safety Data Sheets (MSDS)	(i) know specific hazards of chemical substances as summarized on the Material Safety Data Sheets (MSDS)	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	In Part 3 of the Activity Object of the Activity Object, by clicking on the Material Safety Data Sheets (MSDS), the student views an animation explaining all elements of the MSDS, including harmful effects of chemicals, first-aid procedure, safety symbols, and the safe handling of materials and equipment.	Q7 of the Assessment in the Activity Object, as well as Q3 of the Activity Sheet and Q3 of the Enrichment Sheet, assess students on the appropriate use of Material Safety Data Sheets (MSDS).
13	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(B) know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Material Safety Data Sheets (MSDS)	(i) know specific hazards of chemical substances as summarized on the Material Safety Data Sheets (MSDS)	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	In Part 3 of the Activity Object of the Activity Object, students can click on the chemicals located on the lab table and observe safety equipment related to chemicals. Students can also view a summary of how the chemicals are hazardous as summarized by the Material Safety Data Sheets (MSDS).	
14	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(B) know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Material Safety Data Sheets (MSDS)	(i) know specific hazards of chemical substances as summarized on the Material Safety Data Sheets (MSDS)	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	In Part 1 of the Activity Object of the Activity Object, students observe specific hazards of chemical substances, such as the hazards of working with acid, as summarized by the Material Safety Data Sheets (MSDS).	In the Activity Sheet, students are expected to know specific hazards of chemical substances, as summarized by the Material Safety Data Sheets (MSDS).
15	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(B) know specific hazards of chemical substances such as flammability, corrosiveness, and radioactivity as summarized on the Material Safety Data Sheets (MSDS)	(i) know specific hazards of chemical substances as summarized on the Material Safety Data Sheets (MSDS)	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	Enrichment sheet 1 teaches students to know that specific hazards of chemical substances as summarized on the Material Safety Data Sheets (MSDS)	Enrichment Sheet 1 assesses knowledge that specific hazards of chemical substances are summarized on Material Safety Data Sheets
16	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(i) demonstrate an understanding of the use of resources	TX2_US4101A10	Substances that Cause Environmental Pollution (TX2_US4101A10)	The Animation teaches an understanding of the use of resources.	Q1-Q2-Q3-Q4 in the "After the Animation" section of the Question-Answer Sheet ask students to demonstrate an understanding of the use of resources.
17	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(i) demonstrate an understanding of the use of resources	TX2_US2103A16	The Impact of Energy Resources: Part I (TX2_US2103A16)	The Animation teaches an understanding of the use of energy resources.	Q1-Q2-Q3-Q4 in the "After the Animation" section of the Question-Answer Sheet, as well as Q1-Q3-Q4 in the Enrichment Sheet, assess student understanding of the use of resources.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
18	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(i) demonstrate an understanding of the use of resources	TX2_US2103A17	The Impact of Energy Resources: Part II (TX2_US2103A17)	The Animation demonstrates an understanding of the use of energy resources.	Q1-Q2-Q3-Q4 in the "After the Animation" section of the Question-Answer Sheet, as well as Q1-Q2-Q3-Q4 in the Enrichment Sheet, assess student understanding of the use of resources.
19	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(i) demonstrate an understanding of the use of resources	TX2_US2103A17	The Impact of Energy Resources: Part II (TX2_US2103A17)	The Animation demonstrates an understanding of the use of energy resources.	Q1-Q2-Q3-Q4 in the "After the Animation" section of the Question-Answer Sheet, as well as Q1-Q2-Q3-Q4 in the Enrichment Sheet, assess student understanding of the use of resources.
20	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(ii) demonstrate an understanding of the conservation of resources	TX2_US4101A10	Substances that Cause Environmental Pollution (TX2_US4101A10)	The Animation teaches an understanding of the conservation of resources.	
21	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(ii) demonstrate an understanding of the conservation of resources	TX2_US2103A16	The Impact of Energy Resources: Part I (TX2_US2103A16)	The Animation teaches an understanding of the conservation of resources.	Q3-Q4 in the "After the Animation" section of the Question-Answer Sheet, as well as Q4 in the Enrichment Sheet, assess student understanding of wind as a renewable energy source that conserves other energy sources.
22	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(ii) demonstrate an understanding of the conservation of resources	TX2_US2103A17	The Impact of Energy Resources: Part II (TX2_US2103A17)	The Animation teaches an understanding of the conservation of resources.	Q1-Q2-Q3-Q4 in the "After the Animation" section of the Question-Answer Sheet, as well as Q1-Q2-Q3-Q4 in the Enrichment Sheet, assess student understanding of biomass geothermal energy and solar energy as renewable energy sources that conserve other energy resources.
23	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(iii) demonstrate the proper disposal or recycling of materials	TX2_US200101CD	Laboratory Safety (TX2_US200101CD)	In Part 3 of the Activity Object of the Activity Object, when the student clicks on the waste disposal bin, an animation that demonstrates the proper disposal or recycling of materials is seen.	Q3 of the Activity Sheet asks students about the proper disposal of chemicals used in laboratories.
24	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(iii) demonstrate the proper disposal or recycling of materials	TX2_US4101A10	Substances that Cause Environmental Pollution (TX2_US4101A10)	The Animation demonstrates the proper disposal or recycling of materials.	
25	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(iii) demonstrate the proper disposal or recycling of materials	TX2_US2103A16	The Impact of Energy Resources: Part I (TX2_US2103A16)	The Animation demonstrates the proper disposal or recycling of materials.	Q2 of the Enrichment Sheet assesses students on the proper disposal of nuclear waste.
26	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(ii) demonstrate an understanding of the conservation of resources	TX2_US2801A12	What is Science? (TX2_US2801A12)	After completing the Enrichment Sheet, students know the definition of science, as specified in subsection (b)(2).	Enrichment Sheet 1 assesses the definition of science, as encompassing components specified in subsection (b)(2).

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27	(1) Scientific processes. The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:	(C) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials	(ii) demonstrate an understanding of the conservation of resources	TX2_US4101A01	From Alchemy to Chemistry (TX2_US4101A01)	The Animation explains alchemy and how alchemy differs from the modern science of chemistry. This helps students understand the definition of science.	
28	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section	(i) know the definition of science, as specified in subsection (b)(2) [above]	TX2_US2801A12	What is Science? (TX2_US2801A12)	The Animation explains the definition of science as encompassing components specified in subsection (b)(2).	Q1-Q2-Q3 in the Question-Answer Sheet, as well as Q1 in the Enrichment Sheet, assess student understanding of the definition and nature of science, as encompassing components specified in subsection (b)(2).
29	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section	(ii) understand that [science] has limitations, as specified in subsection (b)(2) [above]	TX2_US2801A12	What is Science? (TX2_US2801A12)	The Animation teaches that science has limitations, as specified in subsection (b)(2).	Q3 of the Question-Answer Sheet, as well as Q2 of the Enrichment Sheet, assess student understanding of the limitations of science, as specified in subsection (b)(2).
30	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section	(ii) understand that [science] has limitations, as specified in subsection (b)(2) [above]	TX2_US2801A12	What is Science? (TX2_US2801A12)		The Question-Answer Sheet assesses student understanding of the fact that science has limitations, as specified in subsection (b)(2).
31	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section	(ii) understand that [science] has limitations, as specified in subsection (b)(2) [above]	TX2_US2801A12	What is Science? (TX2_US2801A12)	The Enrichment Sheet explains that science has limitations, as specified in subsection (b)(2).	Enrichment Sheet 2 assesses students as to their understanding of the limitations of science.
32	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section	(ii) understand that [science] has limitations, as specified in subsection (b)(2) [above]	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	The Activity Object teaches students that science has limitations, as specified in subsection (b)(2), by explaining the evolution of a scientific model through ongoing research.	
33	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section	(ii) understand that [science] has limitations, as specified in subsection (b)(2) [above]	TX2_US420104CD	History of the Atomic Model: From Ancient Greece to Thomson (TX2_US420104CD)	The Activity Object teaches students that science has limitations, as specified in subsection (b)(2), by explaining the evolution of a scientific model through ongoing research.	
34	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(i) know that scientific hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence	TX2_US2801A12	What is Science? (TX2_US2801A12)	The Animation explains that hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence. This is accomplished by leading students through scientific processes.	Q2 and Q8 of Enrichment Sheet 1 assess student understanding of the fact that hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence.
35	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(i) know that scientific hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence	TX2_US2801A12	What is Science? (TX2_US2801A12)	Enrichment Sheet 1 teaches students that hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence.	

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36	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(i) know that scientific hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Animation explains that hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence. This is accomplished by leading students through scientific processes.	
37	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(i) know that scientific hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	Enrichment Sheet 1 and 2 teach students that hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence.	Enrichment Sheet 2 assesses student understanding of the fact that hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence.
38	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(i) know that scientific hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	The Activity Object shows that hypotheses are tentative statements that must be capable of being supported or not supported by observational evidence.	
39	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(ii) know that scientific hypotheses are testable statements that must be capable of being supported or not supported by observational evidence	TX2_US2801A12	What is Science? (TX2_US2801A12)	The Animation explains that hypotheses are testable statements that must be capable of being supported or not supported by observational evidence. This is accomplished by leading students through scientific processes.	Q4-Q5-Q8 in the Enrichment Sheet assess student understanding of the fact that hypotheses are testable statements that must be capable of being supported or not supported by observational evidence.
40	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(ii) know that scientific hypotheses are testable statements that must be capable of being supported or not supported by observational evidence	TX2_US2801A12	What is Science? (TX2_US2801A12)	Enrichment Sheet 1 teaches students that hypotheses are testable statements that must be capable of being supported or not supported by observational evidence.	
41	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(ii) know that scientific hypotheses are testable statements that must be capable of being supported or not supported by observational evidence	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Animation explains that hypotheses are testable statements that must be capable of being supported or not supported by observational evidence. This is accomplished by leading students through scientific processes.	

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42	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(ii) know that scientific hypotheses are testable statements that must be capable of being supported or not supported by observational evidence	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Enrichment Sheet teaches students that hypotheses are testable statements that must be capable of being supported or not supported by observational evidence.	
43	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(ii) know that scientific hypotheses are testable statements that must be capable of being supported or not supported by observational evidence	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	The Activity Object shows that hypotheses are testable statements that must be capable of being supported or not supported by observational evidence.	
44	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(iii) [know that] hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	TX2_US2801A12	What is Science? (TX2_US2801A12)	The Animation explains that hypotheses of durable explanatory power (high validity), which have been tested over a wide variety of conditions, are incorporated into theories.	Q9-Q10-Q12 in the Enrichment Sheet ask students to explain hypotheses and theories, including the fact that hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories.
45	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(iii) [know that] hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	TX2_US2801A12	What is Science? (TX2_US2801A12)	Enrichment Sheet 1 teaches students that hypotheses of durable explanatory power (high validity), which have been tested over a wide variety of conditions, are incorporated into theories.	
46	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(iii) [know that] hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Animation explains that hypotheses of durable explanatory power (high validity), which have been tested over a wide variety of conditions, are incorporated into theories.	In the Question-Answer Sheet, students are asked questions that assess their understanding of the fact that hypotheses of durable explanatory power (high validity), which have been tested over a wide variety of conditions, are incorporated into theories.
47	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	(iii) [know that] hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Enrichment Sheet teaches students that hypotheses of durable explanatory power (high validity), which have been tested over a wide variety of conditions, are incorporated into theories.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
48	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(i) know that scientific theories are based on natural and physical phenomena	TX2_US2801A12	What is Science? (TX2_US2801A12)	The Animation explains that scientific theories are based on natural and physical phenomena.	In Q11 of the Enrichment Sheet, students are assessed on scientific theories being based on natural and physical phenomena.
49	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(i) know that scientific theories are based on natural and physical phenomena	TX2_US2801A12	What is Science? (TX2_US2801A12)	Enrichment Sheet 1 tells students that scientific theories are based on natural and physical phenomena.	
50	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(i) know that scientific theories are based on natural and physical phenomena	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Animation explains that scientific theories are based on natural and physical phenomena.	
51	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(i) know that scientific theories are based on natural and physical phenomena	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Enrichment Sheet informs students that scientific theories are based on natural and physical phenomena.	Enrichment Sheet 2 assesses the understanding of scientific theories being based on natural and physical phenomena.
52	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(i) know that scientific theories are based on natural and physical phenomena	TX2_US4201A19	Particle Nature of Light (TX2_US4201A19)	Students learn that scientific theories are based on natural and physical phenomena, based on the particle nature of light.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
53	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(ii) know that scientific theories are capable of being tested by multiple independent researchers	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Animation explains that scientific theories are capable of being tested by multiple independent researchers, which increases validity.	Q4 of Enrichment Sheet 2 assesses the fact that scientific theories are capable of being tested by multiple independent researchers.
54	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(ii) know that scientific theories are capable of being tested by multiple independent researchers	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)		In the Question-Answer Sheet, students are asked a question that expects them to know that scientific theories are capable of being tested by multiple independent researchers.
55	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(ii) know that scientific theories are capable of being tested by multiple independent researchers	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Enrichment Sheet teaches students that scientific theories are capable of being tested by multiple independent researchers.	
56	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(ii) know that scientific theories are capable of being tested by multiple independent researchers	TX2_US4201A19	Particle Nature of Light (TX2_US4201A19)	The Animation informs students that scientific theories are capable of being tested by multiple independent researchers by showing many theories about the nature of light.	
57	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(ii) know that scientific theories are capable of being tested by multiple independent researchers	TX2_US420104CD	History of the Atomic Model: From Ancient Greece to Thomson (TX2_US420104CD)	The Activity Object demonstrates to students that scientific theories are capable of being tested by multiple independent researchers.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
58	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(iii) [know that], unlike hypotheses, scientific theories are well-established explanations	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Animation explains that, unlike hypotheses, scientific theories are well-established and must be heavily tested through experimentation in order to be established.	Q3 of the Question-Answer Sheet, as well as Q2 of the Enrichment Sheet 2, assess student understanding of the differences between hypotheses and scientific theories; specifically that unlike hypotheses, scientific theories are well-established explanations that have undergone rigorous testing.
59	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(iii) [know that], unlike hypotheses, scientific theories are well-established explanations	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)		In the Question-Answer Sheet, one of the questions expects students to know that, unlike hypotheses, scientific theories are well-established through experimental testing.
60	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(iii) [know that], unlike hypotheses, scientific theories are well-established explanations	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Enrichment Sheet teaches students that, unlike hypotheses, scientific theories are well-established.	
61	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(iii) [know that], unlike hypotheses, scientific theories are well-established explanations	TX2_US4201A19	Particle Nature of Light (TX2_US4201A19)	The Animation teaches students that scientific theories are well-established.	
62	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(iv) [know that], unlike hypotheses, scientific theories are highly- reliable explanations	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Animation explains that, unlike hypotheses, scientific theories are highly-reliable explanations that are accepted by the scientific process and community.	Q3 of the Question-Answer Sheet assesses student understanding of the differences between hypotheses and scientific theories; specifically that unlike hypotheses, scientific theories are highly-reliable explanations.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
63	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(iv) [know that], unlike hypotheses, scientific theories are highly- reliable explanations	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)		In the Question-Answer Sheet, students are asked a question that expects them to know that, unlike hypotheses, scientific theories are highly-reliable explanations.
64	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(iv) [know that], unlike hypotheses, scientific theories are highly- reliable explanations	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Enrichment Sheet teaches that, unlike hypotheses, scientific theories are highly-reliable explanations.	
65	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(iv) [know that], unlike hypotheses, scientific theories are highly- reliable explanations	TX2_US4201A19	Particle Nature of Light (TX2_US4201A19)	The Animation demonstrates to students that scientific theories are highly-reliable explanations.	
66	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(v) [know that] scientific theories may be subject to change as new areas of science are developed	TX2_US2801A12	What is Science? (TX2_US2801A12)	The Animation explains that scientific theories may be subject to change as new areas of science are developed.	Q6 of the Enrichment Sheet assesses student understanding concerning the fact that scientific theories are subject to change as new areas of science are developed.
67	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(v) [know that] scientific theories may be subject to change as new areas of science are developed	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The end of the Animation explains that scientific theories may be subject to change as new areas of science are developed.	Q2 in the Question-Answer Sheet assesses students regarding their understanding that scientific theories are subject to change as new areas of science are developed.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
68	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(v) [know that] scientific theories may be subject to change as new areas of science are developed	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)		In the Question-Answer Sheet, students are asked to state that scientific theories may be subject to change as new areas of science are developed.
69	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(v) [know that] scientific theories may be subject to change as new areas of science are developed	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	The Activity Object teaches that scientific theories may be subject to change as new areas of science are developed.	
70	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(v) [know that] scientific theories may be subject to change as new areas of science are developed	TX2_US420104CD	History of the Atomic Model: From Ancient Greece to Thomson (TX2_US420104CD)	The Activity Object teaches that scientific theories may be subject to change as new areas of science are developed.	
71	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(vi) [know that] scientific theories may be subject to change as technologies are developed	TX2_US2801A12	What is Science? (TX2_US2801A12)	The Animation explains that scientific theories may be subject to change as new areas of science are developed.	In the Enrichment Sheet question 7, students are asked about scientific theories being subject to change as new technologies are developed.
72	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(vi) [know that] scientific theories may be subject to change as technologies are developed	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Animation explains that scientific theories may be subject to change as new technologies are developed.	In the Question-Answer Sheet question 2, students are asked about scientific theories being subject to change as new technologies are developed.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
73	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(vi) [know that] scientific theories may be subject to change as technologies are developed	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Enrichment Sheet teaches that scientific theories may be subject to change as new technologies are developed.	
74	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(vi) [know that] scientific theories may be subject to change as technologies are developed	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	The Activity Object demonstrates to students that scientific theories may be subject to change as new technologies are developed.	
75	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(vi) [know that] scientific theories may be subject to change as technologies are developed	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)		In the Question-Answer Sheet, students are asked to distinguish between scientific hypotheses and scientific theories.
76	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(C) know that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but may be subject to change as new areas of science and new technologies are developed	(vi) [know that] scientific theories may be subject to change as technologies are developed	TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	Enrichment Sheet 1 and Enrichment Sheet 2 teach students how to distinguish scientific hypotheses from scientific theories.	
77	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(D) distinguish between scientific hypotheses and scientific theories		TX2_US2801A05	Scientific Hypotheses and Theories (TX2_US2801A05)	The Animation teaches students the difference between scientific hypotheses and scientific theories, and their differing roles in scientific research.	Q3 of the Question-Answer Sheet, as well as Q2 of the Enrichment Sheet, assess the students' ability to distinguish between scientific hypotheses and scientific theories.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
78	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(i) plan investigative procedures, including asking questions	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 2 of the Activity Object of the Activity Object, students plan out an investigative procedure while asking questions.	Q1 of the "Plan the Investigation" section in the Lab Sheet asks students to determine what questions they will be asking as they plan the investigative procedure/experiment.
79	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(i) plan investigative procedures, including asking questions	TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	In Part 1 of the Activity Object of the Activity Object, students plan out an investigative procedure, while asking questions.	
80	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(i) plan investigative procedures, including asking questions	TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	In Part 2 of the Activity Object of the Activity Object, students plan out an investigative procedure, while asking questions.	
81	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(i) plan investigative procedures, including asking questions	TX2_US410202CD	Using Solubility to Identify Substances (TX2_US410202CD)	In Part 2 of the Activity Object of the Activity Object, students plan out an investigative procedure, while asking questions.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
82	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(i) plan investigative procedures, including asking questions	TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	The "Extension" section of the Teacher Guide gives suggestions to the teacher to plan further investigative procedures with students. Incorporating questions is part of those procedures.	
83	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ii) plan investigative procedures, including formulating testable hypotheses	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object of the Activity Object, students plan an investigative procedure, including the formulation of a testable hypotheses/prediction, as well as asking questions about the procedure (including how to test the hypotheses).	Q2 in the "Plan the Investigation" section of the Lab Sheet asks students to formulate a testable hypothesis as part of planning the investigative experiment.
84	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ii) plan investigative procedures, including formulating testable hypotheses	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	Part 1 of the Activity Object explains an investigative procedure.	Q2 of the "Plan the Investigation" section of the Lab Sheet asks students to formulate a testable hypothesis as part of planning the investigative experiment.
85	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ii) plan investigative procedures, including formulating testable hypotheses	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In Part 2 of the Activity Object of the Activity Object, students plan an investigative procedure, including the formulation of a testable hypotheses/prediction.	In Part 2 of the Activity Object of the Activity Object, students formulate a hypothesis. Students are then given the chance to update their hypothesis. Then, the student responses are assessed by the Activity Object software, which provides appropriate feedback as to the correctness of the students' hypotheses as they work through the exercises.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
86	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ii) plan investigative procedures, including formulating testable hypotheses	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)	In Part 2 of the Activity Object of the Activity Object, students plan an investigative procedure, including the formulation of a testable hypotheses/prediction.	In Part 2 of the Activity Object of the Activity Object, students formulate a hypothesis and test it. Students are then given the chance to update their hypothesis. Then, the student responses are assessed by the Activity Object software, which provides appropriate feedback as to the correctness of the students' hypotheses as they work through the exercises.
87	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ii) plan investigative procedures, including formulating testable hypotheses	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object of the Activity Object, students plan an investigative procedure, including the formulation of a testable hypotheses/prediction.	In Part 2 of the Activity Object of the Activity Object, students formulate a hypothesis and test it. Students are then given the chance to update their hypothesis. Then, the student responses are assessed by the Activity Object software, which provides appropriate feedback as to the correctness of the students' hypotheses as they work through the exercises.
88	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ii) plan investigative procedures, including formulating testable hypotheses	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In Part 1 of the Activity Object of the Activity Object, students plan an investigative procedure, including selecting scientific glassware such as graduated cylinders.	
89	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ii) plan investigative procedures, including formulating testable hypotheses	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In Part 2 of the Activity Object of the Activity Object, students plan an investigative procedure, including selecting scientific glassware.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
90	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ii) plan investigative procedures, including formulating testable hypotheses	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In Part 1 of the Activity Object, students plan an investigative procedure, including the selection of an electronic balance.	
91	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ii) plan investigative procedures, including formulating testable hypotheses	TX2_US450203MS	The Concentration of Solutions: Molarity and Molality (TX2_US450203MS)	In Part 5 of the Activity Object, students plan an investigative procedure, including the selection of an electronic balance.	
92	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(iii) plan investigative procedures, including selecting equipment, including sufficient scientific glassware	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 2 of the Activity Object of the Activity Object, students plan an investigative procedure, including selecting scientific glassware such as beakers, Erlenmeyer flasks, and graduated cylinders.	Q3 of the "Plan the Investigation" section of the Lab Sheet asks the student to select appropriate glassware as part of planning the investigative procedure/experiment.
93	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(iv) plan investigative procedures, including selecting equipment, including electronic balances	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 2 of the Activity Object, students plan an investigative procedure, including the selection of an electronic balance.	Q4 of the "Plan the Investigation" section of the Lab Sheet asks students to select appropriate equipment as part of planning the investigative procedure, including an electronic balance.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
94	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(v) plan investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, students plan an investigative procedure, including the selection of adequate consumable chemicals such as acids, bases, and bromothymol blue.	Q5 of the "Plan the Investigation" section of the Lab Sheet asks students to select an adequate supply of chemicals. Students must select how much of each chemical they are going to need for the investigative procedure/experiment.
95	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(v) plan investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 2 of the Activity Object, students plan an investigative procedure, including selecting equipment, including an adequate supply of consumable chemicals	In Q5 of the "Plan the Investigation" section of the Lab Sheet, students are asked to select the chemicals they are going to need for the investigative experiment.
96	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(v) plan investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US430107CD	Comparing Ionic and Covalent Compounds (TX2_US430107CD)	In Part 2 of the Activity Object, students plan an investigative procedure, including the selection of consumable chemicals such as potassium iodide (KI), sodium chloride (NaCl), sucrose ($C_{12}H_{22}O_{11}$), and benzoic acid (C_6H_5COOH).	
97	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(v) plan investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In Part 3 of the Activity Object, students plan an investigative procedure, including the selection of consumable chemicals such as $PB(NO_3)_2$, Li_2CO_3, NaI, KOH.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
98	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(v) plan investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In Part 1 of the Activity Object, students plan an investigative procedure, including the selection of consumable chemicals.	
99	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(v) plan investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 2 of the Activity Object, students plan and implement an investigative procedure for which they use a graphing calculator.	Q7 of the "Plan the Investigation" section of the Lab Sheet asks students how to best use their graphing calculator for the investigative experiment.
100	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(v) plan investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US2102A12	Graphing Calculators (TX2_US2102A12)	In the Animation, students shows students how to plan investigative procedures, including selecting technology, including graphing calculators.	In the Enrichment Sheet, students plan investigative procedures, including selecting technology. Graphing calculators are among the instruments that are included.
101	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(v) plan investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US2102A12	Graphing Calculators (TX2_US2102A12)		In the Question-Answer Sheet, students answer questions about planning investigative procedures. This includes selecting technology, and graphing calculators are among the instruments that are included.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
102	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(vi) plan investigative procedures, including selecting technology, including graphing calculators	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, students plan and implement an investigative procedure for which they use a graphing calculator.	Q7 of the "Plan the Investigation" section of the Lab Sheet asks students how to best use their graphing calculator for the investigative experiment.
103	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(vii) plan investigative procedures, including selecting technology, including computers	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 2 of the Activity Object, students plan and implement an investigative procedure for which they use a computer.	Q8 of the "Plan the Investigation" section of the Lab Sheet asks students how to best use their computer for the investigative experiment.
104	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(vii) plan investigative procedures, including selecting technology, including computers	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, students plan and implement an investigative procedure for which they use a computer.	Q8 in the "Plan the Investigation" section of the Lab Sheet asks students how to best use their computer for the investigative experiment.
105	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(vii) plan investigative procedures, including selecting technology, including computers	TX2_US420201CD	Calculating Atomic Mass (TX2_US420201CD)	In Part 2 of the Activity Object, students plan an investigative procedure, including the selection of a computer, which uses software that calculates atomic mass.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
106	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(vii) plan investigative procedures, including selecting technology, including computers	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In Part 2 of the Activity Object, students plan an investigative procedure, including the selection of computer equipment such as a mass spectrometer.	
107	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(vii) plan investigative procedures, including selecting technology, including computers	TX2_US480305CD	Finding Molecular Formula by Using Mole and Molecular Weight (TX2_US480305CD)	In Part 2 of the Activity Object, students plan an investigative procedure, including the selection of computer equipment such as a mass spectrometer.	
108	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(viii) plan investigative procedures, including selecting technology, including probes	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, students plan an investigative procedure, including the use of a probe to collect data through a pH meter.	Q6 in the "Plan the Investigation" section of the Lab Sheet asks the student to determine which probes they are going to use as part of planning the investigative experiment.
109	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(viii) plan investigative procedures, including selecting technology, including probes	TX2_US410304XP	How Electrical Conductivity Varies with Concentration and Temperature (TX2_US410304XP)	In Part 2 of the Activity Object, students plan an investigative procedure, including the use of a probe to collect data through a conductivity meter.	Q6 of the "Plan the Investigation" section of the Lab Sheet asks the student to determine which probes they are going to use as part of planning the investigative procedure/experiment.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
110	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(viii) plan investigative procedures, including selecting technology, including probes	TX2_US480502XP	Batteries, Chemicals, and Potential Difference (TX2_US480502XP)	In Part 2 of the Activity Object, students plan an investigative procedure, including using a probe to collect data through a volt meter.	
111	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ix) implement investigative procedures, including asking questions	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, an investigative procedure is implemented that includes asking students questions about their experimental interactions. Students must also formulate their own questions about their hypotheses and procedures as they proceed through the Activity Object.	Q1 of the "Implement the Investigation" section of the Lab Sheet asks the student to determine if any questions, other than the ones that were used to plan the experiment, came up during implementation.
112	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ix) implement investigative procedures, including asking questions	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In Part 2 of the Activity Object, an investigative procedure is implemented, and students are asked questions about the interactions. Students must also formulate their own questions about their hypotheses and procedures as they proceed through the Activity Object.	
113	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ix) implement investigative procedures, including asking questions	TX2_US450201CD	Molecular Interactions and Solubility (TX2_US450201CD)	In Part 2 of the Activity Object, an investigative procedure is implemented, and students are asked questions about the interactions. Students must also formulate their own questions about their hypotheses and procedures as they proceed through the Activity Object.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
114	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(ix) implement investigative procedures, including asking questions	TX2_US450201CD	Molecular Interactions and Solubility (TX2_US450201CD)	In Part 3 of the Activity Object, an investigative procedure is implemented, and students are asked questions about the interactions. Students must also formulate their own questions about their hypotheses and procedures as they proceed through the Activity Object.	
115	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(x) implement investigative procedures, including formulating testable hypotheses	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, students plan an investigative procedure, and they are asked to formulate a testable hypotheses/prediction.	Q2 of the "Implement the Investigation" section of the Lab Sheet asks students to finalize their hypothesis for the investigative experiment.
116	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(x) implement investigative procedures, including formulating testable hypotheses	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	Part 1 of the Activity Object explains an investigative procedure, and includes the formulation of a hypothesis/prediction.	Q6 of the "Implement the Investigation" section of the Lab Sheet asks students whether or not their initial hypothesis was supported by the experimental data.
117	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(x) implement investigative procedures, including formulating testable hypotheses	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In Part 2 of the Activity Object, students implement an investigative procedure, including the formulation of a testable hypothesis/prediction.	In Part 2 of the Activity Object, students formulate a hypothesis and test it. Students are then given the chance to update their hypothesis. The students' responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
118	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(x) implement investigative procedures, including formulating testable hypotheses	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In Part 2 of the Activity Object, students implements an investigative procedure, including asking students to formulate a testable hypotheses/prediction.	In Part 2 of the Activity Object, students formulate a hypothesis and test it. Students are then given the chance to update their hypothesis. The students' responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
119	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(x) implement investigative procedures, including formulating testable hypotheses	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)	In Part 2 of the Activity Object, students implement an investigative procedure, including the formulation of a testable hypothesis/prediction.	In Part 2 of the Activity Object, students formulate a hypothesis and test it. Students are then given the chance to update their hypothesis. The students' responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
120	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xi) implement investigative procedures, including selecting equipment, including sufficient scientific glassware	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 2 of the Activity Object, students implement an investigative procedure, and they are taught to select sufficient scientific glassware such as beakers, Erlenmeyer flasks, and graduated cylinders.	A question in the "Implement the Investigation" section of the Lab Sheet asks a question that asks students to select sufficient scientific glassware.
121	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xi) implement investigative procedures, including selecting equipment, including sufficient scientific glassware	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In the Lab Sheet, students implement investigative procedures. They are taught to select equipment, including sufficient scientific glassware.	In the Lab Sheet, students are asked a question about the glassware required for their procedure/investigation.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
122	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xi) implement investigative procedures, including selecting equipment, including sufficient scientific glassware	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In Part 1 of the Activity Object, students implement an investigative procedure, including the selection of sufficient scientific glassware such as graduated cylinders.	
123	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xi) implement investigative procedures, including selecting equipment, including sufficient scientific glassware	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In Part 2 of the Activity Object, students implement an investigative procedure, including the selection of sufficient scientific glassware.	
124	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xii) implement investigative procedures, including selecting equipment, including electronic balances	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 2 of the Activity Object, students implement an investigative procedure that includes the selection of an electronic balance.	Q3 and Q5 in the "Implement the Investigation" of the Lab Sheet ask students to make measurements using an electronic balance.
125	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xii) implement investigative procedures, including selecting equipment, including electronic balances	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In Part 1 of the Activity Object, students implement an investigative procedure, including the selection of an electronic balance.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
126	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xii) implement investigative procedures, including selecting equipment, including electronic balances	TX2_US450203MS	The Concentration of Solutions: Molarity and Molality (TX2_US450203MS)	In Part 5 of the Activity Object, students implement an investigative procedure, including the selection of an electronic balance.	
127	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xiii) implement investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, students implement an investigative procedure, including the selection of consumable chemicals such as acids, bases, and bromothymol blue.	The Lab Sheet asks a question about planning for, and selecting, an adequate supply of consumable chemicals.
128	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xiii) implement investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In Part 3 of the Activity Object, students implement an investigative procedure, including the selection of consumable chemicals such as PB(NO3)2, Li2CO3, NaI, and KOH.	
129	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xiii) implement investigative procedures, including selecting equipment, including an adequate supply of consumable chemicals	TX2_US430107CD	Comparing Ionic and Covalent Compounds (TX2_US430107CD)	In Part 2 of the Activity Object, students implement an investigative procedure, including the selection of consumable chemicals such as potassium iodide (KI), sodium chloride (NaCl), sucrose (C12H22O11), and benzoic acid (C6H5COOH).	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
130	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xiv) implement investigative procedures, including selecting technology, including graphing calculators	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 3 of the Activity Object, students plan and implement an investigative procedure for which they use a graphing calculator.	The Lab Sheet assesses the use of a graphing calculator.
131	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xiv) implement investigative procedures, including selecting technology, including graphing calculators	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 2 of the Activity Object, students plan and implement an investigative procedure for which they use a graphing calculator.	The Lab Sheet assesses the use of a graphing calculator.
132	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xiv) implement investigative procedures, including selecting technology, including graphing calculators	TX2_US2102A12	Graphing Calculators (TX2_US2102A12)	The Animation teaches how to implement investigative procedures. As part of these procedures, students select technology that includes a graphing calculator.	
133	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xiv) implement investigative procedures, including selecting technology, including graphing calculators	TX2_US2102A12	Graphing Calculators (TX2_US2102A12)	In the Enrichment Sheet, students implement investigative procedures. As part of these procedures, students select technology that includes a graphing calculator.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
134	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xiv) implement investigative procedures, including selecting technology, including graphing calculators	TX2_US2102A12	Graphing Calculators (TX2_US2102A12)	In the Question-Answer Sheet, students learn how to implement investigative procedures. This includes selecting technology such as graphing calculators.	
135	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xv) implement investigative procedures, including selecting technology, including computers	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 2 of the Activity Object, students plan and implement an investigative procedure for which they use a computer.	The Lab Sheet assesses the use of computers.
136	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xv) implement investigative procedures, including selecting technology, including computers	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, students plan and implement an investigative procedure for which they use a computer.	The Lab Sheet assesses the use of computers.
137	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xv) implement investigative procedures, including selecting technology, including computers	TX2_US420201CD	Calculating Atomic Mass (TX2_US420201CD)	In Part 2 of the Activity Object, students implement an investigative procedure, including the selection of a computer to use software that calculates atomic mass.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
138	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xv) implement investigative procedures, including selecting technology, including computers	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In Part 2 of the Activity Object, students implement investigative procedures. This includes selecting technology such as computers and spectrometers.	
139	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xv) implement investigative procedures, including selecting technology, including computers	TX2_US480305CD	Finding Molecular Formula by Using Mole and Molecular Weight (TX2_US480305CD)	In Part 2 of the Activity Object, students implement investigative procedures. This includes selecting technology such as computers and mass spectrometers.	
140	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xvi) implement investigative procedures, including selecting technology, including probes	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, students implements an investigative procedure, including the use of a probe to collect data through a pH meter.	Q6 in the "Plan the Investigation" section of the Lab Sheet asks students to determine which probes they are going to use as part of planning their investigative experiment.
141	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xvi) implement investigative procedures, including selecting technology, including probes	TX2_US410304XP	How Electrical Conductivity Varies with Concentration and Temperature (TX2_US410304XP)	In Part 2 of the Activity Object, students implement an investigative procedure, including the use of a probe to collect data through a conductivity meter.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
142	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting equipment and technology, including graphing calculators, computers and probes, sufficient scientific glassware such as beakers, Erlenmeyer flasks, pipettes, graduated cylinders, volumetric flasks, safety goggles, and burettes, electronic balances, and an adequate supply of consumable chemicals	(xvi) implement investigative procedures, including selecting technology, including probes	TX2_US480502XP	Batteries, Chemicals, and Potential Difference (TX2_US480502XP)	In Part 2 of the Activity Object, students implement an investigative procedure, including the use of a probe to collect data through a volt meter.	
143	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(i) collect data with accuracy	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, students collect data with accuracy in multiple trials using a barometer.	The Investigation Sheet has a question in which it assesses the accurate collection of data.
144	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(i) collect data with accuracy	TX2_US4101A18	Accuracy and Precision (TX2_US4101A18)	In the Animation, data is collected during three trials to ensure accuracy.	Q1 in the Question-Answer Sheet assesses collecting data with accuracy.
145	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(i) collect data with accuracy	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In Part 2 of the Activity Object, students collect multiple trials of data to ensure accuracy by using a vessel, gas cylinder, barometer, and experiment report.	
146	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(i) collect data with accuracy	TX2_US2801A08	Experimental Error (TX2_US2801A08)	In the Animation, the importance of accuracy is explained, as well as the fact that inaccuracy can result in error.	
147	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(i) collect data with accuracy	TX2_US4101A18	Accuracy and Precision (TX2_US4101A18)		In the Lab Sheet, students are required to answer questions about the accuracy of the data that they work with and collect.
148	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(ii) collect data with precision	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, students collect data with precision using a barometer.	The Investigation Sheet has a question that assesses collecting data with precision.
149	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(ii) collect data with precision	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)	In Part 2 of the Activity Object, students collect data with precision using a digital scale and mole calculator.	
150	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(ii) collect data with precision	TX2_US4101A18	Accuracy and Precision (TX2_US4101A18)	In the Animation, three scales are used to collect data with precision.	Q2 of the Question-Answer Sheet assesses collecting data with precision.
151	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(iii) make measurements with accuracy	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, students make measurements with accuracy in multiple trials using a barometer.	In the Investigation Sheet, students are assessed on making measurements with accuracy.
152	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(iii) make measurements with accuracy	TX2_US4101A18	Accuracy and Precision (TX2_US4101A18)	In the Animation measurements are made with accuracy by taking the same measurements in three different trials.	Q1 of the Question-Answer Sheet assesses students on making measurements with accuracy.
153	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(iii) make measurements with accuracy	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)	In Part 2 of the Activity Object, students make multiple measurements with accuracy using a barometer, thermometer, and vessel.	
154	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(iii) make measurements with accuracy	TX2_US2801A08	Experimental Error (TX2_US2801A08)	The Animation explains how to make measurements with accuracy through multiple trials.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
155	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(iv) make measurements with precision	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, measurements are made with precision using a digital temperature gauge.	In the Investigation Sheet, students are assessed on making measurements with precision.
156	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(F) collect data and make measurements with accuracy and precision	(iv) make measurements with precision	TX2_US440202XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440202XP)	In Part 2 of the Activity Object, measurements are made with precision using digital pressure and temperature gauges.	
157	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(i) express chemical quantities using scientific conventions, including dimensional analysis	TX2_US210213MS	Metric System and Dimensional Analysis (TX2_US210213MS)	In the Activity Object, students express chemical quantities using scientific conventions, including dimensional analysis.	In the Activity Sheet, Section 3 of the Learner Journal asks assessment questions about scientific conventions, including dimensional analysis.
158	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(i) express chemical quantities using scientific conventions, including dimensional analysis	TX2_US210214MS	SI Units and Dimensional Analysis (TX2_US210214MS)	In the Activity Object, students express chemical quantities using scientific conventions, including dimensional analysis.	In the Activity Sheet, Section 3 of the Learner Journal asks assessment questions about scientific conventions, including dimensional analysis.
159	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(i) express chemical quantities using scientific conventions, including dimensional analysis	TX2_US450203MS	The Concentration of Solutions: Molarity and Molality (TX2_US450203MS)	In the Activity Object, students express chemical quantities using scientific conventions, including dimensional analysis.	
160	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(i) express chemical quantities using scientific conventions, including dimensional analysis	TX2_US450204MS	The Concentration of Solutions: Mass Fraction and Mass Percent (TX2_US450204MS)	In the Activity Object, students express chemical quantities using scientific conventions, including dimensional analysis.	
161	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(i) express chemical quantities using scientific conventions, including dimensional analysis	TX2_US480302MS	Calculating Moles By Using the Mass And the Number Of Particles (TX2_US480302MS)	In the Activity Object, students express chemical quantities using scientific conventions, including dimensional analysis.	
162	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(ii) express chemical quantities using mathematical procedures, including dimensional analysis	TX2_US210213MS	Metric System and Dimensional Analysis (TX2_US210213MS)	In the Activity Object, students express chemical quantities using mathematical procedures, including dimensional analysis.	In the Activity Sheet, Section 3 of the Learner Journal includes assessment questions about mathematical conventions, including dimensional analysis.
163	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(ii) express chemical quantities using mathematical procedures, including dimensional analysis	TX2_US210214MS	SI Units and Dimensional Analysis (TX2_US210214MS)	In the Activity Object, students express chemical quantities using mathematical procedures, including dimensional analysis.	
164	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(ii) express chemical quantities using mathematical procedures, including dimensional analysis	TX2_US450203MS	The Concentration of Solutions: Molarity and Molality (TX2_US450203MS)	In the Activity Object, students express chemical quantities using mathematical procedures, including dimensional analysis.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
165	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(ii) express chemical quantities using mathematical procedures, including dimensional analysis	TX2_US450204MS	The Concentration of Solutions: Mass Fraction and Mass Percent (TX2_US450204MS)	In the Activity Object, students express chemical quantities using mathematical procedures, including dimensional analysis.	
166	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(ii) express chemical quantities using mathematical procedures, including dimensional analysis	TX2_US480302MS	Calculating Moles By Using the Mass And the Number Of Particles (TX2_US480302MS)	In the Activity Object, students express chemical quantities using mathematical procedures, including dimensional analysis.	
167	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(ii) express chemical quantities using mathematical procedures, including dimensional analysis	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Enrichment Sheet, chemical quantities are expressed using scientific conventions, including scientific notation.	In Enrichment Sheet 2, students must express chemical quantities using scientific conventions, including scientific notation.
168	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(iii) express chemical quantities using scientific conventions, including scientific notation	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Animation, chemical quantities are expressed using scientific conventions, including scientific notation.	Q1 of Enrichment Sheet 1 asks students to express scientific quantities according to scientific conventions, including scientific notation.
169	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(iv) express chemical quantities using mathematical procedures, including scientific notation	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Animation, chemical quantities are expressed using mathematical procedures, including scientific notation.	Q1 in Enrichment Sheet asks students to express scientific quantities according to mathematical procedures, including scientific notation.
170	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(iv) express chemical quantities using mathematical procedures, including scientific notation	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Enrichment Sheet, chemical quantities are expressed using mathematical procedures, including scientific notation.	In Enrichment Sheet 2, students must express chemical quantities using mathematical procedures, including scientific notation.
171	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(v) express chemical quantities using scientific conventions, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Animation, chemical quantities are expressed using scientific conventions, including significant figures.	Q3 in the Question-Answer Sheet asks students to express chemical quantities according to scientific conventions, including significant figures.
172	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(v) express chemical quantities using scientific conventions, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	Enrichment Sheet 2 expresses chemical quantities using scientific conventions, including significant figures.	In Enrichment Sheet 2, students must express chemical quantities using scientific conventions, including significant figures.
173	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(vi) express chemical quantities using mathematical procedures, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Animation, chemical quantities are expressed using mathematical procedures, including significant figures.	Q3 in the Question-Answer Sheet asks students to express scientific quantities according to mathematical procedures, including significant figures.

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	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
174	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(vi) express chemical quantities using mathematical procedures, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	Enrichment Sheet 2 expresses chemical quantities using mathematical procedures, including significant figures.	In Enrichment Sheet 2, students must express chemical quantities using mathematical procedures, including significant figures.
175	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(vii) manipulate chemical quantities using mathematical procedures, including dimensional analysis	TX2_US210213MS	Metric System and Dimensional Analysis (TX2_US210213MS)	In the Activity Object, students manipulate chemical quantities using mathematical procedures, including dimensional analysis.	Q1 and Q2 in the "Practice" section of the Independent Practice Sheet require the student to manipulate quantities using mathematical procedures, including dimensional analysis.
176	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(vii) manipulate chemical quantities using mathematical procedures, including dimensional analysis	TX2_US210214MS	SI Units and Dimensional Analysis (TX2_US210214MS)	In the Activity Object, students manipulate chemical quantities using mathematical procedures, including dimensional analysis.	Q1 and Q2 in the "Practice" section of the Independent Practice Sheet require students to manipulate quantities using mathematical procedures, including dimensional analysis.
177	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(vii) manipulate chemical quantities using mathematical procedures, including dimensional analysis	TX2_US450203MS	The Concentration of Solutions: Molarity and Molality (TX2_US450203MS)	In the Activity Object, students manipulate chemical quantities using mathematical procedures, including dimensional analysis.	
178	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(vii) manipulate chemical quantities using mathematical procedures, including dimensional analysis	TX2_US450204MS	The Concentration of Solutions: Mass Fraction and Mass Percent (TX2_US450204MS)	In the Activity Object, students manipulate chemical quantities using mathematical procedures, including dimensional analysis.	
179	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(vii) manipulate chemical quantities using mathematical procedures, including dimensional analysis	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	The Animation explains scientific conventions, including scientific notation and significant figures.	
180	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(viii) manipulate chemical quantities using scientific conventions, including scientific notation	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Animation, chemical quantities are manipulated using scientific conventions, including scientific notation.	Enrichment Sheet 2 includes questions that assess student understanding of scientific conventions, including the use of scientific notation.
181	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(viii) manipulate chemical quantities using scientific conventions, including scientific notation	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)		In Enrichment Sheet 1, students must manipulate chemical quantities using scientific conventions, including scientific notation.
182	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(viii) manipulate chemical quantities using scientific conventions, including scientific notation	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)		In Enrichment Sheet 2, students must manipulate chemical quantities using scientific conventions, including scientific notation.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
183	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(ix) manipulate chemical quantities using mathematical procedures, including scientific notation	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Animation, chemical quantities are manipulated using mathematical procedures, including scientific notation.	Enrichment Sheet 2 includes questions that assess student understanding of mathematical procedures, including the use of scientific notation.
184	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(ix) manipulate chemical quantities using mathematical procedures, including scientific notation	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)		In Enrichment Sheet 1, students must manipulate chemical quantities using mathematical procedures, including scientific notation.
185	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(ix) manipulate chemical quantities using mathematical procedures, including scientific notation	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)		In Enrichment Sheet 2, students must manipulate chemical quantities using mathematical procedures, including scientific notation.
186	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(x) manipulate chemical quantities using scientific conventions, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Animation, chemical quantities are manipulated using scientific conventions, including significant figures.	Enrichment Sheet 2 includes questions that assess student understanding of scientific conventions, including the use of significant figures.
187	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(x) manipulate chemical quantities using scientific conventions, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)		In Enrichment Sheet 1, students must manipulate chemical quantities using scientific conventions, including significant figures.
188	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(x) manipulate chemical quantities using scientific conventions, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)		In Enrichment Sheet 2, students must manipulate chemical quantities using scientific conventions, including significant figures.
189	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(xi) manipulate chemical quantities using mathematical procedures, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)	In the Animation, chemical quantities are manipulated using mathematical procedures, including significant figures.	Enrichment Sheet 2 includes questions that assess student understanding of mathematical procedures, including the use of significant figures.
190	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(xi) manipulate chemical quantities using mathematical procedures, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)		In Enrichment Sheet 1, students must manipulate chemical quantities using mathematical procedures, including significant figures.
191	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(G) express and manipulate chemical quantities using scientific conventions and mathematical procedures, including dimensional analysis, scientific notation, and significant figures	(xi) manipulate chemical quantities using mathematical procedures, including significant figures	TX2_US4101A24	Scientific Notation and Significant Figures (TX2_US4101A24)		In Enrichment Sheet 2, students must manipulate chemical quantities using mathematical procedures, including significant figures.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
192	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(H) organize, analyze, evaluate, make inferences, and predict trends from data	(i) organize data	TX2_US410202CD	Using Solubility to Identify Substances (TX2_US410202CD)	In the Activity Object, students organize data.	
193	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(H) organize, analyze, evaluate, make inferences, and predict trends from data	(i) organize data	TX2_US4101A19	Applying and Communicating Scientific Information (TX2_US4101A19)	In Enrichment Sheet 1, students organize data in a table and graph it.	In Enrichment Sheet 1, students must organize data in a table and describe trends.
194	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(H) organize, analyze, evaluate, make inferences, and predict trends from data	(i) organize data	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In the "Implement the Investigation" section of the Lab Sheet, students organize data.	Q5 in the "Implement the Investigation" section of the Lab Sheet asks students to organize data.
195	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(H) organize, analyze, evaluate, make inferences, and predict trends from data	(ii) analyze data	TX2_US410202CD	Using Solubility to Identify Substances (TX2_US410202CD)	In the Activity Object, students analyze data.	Q2 and Q10 in the Assessment of the Activity Object require the student to analyze data.
196	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(H) organize, analyze, evaluate, make inferences, and predict trends from data	(iii) evaluate data	TX2_US410202CD	Using Solubility to Identify Substances (TX2_US410202CD)	In the Activity Object, students evaluate data.	Q9 of the Assessment in the Activity Object asks students to evaluate data.
197	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(H) organize, analyze, evaluate, make inferences, and predict trends from data	(iv) make inferences from data	TX2_US410202CD	Using Solubility to Identify Substances (TX2_US410202CD)	In the Activity Object, students make inferences from data.	Q1 and Q2 of the Activity Sheet require the student to make inferences from data.
198	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(H) organize, analyze, evaluate, make inferences, and predict trends from data	(v) predict trends from data	TX2_US410202CD	Using Solubility to Identify Substances (TX2_US410202CD)	In the Activity Object, students predict trends from data.	Q3-Q4-Q6-Q7-Q8 of the Assessment in the Activity Object ask the student to predict a trend from data.
199	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(H) organize, analyze, evaluate, make inferences, and predict trends from data	(v) predict trends from data	TX2_US4101A19	Applying and Communicating Scientific Information (TX2_US4101A19)	Enrichment Sheet 1 involves an activity in which students graph data.	In Enrichment Sheet 1, students graph data and report on the trends it reveals.
200	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(I) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports	(i) communicate valid conclusions supported by the data through [various] methods	TX2_US4101A19	Applying and Communicating Scientific Information (TX2_US4101A19)	In the Animation, students learn how to communicate valid conclusions supported by data, through various methods.	Q3 and Q4 in the Question-Answer Sheet, as well as Q1-Q2-Q3 in the Enrichment Sheet, ask the student to convey conclusions supported by data, through various methods.
201	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(I) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports	(i) communicate valid conclusions supported by the data through [various] methods	TX2_US4101A19	Applying and Communicating Scientific Information (TX2_US4101A19)		In the Question-Answer Sheet, students answer questions about communicating valid conclusions supported by data, through various methods.
202	(2) Scientific processes. The student uses scientific methods to solve investigative questions. The student is expected to:	(I) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphs, journals, summaries, oral reports, and technology-based reports	(i) communicate valid conclusions supported by the data through [various] methods	TX2_US410202CD	Using Solubility to Identify Substances (TX2_US410202CD)	In Part 2 of the Activity Object, students communicate a valid conclusion for identifying substances using solubility through labeled visual representations, graphs, and an oral report of the experiment.	Q1 in the "Reflections" section of the Activity Sheet asks students to convey conclusions supported by data.
203	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(i) in all fields of science, analyze scientific explanations by using empirical evidence	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In Part 3 of the Activity Object, students analyze the empirical evidence collected from Part 2 of the Activity Object in order to explain the scientific process for specific heat.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
204	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(i) in all fields of science, analyze scientific explanations by using empirical evidence	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanation for the ideal gas law (Boyle’s law) is analyzed by using observational testing.	The Investigation Sheet requires students to analyze scientific explanations by using empirical evidence.
205	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(ii) in all fields of science, analyze scientific explanations by using logical reasoning	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In Part 3 of the Activity Object, students analyze the scientific explanation for the law of multiple proportions by using logical reasoning derived from the evidence collected in Part 2 of the Activity Object.	
206	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(ii) in all fields of science, analyze scientific explanations by using logical reasoning	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanation for ideal gas law (Boyle’s law) is analyzed by using logical reasoning.	Q1 in the Investigation Sheet asks students to use logical reasoning to evaluate Boyle's law.
207	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(iii) in all fields of science, analyze scientific explanations by using experimental testing	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanation for the ideal gas law (Boyle’s law) is analyzed by experimental testing.	The Investigation Sheet includes a question that asks students to use experimental testing to evaluate Boyle's law.
208	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(iii) in all fields of science, analyze scientific explanations by using experimental testing	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In Part 2 of the Activity Object, the scientific explanation for partial pressure (Dalton’s law) is analyzed by using experimental testing.	Q3 in the "Learner Journal" of the Activity Sheet asks students to confirm Dalton's law of partial pressures by measuring the pressure of individual gases, and then combining them before measuring the pressure of the mixture.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
209	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(iii) in all fields of science, analyze scientific explanations by using experimental testing	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)	In Part 2 of the Activity Object, the scientific explanation for Avogadro's law is analyzed by using experimental testing.	Q3 of the "Learner Journal" of the Activity Sheet asks students to confirm Avogadro's law by measuring the volume of different moles of the same gas.
210	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(iii) in all fields of science, analyze scientific explanations by using experimental testing	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)	In Part 2 of the Activity Object, the scientific explanation for Charles's gas law is analyzed by using experimental testing.	
211	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(iv) in all fields of science, analyze scientific explanations by using observational testing	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanation for the ideal gas law (Boyle's law) is analyzed by using observational testing.	Q4 in the Investigation Sheet assesses students on the observational tests that can be conducted to evaluate Boyle's law.
212	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(iv) in all fields of science, analyze scientific explanations by using observational testing	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)	In Part 2 of the Activity Object, the scientific explanation for Charles' gas law is analyzed by using observational testing.	
213	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(v) in all fields of science, analyze scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In the Activity Object, the scientific explanations for the ideal gas law (Boyle's law) are analyzed, including examining all sides of scientific evidence of scientific explanations.	In the Investigation Sheet, students analyze scientific explanations, including examining all sides of scientific evidence for scientific explanations.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
214	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(v) in all fields of science, analyze scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In the Activity Object, the scientific explanations for the law of multiple proportions are analyzed, including examining all sides of scientific evidence of the scientific explanations.	
215	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(v) in all fields of science, analyze scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In the Activity Object, the scientific explanations for partial pressure (Dalton's law) are analyzed, including examining all sides of scientific evidence for the scientific explanations.	
216	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(v) in all fields of science, analyze scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In the Activity Object, the scientific explanations for specific heat are analyzed, including examining all sides of scientific evidence for the scientific explanations.	
217	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(vi) in all fields of science, evaluate scientific explanations by using empirical evidence	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In Part 3 of the Activity Object, students evaluate empirical evidence collected from Part 2 of the Activity Object in order to explain the scientific process for specific heat.	
218	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(vi) in all fields of science, evaluate scientific explanations by using empirical evidence	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanations for the ideal gas law (Boyle's law) are analyzed by using observational testing.	Q2 of the Investigation Sheet assesses students on using the empirical evidence that can be used to support Boyle's law.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
219	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(vii) in all fields of science, evaluate scientific explanations by using logical reasoning	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In Part 3 of the Activity Object, students evaluate the scientific explanations for the law of multiple proportions using logical reasoning derived from the evidence collected in Part 2 of the Activity Object.	
220	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(vii) in all fields of science, evaluate scientific explanations by using logical reasoning	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanations for the ideal gas law (Boyle's law) are analyzed by using logical reasoning.	Q1 of the Investigation Sheet asks students to use logical reasoning to evaluate Boyle's law.
221	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(viii) in all fields of science, evaluate scientific explanations by using experimental testing	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanation for the ideal gas law (Boyle's law) is analyzed by using experimental testing.	Q3 of the Investigation Sheet assesses students on the experimental tests that can be conducted to evaluate Boyle's law.
222	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(viii) in all fields of science, evaluate scientific explanations by using experimental testing	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In Part 2 of the Activity Object, the scientific explanation for partial pressure (Dalton's law) is evaluated by using experimental testing.	Q3 of the "Learner Journal" section of the Activity Sheet asks students to confirm Dalton's law of partial pressures by measuring the pressure of individual gases, then combining them and measuring the pressure of the mixture (experimental testing).
223	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(viii) in all fields of science, evaluate scientific explanations by using experimental testing	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)	In Part 2 of the Activity Object, the scientific explanation for Avogadro's law is evaluated by using experimental testing.	Q3 of the "Learner Journal" section of the Activity Sheet asks students to confirm Avogadro's law by measuring the volume of different moles of same gas (experimental testing).

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
224	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(viii) in all fields of science, evaluate scientific explanations by using experimental testing	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)	In Part 2 of the Activity Object, the scientific explanation for Charles' law of gas is evaluated by using experimental testing.	
225	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(ix) in all fields of science, evaluate scientific explanations by using observational testing	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanation for the ideal gas law (Boyle's law) is evaluated by using observational testing.	Q4 of the Investigation Sheet assesses students on the observational tests that can be conducted to evaluate Boyle's law.
226	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(ix) in all fields of science, evaluate scientific explanations by using observational testing	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)	In Part 2 of the Activity Object, the scientific explanation for Charles' law of gas is evaluated by using observational testing.	
227	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(x) in all fields of science, evaluate scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In the Activity Object, the scientific explanation for the ideal gas law (Boyle's law) is evaluated including examining all sides of scientific evidence.	Q5 of the Investigation Sheet asks students to examine all sides of scientific evidence for Boyle's law.
228	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(x) in all fields of science, evaluate scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In the Activity Object, the scientific explanation for the law of multiple proportions is evaluated including examining all sides of scientific evidence.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
229	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(x) in all fields of science, evaluate scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In the Activity Object, the scientific explanation for partial pressure (Dalton's law) is evaluated including examining all sides of scientific evidence.	
230	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(x) in all fields of science, evaluate scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In the Activity Object, the scientific explanation for specific heat is evaluated including examining all sides of scientific evidence.	
231	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xi) in all fields of science, critique scientific explanations by using empirical evidence	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In Part 3 of the Activity Object, students critique empirical evidence collected from Part 2 of the Activity Object in order to explain the scientific processes for specific heat.	
232	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xi) in all fields of science, critique scientific explanations by using empirical evidence	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanation for the ideal gas law (Boyle's law) is critiqued by using observational testing.	Q7 of the Investigation Sheet assesses the students' ability to use empirical evidence to critique Boyle's law.
233	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xii) in all fields of science, critique scientific explanations by using logical reasoning	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In Part 3 of the Activity Object, students critique the scientific explanations for the law of multiple proportions by using logical reasoning as derived from the evidence collected in Part 2 of the Activity Object.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
234	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xii) in all fields of science, critique scientific explanations by using logical reasoning	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanations for the ideal gas law (Boyle's law) are analyzed by using logical reasoning.	Q6 of the Investigation Sheet assesses students' ability to use logical reasoning to critique Boyle's law.
235	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xiii) in all fields of science, critique scientific explanations by using experimental testing	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanation for Ideal gas law (Boyle's law) is analyzed by experimental testing.	Q8 of the Investigation Sheet asks students to describe the experimental tests that can be conducted to critique Boyle's law.
236	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xiii) in all fields of science, critique scientific explanations by using experimental testing	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In Part 2 of the Activity Object, the scientific explanation for partial pressure (Dalton's law) is critiqued by using experimental testing.	Q3 of the "Learner Journal" section of the Activity Sheet asks students to confirm Avogadro's law by measuring the volume of different moles of gas (experimental testing).
237	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xiii) in all fields of science, critique scientific explanations by using experimental testing	TX2_US440206XP	Partial Pressure (TX2_US440206XP)		Q2 of the "Reflections" section of the Activity Sheet asks students to confirm Dalton's law of partial pressures by measuring the pressure of individual gases, then combining them and measuring the pressure of the mixture (experimental testing).
238	(3) Scientific processes. The student uses	(A) in all fields of science, analyze, e	(xiii) in all fields of science, c	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)	In Part 2 of the Activity Object, the scientific explanation for Avogadro's law is critiqued by using experimental testing.	
239	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xiii) in all fields of science, critique scientific explanations by using experimental testing	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)	In Part 2 of the Activity Object, the scientific explanation for Charles' gas law is critiqued by using experimental testing.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
240	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xiv) in all fields of science, critique scientific explanations by using observational testing	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, the scientific explanation for the ideal gas law (Boyle's law) is critiqued by using observational testing.	Q9 of the Investigation Sheet assesses students on their ability to describe the observational tests that can be conducted to critique Boyle's law.
241	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xiv) in all fields of science, critique scientific explanations by using observational testing	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)	In Part 2 of the Activity Object, the scientific explanation for Charles' law of gas is analyzed by using observational testing.	
242	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xv) in all fields of science, critique scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In the Activity Object, the scientific explanation for the ideal gas law (Boyle's law) is critiqued, including examining all sides of scientific evidence.	Q10 of the Investigation Sheet question asks students to examine all sides of scientific evidence to critique Boyle's law.
243	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xv) in all fields of science, critique scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In the Activity Object, the scientific explanation for the law of multiple proportions is critiqued, including examining all sides of scientific evidence.	
244	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xv) in all fields of science, critique scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In the Activity Object, the scientific explanation for partial pressure (Dalton's law) is critiqued, including examining all sides of scientific evidence.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
245	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student	(xv) in all fields of science, critique scientific explanations, including examining all sides of scientific evidence of those scientific explanations	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In the Activity Object, the scientific explanation for specific heat is critiqued, including examining all sides of scientific evidence.	
246	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials	(i) communicate scientific information extracted from various sources	TX2_US4101A19	Applying and Communicating Scientific Information (TX2_US4101A19)	In the Animation, students are taught how to communicate scientific information extracted from various sources.	Q1 and Q2 of the Enrichment Sheet ask students to communicate scientific information extracted from various sources.
247	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials	(i) communicate scientific information extracted from various sources	TX2_US4101A19	Applying and Communicating Scientific Information (TX2_US4101A19)		In the Question-Answer Sheet, students answer questions about how to communicate scientific information extracted from various sources.
248	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials	(i) communicate scientific information extracted from various sources	TX2_US4101A19	Applying and Communicating Scientific Information (TX2_US4101A19)		In the Enrichment Sheet, students answer questions about how to communicate scientific information extracted from various sources.
249	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials	(i) communicate scientific information extracted from various sources	TX2_US410304XP	How Electrical Conductivity Varies with Concentration and Temperature (TX2_US410304XP)	The Activity Object communicates scientific information that is extracted from an experiment involving current.	Students communicate information involving the experiments in the Activity Object, through their responses to questions generated by the Activity Object software. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
250	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials	(ii) apply scientific information extracted from various sources	TX2_US4101A19	Applying and Communicating Scientific Information (TX2_US4101A19)	The Animation applies scientific information extracted from various sources.	The Question-Answer Sheet asks students to answer questions in which they must reference the application of scientific information extracted from various sources.
251	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials	(ii) apply scientific information extracted from various sources	TX2_US4101A19	Applying and Communicating Scientific Information (TX2_US4101A19)		In Enrichment Sheet 1 and Enrichment Sheet 2, students apply scientific information extracted from various sources.
252	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials	(ii) apply scientific information extracted from various sources	TX2_US410304XP	How Electrical Conductivity Varies with Concentration and Temperature (TX2_US410304XP)	In the Activity Object, scientific information is extracted from an experiment involving current, and is then applied to help attain further data as the Activity Object progresses.	
253	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(C) draw inferences based on data related to promotional materials for products and services	(i) draw inferences based on data related to promotional materials for products	TX2_US4803A02	Evaluating Products and Services (TX2_US4803A02)	The Animation teaches students about drawing inferences based on data related to promotional materials for products.	Q1 and Q2 of Enrichment Sheet 1, as well as Q1 of Enrichment Sheet 2, ask students to draw inferences based on data related to promotional materials for products.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
254	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(C) draw inferences based on data related to promotional materials for products and services	(i) draw inferences based on data related to promotional materials for products	TX2_US4803A02	Evaluating Products and Services (TX2_US4803A02)		In the Question-Answer Sheet, students answer questions that draw inferences based on data related to promotional materials for products.
255	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(C) draw inferences based on data related to promotional materials for products and services	(ii) draw inferences based on data related to promotional materials for services	TX2_US4803A02	Evaluating Products and Services (TX2_US4803A02)	The Animation teaches students about drawing inferences based on data related to promotional materials for services.	Q3 and Q4 of Enrichment Sheet 1, as well as Q2 of Enrichment Sheet 2, ask students to draw inferences based on data related to promotional materials for services.
256	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(C) draw inferences based on data related to promotional materials for products and services	(ii) draw inferences based on data related to promotional materials for services	TX2_US4803A02	Evaluating Products and Services (TX2_US4803A02)		In the Question-Answer Sheet, students answer questions that draw inferences based on data related to promotional materials for services.
257	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(i) evaluate the impact of research on scientific thought	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	The Activity Object evaluates the impact of scientific research on scientific thought.	In the Activity Sheet, students evaluate the impact of research on scientific thought, including how exploring the photoelectric effect helped scientists understand wave-particle quality.
258	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(i) evaluate the impact of research on scientific thought	TX2_US2801A09	The Impact of Scientific Advances on Science and Society (TX2_US2801A09)	The Animation describes and evaluates the impact of scientific research on scientific thought.	
259	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(i) evaluate the impact of research on scientific thought	TX2_US4101A17	Important Chemists (TX2_US4101A17)	The Animation describes and evaluates the impact that the research of some important chemists had on scientific thought.	In the Question-Answer Sheet, students describe and evaluate the impact of research by important chemists on scientific thought.
260	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(i) evaluate the impact of research on scientific thought	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	The Activity Object details the contributions of several historical scientists to our understanding of the atom.	The Activity Sheet asks students to describe the contributions of historical scientists in the field of motion and mechanics.
261	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(i) evaluate the impact of research on scientific thought	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	Section 1 of the Activity Object describes the impacts of Wilhelm Roentgen, Henri Becquerel, and the Curies, to the scientific community and the public.	The Activity Sheet asks students to describe the contributions (impacts) of historical scientists in the field of radioactivity.
262	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(ii) evaluate the impact of research on society	TX2_US2801A09	The Impact of Scientific Advances on Science and Society (TX2_US2801A09)	The Animation describes and evaluates the impact of scientific research on society.	Q2 of the "After the Animation" section of the Question-Answer Sheet asks students to evaluate the impact of research on society.
263	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(ii) evaluate the impact of research on society	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	In the Activity Object, students evaluate the impact of scientific research on society.	
264	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(ii) evaluate the impact of research on society	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	Section 1 of the Activity Object describes Albert Einstein's work with the photoelectric effect, and evaluates the impacts of technology now available in our lives thanks to his work.	The Activity Sheet asks a question that requires students to evaluate the impact of scientific research on society.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
265	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(ii) evaluate the impact of research on society	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	Section 1 of the Activity Object describes the contributions of Wilhelm Roentgen, Henri Becquerel, and the Curies, to the development of radiography that can help detect diseases.	
266	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(ii) evaluate the impact of research on society	TX2_US4101A16	History of Chemistry (TX2_US4101A16)	The Enrichment Sheet describes and evaluates the impact of research on society.	The Enrichment Sheet assesses students' ability to describe and evaluate the impact of research on society.
267	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(iii) evaluate the impact of research on the environment	TX2_US2801A09	The Impact of Scientific Advances on Science and Society (TX2_US2801A09)	The Animation describes and evaluates the impact of scientific research on the environment.	Q3 of the "After the Animation" section in the Question-Answer Sheet asks students to evaluate the impact of research on the environment.
268	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(iii) evaluate the impact of research on the environment	TX2_US410304XP	How Electrical Conductivity Varies with Concentration and Temperature (TX2_US410304XP)	The Activity Object evaluates the impact of scientific research on the environment.	
269	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(D) evaluate the impact of research on scientific thought, society, and the environment	(iii) evaluate the impact of research on the environment	TX2_US4101A16	History of Chemistry (TX2_US4101A16)	The Enrichment Sheet describes and evaluates the impact of research on the environment.	The Enrichment Sheet assesses student understanding of the impact of research on the environment.
270	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(E) describe the connection between chemistry and future careers		TX2_US4101A20	Chemistry and Future Careers (TX2_US4101A20)	The Animation teaches students about the connection between chemistry and future careers.	In the Question-Answer sheet, students are assessed on the connection between chemistry and future careers.
271	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of chemistry and contributions of scientists	(i) research the history of chemistry	TX2_US4101A16	History of Chemistry (TX2_US4101A16)	The Animation describes and teaches the history of chemistry.	In the Question-Answer sheet, students answer questions about the history of chemistry.
272	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of chemistry and contributions of scientists	(i) research the history of chemistry	TX2_US4101A16	History of Chemistry (TX2_US4101A16)	The Enrichment Sheet teaches students additional facts about the history of chemistry.	The Enrichment Sheet asks students to answer questions about, and research an aspect of, the history of chemistry.
273	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of chemistry and contributions of scientists	(ii) research the contributions of scientists	TX2_US4101A17	Important Chemists (TX2_US4101A17)	The Animation teaches students about the contributions of chemists.	In the Question-Answer sheet, students answer questions about the contributions of scientists.
274	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of chemistry and contributions of scientists	(ii) research the contributions of scientists	TX2_US4101A16	History of Chemistry (TX2_US4101A16)	The Enrichment Sheet teaches students additional facts about the contributions of scientists.	The Enrichment Sheet asks students to answer questions about, and research an aspect of, the historical contribution of scientists.
275	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of chemistry and contributions of scientists	(iii) describe the history of chemistry	TX2_US4101A16	History of Chemistry (TX2_US4101A16)	The Animation describes the history of chemistry.	In the Question-Answer sheet, students are asked questions for which they must describe the history of chemistry.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
276	(3) Scientific processes. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:	(F) research and describe the history of chemistry and contributions of scientists	(iv) describe the contributions of scientists	TX2_US4101A17	Important Chemists (TX2_US4101A17)	The Animation describes the contributions of scientists.	In the Question-Answer sheet, students are asked questions for which they must describe the contributions of scientists.
277	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(A) differentiate between physical and chemical changes and properties	(i) differentiate between physical and chemical changes	TX2_US410307CD	Physical and Chemical Changes (TX2_US410307CD)	In Part 1 of the Activity Object, students are required to differentiate between physical and chemical changes by testing the effects of materials within a garage.	Q1-Q2-Q3-Q4-Q5 of the Assessment in the Activity Object ask students to differentiate between physical and chemical changes.
278	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(A) differentiate between physical and chemical changes and properties	(i) differentiate between physical and chemical changes	TX2_US410307CD	Physical and Chemical Changes (TX2_US410307CD)		Q1 of the Activity Sheet asks students to differentiate between physical and chemical changes, in a table.
279	(4) Science concepts. The student knows t	(A) differentiate between physical ar	(ii) differentiate between phys	TX2_US410307CD	Physical and Chemical Changes (TX2_US410307CD)	In the Activity Object, students differentiate between physical and chemical properties.	
280	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(A) differentiate between physical and chemical changes and properties	(ii) differentiate between physical and chemical properties	TX2_US410307CD	Physical and Chemical Changes (TX2_US410307CD)	The Enrichment Sheet teaches students how to differentiate between physical and chemical properties.	In the Enrichment Sheet, students are asked questions for which they must differentiate between physical and chemical properties.
281	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(A) differentiate between physical and chemical changes and properties	(ii) differentiate between physical and chemical properties	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In the Activity Object, students differentiate between physical and chemical properties.	The Enrichment Sheet asks students to differentiate between physical and chemical properties.
282	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(A) differentiate between physical and chemical changes and properties	(ii) differentiate between physical and chemical properties	TX2_US4502A03	Let's Decrease the Freezing Point of Water (TX2_US4502A03)	The Animation differentiates between physical and chemical properties.	
283	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(B) identify extensive and intensive properties	(i) identify extensive properties	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In Part 1 of the Activity Object, students learn about, and are required to identify, extensive (characteristic) properties and use them to identify substances.	Q1 and Q2 of the "Reflections" section of the Activity Sheet ask students to identify extensive and intensive properties.
284	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(B) identify extensive and intensive properties	(i) identify extensive properties	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In Part 2 of the Activity Object, students identify extensive properties.	In the Activity Sheet, students are required to complete a table identifying extensive (characteristic) properties.
285	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(B) identify extensive and intensive properties	(i) identify extensive properties	TX2_US410302CD	Physical Properties (TX2_US410302CD)	The Enrichment Sheet identifies and explains extensive properties.	In the Enrichment Sheet, students are asked to identify extensive properties.
286	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(B) identify extensive and intensive properties	(i) identify extensive properties	TX2_US4502A09	Diluting Solutions (TX2_US4502A09)	The Enrichment Sheet identifies and explains extensive properties.	In the Enrichment Sheet, students are asked to identify extensive properties.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
287	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(B) identify extensive and intensive properties	(ii) identify intensive properties	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In Part 1 of the Activity Object, students learn about, and are required to identify, intensive (non-characteristic) properties and use them to identify substances.	In the "Reflections" section of the Activity Sheet, students are asked to identify extensive and intensive properties.
288	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(B) identify extensive and intensive properties	(ii) identify intensive properties	TX2_US410302CD	Physical Properties (TX2_US410302CD)	In Part 2 of the Activity Object, students identify intensive properties.	In the Activity Sheet, students are required to complete a table identifying intensive (non-characteristic) properties.
289	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(B) identify extensive and intensive properties	(ii) identify intensive properties	TX2_US410302CD	Physical Properties (TX2_US410302CD)	The Enrichment Sheet teaches about and identifies intensive properties	In the Enrichment Sheet students are asked to identify intensive properties.
290	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(B) identify extensive and intensive properties	(ii) identify intensive properties	TX2_US4502A09	Diluting Solutions (TX2_US4502A09)	The Enrichment Sheet teaches about and identifies intensive properties	In the Enrichment Sheet students are asked to identify intensive properties.
291	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(C) compare solids, liquids, and gases in terms of compressibility, structure, shape, and volume	(i) compare solids, liquids, and gases in terms of compressibility	TX2_US410205CD	Properties of Solids, Liquids, and Gases (TX2_US410205CD)	In the Activity Object, students compare solids, liquids, and gases in terms of compressibility.	Q1 of the "Reflections" section in the Activity Sheet, as well as Q1-Q4-Q5 of the Assessment in the Activity Object, ask students to compare solids, liquids, and gases in terms of compressibility.
292	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(C) compare solids, liquids, and gases in terms of compressibility, structure, shape, and volume	(ii) compare solids, liquids, and gases in terms of structure	TX2_US410205CD	Properties of Solids, Liquids, and Gases (TX2_US410205CD)	In the Activity Object, students compare solids, liquids, and gases in terms of structure.	Q1-Q2-Q3 "Learner Journal" section of the Activity Sheet, as well as Q2-Q7-Q8-Q10 of the Assessment in the Activity Object, ask students to compare solids, liquids, and gases in terms of structure.
293	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(C) compare solids, liquids, and gases in terms of compressibility, structure, shape, and volume	(iii) compare solids, liquids, and gases in terms of shape	TX2_US410205CD	Properties of Solids, Liquids, and Gases (TX2_US410205CD)	In the Activity Object, students compare solids, liquids, and gases in terms of shape.	Q3 and Q6 of the Assessment in the Activity Object ask students to compare solids, liquids, and gases in terms of shape.
294	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(C) compare solids, liquids, and gases in terms of compressibility, structure, shape, and volume	(iv) compare solids, liquids, and gases in terms of volume	TX2_US410205CD	Properties of Solids, Liquids, and Gases (TX2_US410205CD)	In the Activity Object, students compare solids, liquids, and gases in terms of volume.	Q9 and Q10 of the Assessment in the Activity Object ask students to compare solids, liquids, and gases in terms of volume.
295	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(D) classify matter as pure substances or mixtures through investigation of their properties		TX2_US450207CD	Separation of Mixtures (TX2_US450207CD)	In the Activity Object, students learn about and explore the difference between pure substances and mixtures, and how to separate mixtures using a variety of separation methods.	In the Lab Sheet, students are asked to classify matter as pure substances or mixtures through investigation of their properties.
296	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(D) classify matter as pure substances or mixtures through investigation of their properties		TX2_US450207CD	Separation of Mixtures (TX2_US450207CD)	In the Enrichment Sheet, students learn more about classifying matter as pure substances or mixtures.	In the Enrichment Sheet, students are asked to classify matter as pure substances or mixtures through investigation of their properties.
297	(4) Science concepts. The student knows the characteristics of matter and can analyze the relationships between chemical and physical changes and properties. The student is expected to:	(D) classify matter as pure substances or mixtures through investigation of their properties		TX2_US4502A04	Homogeneous Mixtures (TX2_US4502A04)	The Animation explains the properties of homogeneous and heterogeneous mixtures, and different types of homogeneous mixtures.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
298	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(A) explain the use of chemical and physical properties in the historical development of the Periodic Table	(i) explain the use of chemical properties in the historical development of the Periodic Table	TX2_US4204A01	History of the Periodic Table (TX2_US4204A01)	This animation explains the historical development of the Periodic Table with regard to chemical properties.	Q3 and Q4 of the Question-Answer Sheet ask students to explain the use of chemical properties in the historical development of the Periodic Table.
299	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(A) explain the use of chemical and physical properties in the historical development of the Periodic Table	(i) explain the use of chemical properties in the historical development of the Periodic Table	TX2_US4204A15	General Structure of the Periodic Table (TX2_US4204A15)	The animation explains the general structure of the Periodic Table by showing the metal, nonmetal and metalloid sections.	
300	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(A) explain the use of chemical and physical properties in the historical development of the Periodic Table	(i) explain the use of chemical properties in the historical development of the Periodic Table	TX2_US4204A04	Electron Affinity on the Periodic Table (TX2_US4204A04)	The animation explains how electron affinity changes along the groups and the periods of the Periodic Table.	
301	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(A) explain the use of chemical and physical properties in the historical development of the Periodic Table	(i) explain the use of chemical properties in the historical development of the Periodic Table	TX2_US4301A17	Bonding and the Periodic Table (TX2_US4301A17)	The animation explains how different elements in the Periodic Table form different bonds, and identifies bonding trends in the Periodic Table.	
302	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(A) explain the use of chemical and physical properties in the historical development of the Periodic Table	(i) explain the use of chemical properties in the historical development of the Periodic Table	TX2_US4301A02	Durability of Ionic Bonds (TX2_US4301A02)	The animation relates the strength of an ionic bond with the location of the elements in the Periodic Table.	
303	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(A) explain the use of chemical and physical properties in the historical development of the Periodic Table	(ii) explain the use of physical properties in the historical development of the Periodic Table	TX2_US4204A01	History of the Periodic Table (TX2_US4204A01)	The animation explains the historical development of the Periodic Table with regard to physical properties.	Q1 and Q2 of the "After the Animation" section in the Question-Answer Sheet ask students to explain the use of physical properties in the historical development of the Periodic Table.
304	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(A) explain the use of chemical and physical properties in the historical development of the Periodic Table	(ii) explain the use of physical properties in the historical development of the Periodic Table	TX2_US420406CD	Place the Elements in the Periodic Table (TX2_US420406CD)	In the Activity Object, students are asked to place given elements into the Periodic Table based on their properties.	
305	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(i) use the Periodic Table to identify chemical families, including alkali metals	TX2_US4204A06	Properties of s-Block Elements (TX2_US4204A06)	The Animation uses the Periodic Table to identify chemical families, including alkali metals.	Q1 and Q3 of the Question-Answer Sheet ask students to identify alkali metals on the Periodic Table.
306	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(i) use the Periodic Table to identify chemical families, including alkali metals	TX2_US4204A06	Properties of s-Block Elements (TX2_US4204A06)		In the Question-Answer Sheet, students must use the Periodic Table to identify chemical families, including alkali metals.
307	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(ii) use the Periodic Table to identify chemical families, including alkaline earth metals	TX2_US4204A06	Properties of s-Block Elements (TX2_US4204A06)	The Animation uses the Periodic Table to identify chemical families, including alkaline earth metals.	In the Question-Answer Sheet, students must use the Periodic Table to identify chemical families, including alkaline earth metals.
308	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(ii) use the Periodic Table to identify chemical families, including alkaline earth metals	TX2_US4204A15	General Structure of the Periodic Table (TX2_US4204A15)	The Enrichment Sheet uses the Periodic Table to identify chemical families, including alkaline earth metals.	In the Enrichment Sheet, students must use the Periodic Table to identify chemical families, including alkaline earth metals

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
309	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(iii) use the Periodic Table to identify chemical families, including halogens	TX2_US4204A13	Properties of Group 7A Elements (TX2_US4204A13)	The Animation uses the Periodic Table to identify chemical families, including halogens.	Q1 of the "Before the Animation" section of the Question-Answer Sheet, as well as Q5 of the "After the Animation" section of the Question-Answer Sheet, ask students to use the Periodic Table to identify chemical families, including halogens.
310	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(iv) use the Periodic Table to identify chemical families, including noble gases	TX2_US4204A14	Properties of Group 8A Elements (TX2_US4204A14)	The Animation uses the Periodic Table to identify chemical families, including noble gases.	In the Question-Answer Sheet, students must use the Periodic Table to identify chemical families, including noble gases.
311	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(v) use the Periodic Table to identify chemical families, including transition metals	TX2_US4204A08	Properties of d-Block Elements (TX2_US4204A08)	The Animation uses the Periodic Table to identify chemical families, including transition metals.	Q1 and Q2 of the "After the Animation" section of the Question-Answer Sheet ask students to identify transition metals on the Periodic Table.
312	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(v) use the Periodic Table to identify chemical families, including transition metals	TX2_US4204A08	Properties of d-Block Elements (TX2_US4204A08)		In the Question-Answer Sheet, students answer questions using the Periodic Table to identify chemical families, including transition metals.
313	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(v) use the Periodic Table to identify chemical families, including transition metals	TX2_US420405CD	Physical Properties and the Periodic Table (TX2_US420405CD)	In the Activity Object, students observe how to use the Periodic Table to identify chemical families, including transition metals.	
314	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(vi) use the Periodic Table to explain the properties of chemical families, including alkali metals	TX2_US4204A06	Properties of s-Block Elements (TX2_US4204A06)	The Animation uses the Periodic Table to explain properties of chemical families, including alkali metals.	In the Question-Answer Sheet, students must use the Periodic Table to explain the properties of chemical families, including alkali metals.
315	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(vi) use the Periodic Table to explain the properties of chemical families, including alkali metals	TX2_US420405CD	Physical Properties and the Periodic Table (TX2_US420405CD)	In the Activity Object, students observe how to use the Periodic Table to explain the properties of chemical families, including alkali metals.	
316	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(vi) use the Periodic Table to explain the properties of chemical families, including alkali metals	TX2_US4204A15	General Structure of the Periodic Table (TX2_US4204A15)	The Enrichment Sheet explains how to use the Periodic Table to explain the properties of chemical families, including alkali metals	In the Enrichment Sheet, students must use the Periodic Table to explain the properties of chemical families, including alkali metals.
317	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(vii) use the Periodic Table to explain the properties of chemical families, including alkaline earth metals	TX2_US4204A06	Properties of s-Block Elements (TX2_US4204A06)	The Animation uses the Periodic Table to explain properties of chemical families, including alkaline earth metals.	In the Question-Answer sheet, students must use the Periodic Table to explain the properties of chemical families, including alkaline earth metals.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
318	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(vii) use the Periodic Table to explain the properties of chemical families, including alkaline earth metals	TX2_US420405CD	Physical Properties and the Periodic Table (TX2_US420405CD)	In the Activity Object, students observe how to use the Periodic Table to explain the properties of chemical families, including alkaline earth metals.	
319	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(vii) use the Periodic Table to explain the properties of chemical families, including alkaline earth metals	TX2_US4204A15	General Structure of the Periodic Table (TX2_US4204A15)	The Enrichment Sheet explains how to use the Periodic Table to explain the properties of chemical families, including alkaline earth metals	In the Enrichment Sheet, students must use the Periodic Table to explain the properties of chemical families, including alkaline earth metals
320	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(viii) use the Periodic Table to explain the properties of chemical families, including halogens	TX2_US4204A13	Properties of Group 7A Elements (TX2_US4204A13)	The Animation uses the Periodic Table to explain properties of chemical families, including halogens.	Q6 of the "After the Animation" section of the Question-Answer Sheet asks students to answer questions using the Periodic Table to explain the properties of chemical families, including halogens.
321	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(ix) use the Periodic Table to explain the properties of chemical families, including noble gases	TX2_US4204A14	Properties of Group 8A Elements (TX2_US4204A14)	The Animation uses the Periodic Table to explain properties of chemical families, including noble gases.	Q1 of the "After the Animation" section of the Question-Answer Sheet asks students to explain the properties of noble gases on the Periodic Table.
322	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(ix) use the Periodic Table to explain the properties of chemical families, including noble gases	TX2_US420405CD	Physical Properties and the Periodic Table (TX2_US420405CD)	The Activity Object illustrates how to use the Periodic Table to explain the properties of chemical families, including noble gases.	
323	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(x) use the Periodic Table to explain the properties of chemical families, including transition metals	TX2_US4204A08	Properties of d-Block Elements (TX2_US4204A08)	The Animation uses the Periodic Table to explain properties of chemical families, including transition metals.	Q3 of the "After the Animation" section of the Question-Answer Sheet asks students to explain the properties of transition metals on the Periodic Table.
324	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(x) use the Periodic Table to explain the properties of chemical families, including transition metals	TX2_US4204A08	Properties of d-Block Elements (TX2_US4204A08)		In the Question-Answer Sheet, students must use the Periodic Table to explain the properties of chemical families, including transition metals.
325	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(B) use the Periodic Table to identify and explain the properties of chemical families, including alkali metals, alkaline earth metals, halogens, noble gases, and transition metals	(x) use the Periodic Table to explain the properties of chemical families, including transition metals	TX2_US420405CD	Physical Properties and the Periodic Table (TX2_US420405CD)	In the Activity Object, students are shown how to use the Periodic Table to explain the properties of chemical families, including transition metals.	
326	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(i) use the Periodic Table to identify periodic trends, including atomic radii	TX2_US420401CD	Atomic Radius in the Periodic Table (TX2_US420401CD)	In Part 2 of the Activity Object, students are shown how to use the Periodic Table to indentify periodic trends, including atomic radii.	Q2-Q5-Q6-Q7-Q8-Q9-Q10 of the Assessment in the Activity Object ask students to identify periodic trends on the Periodic Table, including atomic radii.
327	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(i) use the Periodic Table to identify periodic trends, including atomic radii	TX2_US420401CD	Atomic Radius in the Periodic Table (TX2_US420401CD)	In Part 3 of the Activity Object, students are shown how to use the Periodic Table to indentify periodic trends, including atomic radii.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
328	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(ii) use the Periodic Table to identify periodic trends, including ionic radii	TX2_US4204A16	Ionic Radius on the Periodic Table (TX2_US4204A16)	The Animation uses the Periodic Table to identify periodic trends, including ionic radii.	Q3 and Q4 of the Question-Answer Sheet ask students to identify periodic trends on the Periodic Table, including ionic radii.
329	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(iii) use the Periodic Table to identify periodic trends, including electronegativity	TX2_US420403CD	Electronegativity on the Periodic Table (TX2_US420403CD)	In Part 2 of the Activity Object, students are shown how to identify periodic trends on the Periodic Table, including electronegativity.	Q2-Q3-Q4-Q6-Q7-Q8-Q10 of the Assessment in the Activity Object ask students to identify periodic trends on the Periodic Table, including electronegativity.
330	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(iii) use the Periodic Table to identify periodic trends, including electronegativity	TX2_US420403CD	Electronegativity on the Periodic Table (TX2_US420403CD)	In Part 3 of the Activity Object, students are shown how to identify periodic trends on the Periodic Table, including electronegativity.	
331	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(iii) use the Periodic Table to identify periodic trends, including electronegativity	TX2_US420403CD	Electronegativity on the Periodic Table (TX2_US420403CD)	The Enrichment Sheet teaches the use of a Periodic Table to identify periodic trends, including electronegativity.	In the Enrichment Sheet, students must use a Periodic Table to list elements in order of electronegativity.
332	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(iii) use the Periodic Table to identify periodic trends, including electronegativity	TX2_US430104CD	Electronegativity and Chemical Bonding (TX2_US430104CD)	In Part 5 and Part 6 of the Activity Object, students uses the Periodic Table to identify periodic trends based on the electronegativity of elements.	
333	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(iii) use the Periodic Table to identify periodic trends, including electronegativity	TX2_US430104CD	Electronegativity and Chemical Bonding (TX2_US430104CD)	The Enrichment Sheet teaches the use of a Periodic Table to identify periodic trends, including electronegativity.	In the Enrichment Sheet, students must use a Periodic Table to list elements in order of electronegativity.
334	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(iv) use the Periodic Table to identify periodic trends, including ionization energy	TX2_US420404CD	Ionization Energy on the Periodic Table (TX2_US420404CD)	In the Activity Object, students use the Periodic Table to identify periodic trends, including ionization energy.	Q2-Q3-Q7-Q9 of the Assessment in the Activity Object ask students to use the Periodic Table to identify periodic trends, including ionization energy.
335	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(v) use the Periodic Table to explain periodic trends, including atomic radii	TX2_US420401CD	Atomic Radius in the Periodic Table (TX2_US420401CD)	In Part 3 of the Activity Object, students are required to use the Periodic Table to explain periodic trends, including atomic radii.	Q3 and Q4 of the Assessment in the Activity Object ask students to use the Periodic Table to explain periodic trends, including atomic radii.
336	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(vi) use the Periodic Table to explain periodic trends, including ionic radii	TX2_US4204A16	Ionic Radius on the Periodic Table (TX2_US4204A16)	The Animation uses the Periodic Table to explain periodic trends, including ionic radii.	Q1 and Q2 of the Assessment in the Activity Object ask students to use the Periodic Table to explain periodic trends, including ionic radii.
337	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(vi) use the Periodic Table to explain periodic trends, including ionic radii	TX2_US4204A16	Ionic Radius on the Periodic Table (TX2_US4204A16)		In the Question-Answer Sheet, students must use the Periodic Table to explain periodic trends, including ionic radii.
338	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(vii) use the Periodic Table to explain periodic trends, including electronegativity	TX2_US420403CD	Electronegativity on the Periodic Table (TX2_US420403CD)	In Part 4 of the Activity Object, students are shown how to use the Periodic Table to explain periodic trends, including electronegativity.	Q5 and Q9 of the Assessment in the Activity Object ask students to explain periodic trends on the Periodic Table, including electronegativity.
339	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(vii) use the Periodic Table to explain periodic trends, including electronegativity	TX2_US420403CD	Electronegativity on the Periodic Table (TX2_US420403CD)	The Enrichment Sheet teaches the use of the Periodic Table to explain periodic trends, including electronegativity.	In the Enrichment Sheet, students must explain periodic trends, including electronegativity, with the use of a Periodic Table.
340	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(vii) use the Periodic Table to explain periodic trends, including electronegativity	TX2_US430104CD	Electronegativity and Chemical Bonding (TX2_US430104CD)	The Enrichment Sheet teaches the use the Periodic Table to explain periodic trends, including electronegativity	In the Enrichment Sheet, students must explain periodic trends, including electronegativity, with the use of a Periodic Table.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
341	(5) Science concepts. The student understands the historical development of the Periodic Table and can apply its predictive power. The student is expected to:	(C) use the Periodic Table to identify and explain periodic trends, including atomic and ionic radii, electronegativity, and ionization energy	(viii) use the Periodic Table to explain periodic trends, including ionization energy	TX2_US420404CD	Ionization Energy on the Periodic Table (TX2_US420404CD)	In the Activity Object, students are shown how to use the Periodic Table to explain periodic trends, including ionization energy.	Q4-Q5-Q6-Q8 of the Assessment in the Activity Object ask students to explain periodic trends on the Periodic Table, including ionization energy.
342	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(i) understand the experimental design used in the development of modern atomic theory, including Dalton's Postulates	TX2_US420104CD	History of the Atomic Model: From Ancient Greece to Thomson (TX2_US420104CD)	In Part 2 of the Activity Object, students learn about and understand the experimental design used in the development of modern atomic theory, including Dalton's postulates.	Q6 of the Assessment in the Activity Object assesses student understanding of Dalton's contributions to modern atomic theory.
343	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(i) understand the experimental design used in the development of modern atomic theory, including Dalton's Postulates	TX2_US4201A23	History of Atomic Models (TX2_US4201A23)	The animation teaches students about the experimental design used in the development of modern atomic theory, including Dalton's postulates.	Q1 in the "After the Animation" section of the Question-Answer Sheet, as well as Q1 in the Enrichment Sheet, assess student understanding of Dalton's postulates.
344	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(i) understand the experimental design used in the development of modern atomic theory, including Dalton's Postulates	TX2_US4201A23	History of Atomic Models (TX2_US4201A23)	The Enrichment Sheet explains the experimental design used in the development of modern atomic theory, including Dalton's postulates.	The Enrichment Sheet asks students about their understanding of the experimental design used in the development of modern atomic theory, including Dalton's postulates.
345	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(i) understand the experimental design used in the development of modern atomic theory, including Dalton's Postulates	TX2_US4201A23	History of Atomic Models (TX2_US4201A23)		In the Question-Answer Sheet, students are asked questions to assess their understanding of the experimental design used in the development of modern atomic theory, including Dalton's postulates.
346	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(ii) understand the conclusions used in the development of modern atomic theory, including Dalton's Postulates	TX2_US420104CD	History of the Atomic Model: From Ancient Greece to Thomson (TX2_US420104CD)	In Part 2 of the Activity Object, students learn about and understand the conclusions used in the development of modern atomic theory, including Dalton's Postulates.	Q6 of the Assessment in the Activity Object asks students to explain Dalton's conclusions and contributions to modern atomic theory.
347	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(ii) understand the conclusions used in the development of modern atomic theory, including Dalton's Postulates	TX2_US420104CD	History of the Atomic Model: From Ancient Greece to Thomson (TX2_US420104CD)	In the Activity Sheet, students are taught about conclusions used in the development of modern atomic theory, including Dalton's Postulates.	Q1 of the Question-Answer Sheet, as well as Q1 of the Enrichment Sheet, assess student understanding of Dalton's postulates.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
348	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(ii) understand the conclusions used in the development of modern atomic theory, including Dalton's Postulates	TX2_US4201A23	History of Atomic Models (TX2_US4201A23)	After viewing the Animation, students understand the conclusions used in the development of modern atomic theory, including Dalton's Postulates.	In the Question-Answer Sheet, students are asked questions in order to understand the conclusions used in the development of modern atomic theory, including Dalton's Postulates.
349	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(iii) understand the experimental design used in the development of modern atomic theory, including Thomson's discovery of electron properties	TX2_US420104CD	History of the Atomic Model: From Ancient Greece to Thomson (TX2_US420104CD)	In Part 3 of the Activity Object, students learn about the experimental design used in the development of modern atomic theory, including Thomson's discovery of electron properties, by performing the experiment that led to Thomson's theory.	Q2 in the "Learner Journal" section of the Activity Sheet asks students about the experimental design used in the development of modern atomic theory, including Thomson's discovery of electron properties.
350	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(iii) understand the experimental design used in the development of modern atomic theory, including Thomson's discovery of electron properties	TX2_US420104CD	History of the Atomic Model: From Ancient Greece to Thomson (TX2_US420104CD)	In the Activity Sheet, students learn about the experimental design used in the development of modern atomic theory, including Thomson's discovery of electron properties, by drawing and labeling the experimental setup.	In the Activity Sheet, students are assessed on their understanding of the experimental design used in the development of modern atomic theory, including Thomson's discovery of electron properties, by drawing and labeling the experimental setup.
351	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(iii) understand the experimental design used in the development of modern atomic theory, including Thomson's discovery of electron properties	TX2_US4201A23	History of Atomic Models (TX2_US4201A23)	The Animation teaches about the conclusions used in the development of modern atomic theory, including Thomson's discovery of electron properties.	In the Question-Answer Sheet, students are asked questions to assess their understand of the experimental design used in the development of modern atomic theory, including Thomson's discovery of electron properties.
352	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(iv) understand the conclusions used in the development of modern atomic theory, including Thomson's discovery of electron properties	TX2_US420104CD	History of the Atomic Model: From Ancient Greece to Thomson (TX2_US420104CD)	In Part 3 of the Activity Object, students learn about the conclusions used in the development of modern atomic theory, including Thomson's discovery of electron properties, by performing his experiment and seeing the results.	Q3-Q7-Q9 of the Assessment in the Activity Object ask students about the conclusions used in the development of modern atomic theory, including Thomson's discovery of electron properties.
353	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(iv) understand the conclusions used in the development of modern atomic theory, including Thomson's discovery of electron properties	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	In Part 2 of the Activity Object, students learn about the conclusions used in the development of modern atomic theory, including Thomson's discovery of electron properties, by watching an animation of Thomson's model.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
354	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(iv) understand the conclusions used in the development of modern atomic theory, including Thomson's discovery of electron properties	TX2_US4201A17	Millikan's Oil Drop Experiment (TX2_US4201A17)	The Animation explains the conclusions used in the development of modern atomic theory, including Thomson's discovery of electron properties.	
355	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(v) understand the experimental design used in the development of modern atomic theory, including Rutherford's nuclear atom	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	In Part 3 of the Activity Object, students learn about the experimental design used in the development of modern atomic theory, including Rutherford's nuclear atom, by performing his experiment and watching Animations on the conclusion.	Q1 of the Assessment in the Activity Object asks students about the experimental design used in the development of modern atomic theory, including Rutherford's nuclear atom.
356	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(v) understand the experimental design used in the development of modern atomic theory, including Rutherford's nuclear atom	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	In the Activity Sheet, students learn about the experimental design used in the development of modern atomic theory, including Rutherford's nuclear atom, by drawing and labeling his experiment.	
357	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(v) understand the experimental design used in the development of modern atomic theory, including Rutherford's nuclear atom	TX2_US4201A23	History of Atomic Models (TX2_US4201A23)	In the Animation, students learn about the experimental design used in the development of modern atomic theory, including Rutherford's nuclear atom.	In the Question-Answer Sheet, students are asked questions to assess their understanding of the experimental design used in the development of modern atomic theory, including Rutherford's nuclear atom.
358	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(vi) understand the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	In Part 3 of the Activity Object, students learn about the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom, by performing experiments, watching animations, and seeing the results.	Q5 and Q6 of the Assessment of the Activity Object ask students about the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom.
359	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(vi) understand the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)		Q2 of the Activity Sheet assesses student understanding of the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom, by asking them to explain the results of the experiment.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
360	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(vi) understand the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom	TX2_US4201A15	Discovery of Protons (TX2_US4201A15)	The Animation explains the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom.	
361	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(vi) understand the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom	TX2_US4201A14	Discovery of Neutrons (TX2_US4201A14)	The Animation explains the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom.	In the Question-Answer Sheet, students are asked questions to assess their understanding of the conclusions used in the development of modern atomic theory, including Rutherford's nuclear atom.
362	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(vii) understand the experimental design used in the development of modern atomic theory, including Bohr's nuclear atom	TX2_US4201A04	Bohr's Atomic Model (TX2_US4201A04)	The animation teaches students about the experimental design used in the development of modern atomic theory, including Bohr's nuclear atom.	Q1 and Q3 of the Enrichment Sheet ask students about the experimental design used in the development of modern atomic theory, including Bohr's nuclear atom.
363	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(vii) understand the experimental design used in the development of modern atomic theory, including Bohr's nuclear atom	TX2_US4201A08	Discrete Spectrum of a Hydrogen Atom and Bohr's Atomic Model (TX2_US4201A08)	The animation teaches students about the experimental design used in the development of modern atomic theory, including Bohr's nuclear atom.	
364	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(vii) understand the experimental design used in the development of modern atomic theory, including Bohr's nuclear atom	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	In Part 5 of the Activity Object, students learn about the experimental design used in the development of modern atomic theory, including Bohr's nuclear atom.	
365	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(viii) understand the conclusions used in the development of modern atomic theory, including Bohr's nuclear atom	TX2_US4201A04	Bohr's Atomic Model (TX2_US4201A04)	The Animation teaches students about the conclusions used in the development of modern atomic theory, including Bohr's nuclear atom.	Q2 of the Enrichment Sheet asks students about the conclusions used in the development of modern atomic theory, including Bohr's nuclear atom.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
366	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(viii) understand the conclusions used in the development of modern atomic theory, including Bohr's nuclear atom	TX2_US4201A08	Discrete Spectrum of a Hydrogen Atom and Bohr's Atomic Model (TX2_US4201A08)	The Animation teaches students about the conclusions used in the development of modern atomic theory, including Bohr's nuclear atom.	The Enrichment sheet asks students about their understanding of Bohr's observations and conclusions about the structure of the atom.
367	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(A) understand the experimental design and conclusions used in the development of modern atomic theory, including Dalton's Postulates, Thomson's discovery of electron properties, Rutherford's nuclear atom, and Bohr's nuclear atom	(viii) understand the conclusions used in the development of modern atomic theory, including Bohr's nuclear atom	TX2_US420105CD	History of the Atomic Model: From Rutherford to Bohr (TX2_US420105CD)	In Part 5 of the Activity Object, students learn about the conclusions used in the development of modern atomic theory, including Bohr's nuclear atom.	In the Activity Sheet, students are assessed on the conclusions used in the development of modern atomic theory, including Bohr's nuclear atom. Students are asked to draw a picture of the model.
368	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(B) understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light	(i) understand the electromagnetic spectrum	TX2_US420106CD	Electromagnetic Spectrum (TX2_US420106CD)	In Parts 2 and 3 of the Activity Object, the electromagnetic spectrum is explained to the students.	Q3 of the "Learning Journal" section of the Activity Sheet, as well as Q3-Q4-Q6-Q8 of the Assessment in the Activity Object, assess student understanding of the electromagnetic spectrum.
369	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(B) understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light	(i) understand the electromagnetic spectrum	TX2_US4201A20	The Wave Nature of Light (TX2_US4201A20)	The Animation teaches the mathematical relationships between energy, frequency, and wavelength of light, through the wave nature of light.	Q2 of the Question-Answer Sheet tests student understanding of the electromagnetic spectrum.
370	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(B) understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light	(i) understand the electromagnetic spectrum	TX2_US4201A02	Wave Properties of Electromagnetic Radiation (TX2_US4201A02)	The Animation allows teaches students about the electromagnetic spectrum through the wave properties of electromagnetic radiation.	
371	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(B) understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light	(i) understand the electromagnetic spectrum	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	In the Activity Object, students learn about the electromagnetic spectrum through the photoelectric effect.	
372	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(B) understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light	(i) understand the electromagnetic spectrum	TX2_US4201A11	Photoelectricity and the Particle Nature of Light (TX2_US4201A11)	The Animation teaches students about the electromagnetic spectrum through photo-electricity and the particle nature of light.	
373	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(B) understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light	(ii) understand the mathematical relationships between energy, frequency, and wavelength of light	TX2_US4201A16	Energy, Frequency, Wavelength (TX2_US4201A16)	The Animation teaches students about the mathematical relationships between energy, frequency, and wavelength of light.	Q1-Q3-Q4 in the "After the Animation" section of Question-Answer Sheet 1, as well as Q1-Q2-Q3 in the "After the Animation" section of Question-Answer Sheet 2, test student understanding of the mathematical relationships between energy, frequency, and wavelength of light.
374	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(B) understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light	(ii) understand the mathematical relationships between energy, frequency, and wavelength of light	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	Part 4 of the Activity Object teaches students about the mathematical relationships between energy, frequency, and wavelength of light through an interaction.	

AC Correlation with TEKS 2014 Chemistry

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
375	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(B) understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light	(ii) understand the mathematical relationships between energy, frequency, and wavelength of light	TX2_US4201A02	Wave Properties of Electromagnetic Radiation (TX2_US4201A02)	The Animation teaches students about the mathematical relationships between energy, frequency, and wavelength of light, through wave properties of electromagnetic radiation.	
376	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(B) understand the electromagnetic spectrum and the mathematical relationships between energy, frequency, and wavelength of light	(ii) understand the mathematical relationships between energy, frequency, and wavelength of light	TX2_US4201A20	The Wave Nature of Light (TX2_US4201A20)	The Animation teaches students about the mathematical relationships between energy, frequency, and wavelength of light, through the wave nature of light.	
377	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(i) calculate the wavelength of light using the speed of light	TX2_US4201A16	Frequency, Wavelength, And Energy (TX2_US4201A16)	The Animation calculates the wavelength of light using the speed of light.	Q1 in the "After the Animation" section of Question-Answer Sheet 2 asks students to calculate the wavelength of light using the speed of light.
378	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(i) calculate the wavelength of light using the speed of light	TX2_US4201A16	Frequency, Wavelength, And Energy (TX2_US4201A16)	The Enrichment Sheet teaches how to calculate the wavelength of light using the speed of light.	In the Enrichment Sheet, students calculate the wavelength of light using the speed of light.
379	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(i) calculate the wavelength of light using the speed of light	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	In Part 2 of the Activity Object, students learn how to calculate the wavelength of light using the speed of light.	
380	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(i) calculate the wavelength of light using the speed of light	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	In Part 4 of the Activity Object, students learn how to calculate the wavelength of light using the speed of light.	
381	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(i) calculate the wavelength of light using the speed of light	TX2_US4201A20	The Wave Nature of Light (TX2_US4201A20)	The Animation teaches students how to calculate the wavelength of light using the speed of light.	
382	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(i) calculate the wavelength of light using the speed of light	TX2_US4201A11	Photoelectricity and the Particle Nature of Light (TX2_US4201A11)	The Animation teaches students how to calculate the wavelength of light using the speed of light.	
383	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(ii) calculate the frequency of light using the speed of light	TX2_US4201A16	Frequency, Wavelength, And Energy (TX2_US4201A16)	The Animation calculates the frequency of light using the speed of light.	Q2 of the "After the Animation" section of Question-Answer Sheet 2 asks students to calculate the frequency of light using the speed of light.
384	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(ii) calculate the frequency of light using the speed of light	TX2_US4201A16	Frequency, Wavelength, And Energy (TX2_US4201A16)	The Enrichment Sheet teaches how to calculate the frequency of light using the speed of light	In the Enrichment Sheet, students calculate the frequency of light using the speed of light.
385	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(ii) calculate the frequency of light using the speed of light	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	In Part 2 of the Activity Object, students learn how to calculate the wavelength of light using the speed of light.	
386	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(ii) calculate the frequency of light using the speed of light	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	In Part 3 of the Activity Object, students learn how to calculate the wavelength of light using the speed of light.	
387	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(ii) calculate the frequency of light using the speed of light	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	In Part 4 of the Activity Object, students learn how to calculate the wavelength of light using the speed of light.	
388	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(iii) calculate the energy of light using Planck's constant	TX2_US4201A19	Particle Nature of Light (TX2_US4201A19)	The Animation explains how to calculate the energy of light using Planck's constant.	Q3 in the "After the Animation" section of Question-Answer Sheet 2 asks students to calculate the energy of light using Planck's constant.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
389	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(iii) calculate the energy of light using Planck's constant	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	Part 3 of the Activity Object explains how to calculate the energy of light using Planck's constant.	
390	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(iii) calculate the energy of light using Planck's constant	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	In the Activity Object, students are shown how to calculate the energy of light using Planck's constant.	
391	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(iii) calculate the energy of light using Planck's constant	TX2_US4201A16	Frequency, Wavelength, And Energy (TX2_US4201A16)	The Animation shows students how to calculate the energy of light using Planck's constant.	
392	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(iii) calculate the energy of light using Planck's constant	TX2_US4201A16	Frequency, Wavelength, And Energy (TX2_US4201A16)	The Enrichment Sheet teaches how to calculate the energy of light using Planck's constant.	In the Enrichment Sheet, students calculate the energy of light using Planck's constant.
393	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(iv) calculate the energy of light using Planck's constant and the speed of light	TX2_US4201A16	Frequency, Wavelength, And Energy (TX2_US4201A16)	The Animation shows students how to calculate the energy of light using Planck's constant and the speed of light.	Q3 in the "After the Animation" section of the Question-Answer Sheet 2 asks students to calculate the energy of light using Planck's constant.
394	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(iv) calculate the energy of light using Planck's constant and the speed of light	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	Part 3 of the Activity Object explains how to calculate the energy of light using Planck's constant and the speed of light.	
395	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(iv) calculate the energy of light using Planck's constant and the speed of light	TX2_US420103DM	Photoelectric Effect (TX2_US420103DM)	In the Activity Object, students calculate the energy of light using Planck's constant and the speed of light.	
396	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(C) calculate the wavelength, frequency, and energy of light using Planck's constant and the speed of light	(iv) calculate the energy of light using Planck's constant and the speed of light	TX2_US4201A19	Particle Nature of Light (TX2_US4201A19)	The Animation explains how to calculate the energy of light using Planck's constant and the speed of light.	
397	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(D) use isotopic composition to calculate average atomic mass of an element		TX2_US420201CD	Calculating Atomic Mass (TX2_US420201CD)	In Part 1 of the Activity Object, students are shown how to use the isotopic composition of chlorine to calculate average atomic mass.	Q4 of the Assessment in the Activity Object asks students to use isotopic composition to calculate average atomic mass of an element.
398	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(D) use isotopic composition to calculate average atomic mass of an element		TX2_US420201CD	Calculating Atomic Mass (TX2_US420201CD)	In Part 2 of the Activity Object, using a mass spectrometry technique, students look at isotopic composition to average the atomic mass of various elements.	
399	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(D) use isotopic composition to calculate average atomic mass of an element		TX2_US420201CD	Calculating Atomic Mass (TX2_US420201CD)	In Part 3 of the Activity Object, students use the isotopic composition of hydrogen to calculate average atomic mass.	Q1 of Enrichment Sheet 3 asks students to use isotopic composition to calculate average atomic mass of an element
400	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(D) use isotopic composition to calculate average atomic mass of an element			Calculating Atomic Mass (TX2_US420201CD)		Enrichment Sheet 1 asks students to use isotopic composition to calculate average atomic mass of an element
401	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(D) use isotopic composition to calculate average atomic mass of an element			Calculating Atomic Mass (TX2_US420201CD)		Enrichment Sheet 2 asks students to use isotopic composition to calculate average atomic mass of an element
402	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(E) express the arrangement of electrons in atoms through electron configurations and Lewis valence electron dot structures	(i) express the arrangement of electrons in atoms through electron configurations	TX2_US420101MS	Electron Configuration (TX2_US420101MS)	In Part 1 of the Activity Object, students learn to express the arrangement of electrons in atoms through electron configurations, through an orbital energy diagram.	In the Independent Practice Sheet, the questions in the "Practice" and "Finding the Error" sections ask students to express the arrangement of electrons in atoms through electron configurations.
403	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(E) express the arrangement of electrons in atoms through electron configurations and Lewis valence electron dot structures	(i) express the arrangement of electrons in atoms through electron configurations	TX2_US420101MS	Electron Configuration (TX2_US420101MS)	In Part 2 of the Activity Object, students learn to express the arrangement of electrons in atoms through electron configurations, through the Aufbau principle, Pauli exclusion principle, and Hund's rule.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
404	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(E) express the arrangement of electrons in atoms through electron configurations and Lewis valence electron dot structures	(i) express the arrangement of electrons in atoms through electron configurations	TX2_US420101MS	Electron Configuration (TX2_US420101MS)	In Part 3 of the Activity Object, students learn to express the arrangement of electrons in atoms through electron configurations, by solving two puzzles and by completing the electron configuration of an atom or ion printed on a piece of the puzzle.	In the Activity Sheet, students express the arrangement of electrons in atoms through electron configurations in various questions.
405	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(E) express the arrangement of electrons in atoms through electron configurations and Lewis valence electron dot structures	(i) express the arrangement of electrons in atoms through electron configurations	TX2_US4201A18	Modern Atomic Model: Orbitals and Quantum Numbers (TX2_US4201A18)	The Animation expresses the arrangement of electrons in atoms through electron configurations.	
406	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(E) express the arrangement of electrons in atoms through electron configurations and Lewis valence electron dot structures	(i) express the arrangement of electrons in atoms through electron configurations	TX2_US420107UN	Modern Atomic Model (TX2_US420107UN)	The 3D model shows the arrengement of electrons in atoms	
407	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(E) express the arrangement of electrons in atoms through electron configurations and Lewis valence electron dot structures	(ii) express the arrangement of electrons in atoms through Lewis valence electron dot structures	TX2_US430103CD	Lewis Dot Structure (TX2_US430103CD)	In Part 2 of the Activity Object, students learn to express the arrangement of electrons in atoms through Lewis valence electron dot structures.	Q3 in the "Learner Journal" section of the Activity Sheet, as well as Q3 of the "Reflections" section of the Activity Sheet, ask students to express the arrangement of electrons in atoms through Lewis valence electron dot structures.
408	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(E) express the arrangement of electrons in atoms through electron configurations and Lewis valence electron dot structures	(ii) express the arrangement of electrons in atoms through Lewis valence electron dot structures	TX2_US430103CD	Lewis Dot Structure (TX2_US430103CD)	In Part 3 of the Activity Object, students learn how to express the arrangement of electrons in atoms through Lewis valence electron dot structures.	
409	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(E) express the arrangement of electrons in atoms through electron configurations and Lewis valence electron dot structures	(ii) express the arrangement of electrons in atoms through Lewis valence electron dot structures	TX2_US430103CD	Lewis Dot Structure (TX2_US430103CD)	In Part 4 of the Activity Object, students learn how to express the arrangement of electrons in atoms through Lewis valence electron dot structures.	In the Activity Sheet, students are required to express the arrangement of electrons in atoms through Lewis valence electron dot structures.
410	(6) Science concepts. The student knows and understands the historical development of atomic theory. The student is expected to:	(E) express the arrangement of electrons in atoms through electron configurations and Lewis valence electron dot structures	(ii) express the arrangement of electrons in atoms through Lewis valence electron dot structures	TX2_US4203A06	Molecular Polarity (TX2_US4203A06)	The Animation teaches students about the arrangement of electrons in atoms through Lewis valence electron dot structures.	
411	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(A) name ionic compounds containing main group or transition metals, covalent compounds, acids, and bases, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	(i) name ionic compounds containing main group or transition metals, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	TX2_US420302CD	Chemical Formulas and Naming Ionic Compounds (TX2_US420302CD)	The Activity Object shows students how to name ionic compounds containing main group or transition metals, using the International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.	Q1-Q2-Q6-Q7 of the Assessment in the Activity Object, as well as Q4 of the Activity Sheet, ask students to name ionic compounds containing main group or transition metals, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.
412	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(A) name ionic compounds containing main group or transition metals, covalent compounds, acids, and bases, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	(i) name ionic compounds containing main group or transition metals, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	TX2_US420302CD	Chemical Formulas and Naming Ionic Compounds (TX2_US420302CD)		In the Activity Sheet, students are asked to name ionic compounds containing main group or transition metals, using the International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.
413	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(A) name ionic compounds containing main group or transition metals, covalent compounds, acids, and bases, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	(ii) name covalent compounds using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	TX2_US420303CD	Chemical Formulas and Naming Covalent Compounds (TX2_US420303CD)	The Activity Object shows students how to name covalent compounds using the International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.	Q4-Q6-Q9-Q10 of the Assessment in the Activity Object ask students to name covalent compounds using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
414	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(A) name ionic compounds containing main group or transition metals, covalent compounds, acids, and bases, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	(ii) name covalent compounds using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	TX2_US420303CD	Chemical Formulas and Naming Covalent Compounds (TX2_US420303CD)		In the Activity Sheet, students are asked to name covalent compounds using the International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.
415	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(A) name ionic compounds containing main group or transition metals, covalent compounds, acids, and bases, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	(iii) name acids using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)	The Animation shows students how to name various acids using the International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.	Q1-Q2-Q3 in the "After the Animation" section of the Question-Answer Sheet ask students to name acids using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.
416	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(A) name ionic compounds containing main group or transition metals, covalent compounds, acids, and bases, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	(iii) name acids using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)		In the Question-Answer Sheet, students are asked to name acids using the International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.
417	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(A) name ionic compounds containing main group or transition metals, covalent compounds, acids, and bases, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	(iv) name bases using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)	The Animation shows students how to name various bases using the International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.	Q4 in the "After the Animation" section of the Question-Answer Sheet asks students to name bases using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.
418	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(A) name ionic compounds containing main group or transition metals, covalent compounds, acids, and bases, using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	(iv) name bases using International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)		In the Question-Answer Sheet, students are asked to name bases using the International Union of Pure and Applied Chemistry (IUPAC) nomenclature rules.
419	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(i) write the chemical formulas of common polyatomic ions	TX2_US420302CD	Chemical Formulas and Naming Ionic Compounds (TX2_US420302CD)	In Part 4 of the Activity Object, students are shown how to write the chemical formulas of multiple common polyatomic ions.	Q3 of the Assessment in the Activity Object asks students to write the chemical formulas of common polyatomic ions.
420	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(i) write the chemical formulas of common polyatomic ions	TX2_US420302CD	Chemical Formulas and Naming Ionic Compounds (TX2_US420302CD)		In the Activity Sheet, students are required to write the chemical formulas of common polyatomic ions.
421	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(i) write the chemical formulas of common polyatomic ions	TX2_US420302CD	Chemical Formulas and Naming Ionic Compounds (TX2_US420302CD)		In the Enrichment Sheet, students are required to write the chemical formulas of common polyatomic ions.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
422	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(i) write the chemical formulas of common polyatomic ions	TX2_US420302CD	Chemical Formulas and Naming Ionic Compounds (TX2_US420302CD)	In Part 5 of the Activity Object, students are required to determine the formula of the given compounds.	
423	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(ii) write the chemical formulas of common ionic compounds containing main group or transition metals	TX2_US420302CD	Chemical Formulas and Naming Ionic Compounds (TX2_US420302CD)	In the Activity Object, students write the chemical formulas of common ionic compounds containing main group or transition metals.	Q4-Q5-Q8 of the Assessment in the Activity Object, as well as Q5 in the "Learner Journal" section of the Activity Sheet, ask students to write the chemical formulas of common ionic compounds containing main group or transition metals.
424	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(ii) write the chemical formulas of common ionic compounds containing main group or transition metals	TX2_US420302CD	Chemical Formulas and Naming Ionic Compounds (TX2_US420302CD)		In the Activity Sheet, students must write the chemical formulas of common ionic compounds containing main group or transition metals.
425	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(ii) write the chemical formulas of common ionic compounds containing main group or transition metals	TX2_US420302CD	Chemical Formulas and Naming Ionic Compounds (TX2_US420302CD)		In the Enrichment Sheet, students are required to write the chemical formulas of common ionic compounds containing main group or transition metals.
426	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(iii) write the chemical formulas of common covalent compounds	TX2_US420303CD	Chemical Formulas and Naming Covalent Compounds (TX2_US420303CD)	In Part 4 of the Activity Object, students are shown how to write the chemical formulas of common covalent compounds.	Q5 and Q8 of the Assessment in the Activity Object ask students to write the chemical formulas of common covalent compounds.
427	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(iii) write the chemical formulas of common covalent compounds	TX2_US420303CD	Chemical Formulas and Naming Covalent Compounds (TX2_US420303CD)	In Part 2 of the Activity Object, students are shown how to write the chemical formulas of common covalent compounds	In the Enrichment Sheet, students are required to write the chemical formulas of common covalent compounds.
428	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(iv) write the chemical formulas of common acids	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)	The Animation explains how to write the chemical formula of common acids, while explaining nomenclature.	Q1 in Enrichment Sheet 1, as well as Q1 in Enrichment Sheet 2, ask students to write the chemical formulas of common acids.
429	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(iv) write the chemical formulas of common acids	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)		In the Question-Answer Sheet, students must write the chemical formulas of common acids.
430	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(iv) write the chemical formulas of common acids	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)		Various other questions in the Enrichment Sheet ask students to write the chemical formulas of common acids.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
431	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(v) write the chemical formulas of common bases	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)	The Animation explains how to write the chemical formula of common bases, while explaining nomenclature.	Q1 in Enrichment Sheet 1, as well as Q2 in Enrichment Sheet 2, ask students to write the chemical formulas of common bases.
432	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(v) write the chemical formulas of common bases	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)		In the Question-Answer Sheet, students write the chemical formulas of common bases.
433	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(B) write the chemical formulas of common polyatomic ions, ionic compounds containing main group or transition metals, covalent compounds, acids, and bases	(v) write the chemical formulas of common bases	TX2_US4601A05	Naming Acids and Bases (TX2_US4601A05)		Various other questions in the Enrichment Sheet ask students to write the chemical formulas of common bases.
434	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(C) construct electron dot formulas to illustrate ionic and covalent bonds	(i) construct electron dot formulas to illustrate ionic bonds	TX2_US430103CD	Lewis Dot Structure (TX2_US430103CD)	In Part 2 of the Activity Object, students learn to construct electron dot formulas to illustrate ionic bonds through the Lewis Dot Structure.	Q7 of the Assessment in the Activity Object, as well as Q3 in the "Learner Journal" section of the Activity Sheet, ask students to construct electron dot formulas to illustrate ionic bonds.
435	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(C) construct electron dot formulas to illustrate ionic and covalent bonds	(ii) construct electron dot formulas to illustrate covalent bonds	TX2_US430103CD	Lewis Dot Structure (TX2_US430103CD)	In Part 2 of the Activity Object, students learn how to construct electron dot formulas to illustrate covalent bonds through the Lewis Dot Structure.	Q4 of the Assessment in the Activity Object, as well as Q3 of the "Learner Journal" section of the Activity Sheet, ask students to construct electron dot formulas to illustrate covalent bonds.
436	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(D) describe the nature of metallic bonding and apply the theory to explain metallic properties such as thermal and electrical conductivity, malleability, and ductility	(i) describe the nature of metallic bonding	TX2_US4301A03	Formation of Metallic Bonds (TX2_US4301A03)	The Animation explains the nature of metallic bonding.	Q1 of the "After the Animation" section of the Question-Answer Sheet asks students to describe the nature of metallic bonding.
437	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(D) describe the nature of metallic bonding and apply the theory to explain metallic properties such as thermal and electrical conductivity, malleability, and ductility	(i) describe the nature of metallic bonding	TX2_US4301A03	Formation of Metallic Bonds (TX2_US4301A03)	The Enrichment Sheet describes the nature of metallic bonds.	
438	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(D) describe the nature of metallic bonding and apply the theory to explain metallic properties such as thermal and electrical conductivity, malleability, and ductility	(ii) apply the theory [of metallic bonding] to explain metallic properties	TX2_US4301A03	Formation of Metallic Bonds (TX2_US4301A03)	The Animation teaches students how properties of metallic bonds explain properties of metals.	Q2 and Q3 of the "After the Animation" section in the Question-Answer Sheet, as well as Q1 and Q2 of the Enrichment Sheet, ask students to apply the theory of metallic bonding to explain metallic properties.
439	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(E) predict molecular structure for molecules with linear, trigonal planar, or tetrahedral electron pair geometries using Valence Shell Electron Pair Repulsion (VSEPR) theory		TX2_US4203A08	Molecular Geometry (TX2_US4203A08)	In the Enrichment Sheet, students learn about molecular structure for molecules with linear, trigonal planar, or tetrahedral electron pair geometries using Valence Shell Electron Pair Repulsion (VSEPR) theory.	Q1 and Q2 of Enrichment Sheet 1, as well as Q1-Q2-Q3 of Enrichment Sheet 2, ask students to predict molecular structure for molecules with linear, trigonal planar, or tetrahedral electron pair geometries using Valence Shell Electron Pair Repulsion (VSEPR) theory.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
440	(7) Science concepts. The student knows how atoms form ionic, metallic, and covalent bonds. The student is expected to:	(E) predict molecular structure for molecules with linear, trigonal planar, or tetrahedral electron pair geometries using Valence Shell Electron Pair Repulsion (VSEPR) theory		TX2_US4203A08	Molecular Geometry (TX2_US4203A08)	The Animation explains how molecular structure for molecules with linear, trigonal planar, or tetrahedral electron pair geometries using Valence Shell Electron Pair Repulsion (VSEPR) theory can be predicted.	In the Question-Answer Sheet, students are asked questions in which they must predict molecular structure for molecules with linear, trigonal planar, or tetrahedral electron pair geometries using Valence Shell Electron Pair Repulsion (VSEPR) theory.
441	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(A) define and use the concept of a mole	(i) define the concept of a mole	TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	In Part 3 of the Activity Object, students learn the definition of the concept of a mole.	Q1-Q2-Q8 of the Assessment in the Activity Object ask students to define the concept of a mole.
442	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(A) define and use the concept of a mole	(i) define the concept of a mole	TX2_US480302MS	Calculating Moles By Using the Mass And the Number Of Particles (TX2_US480302MS)	In Part 1 of the Activity Object, the concept of a mole is defined.	
443	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(A) define and use the concept of a mole	(i) define the concept of a mole	TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	In Part 2 of the Activity Object, students are led through an activity in which they determine the mass and number of atoms in a reaction, in order to then define the concept of a mole.	During the Activity Object, student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
444	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(A) define and use the concept of a mole	(i) define the concept of a mole	TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	In the Glossary of the Activity Object, the concept of a mole is defined.	
445	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(A) define and use the concept of a mole	(ii) use the concept of a mole	TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	In Part 2 of the Activity Object, the concept of a mole is used in a reaction between magnesium and sulfur.	Q3-Q4-Q6-Q7-Q9-Q10 of the Assessment in the Activity Object ask students to describe concepts of a mole.
446	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(A) define and use the concept of a mole	(ii) use the concept of a mole	TX2_US480302MS	Calculating Moles By Using the Mass And the Number Of Particles (TX2_US480302MS)	In Part 2 of the Activity Object, the concept of a mole is used to calculate moles by using mass and number of particles.	
447	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(A) define and use the concept of a mole	(ii) use the concept of a mole	TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	In Part 3 of the Activity Object, concepts of a mole is used during an activity, and also in the explanation of the activity.	In the "Learner Journal" section of the Activity Sheet, students are asked to use concepts of a mole to answer questions.
448	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(A) define and use the concept of a mole	(ii) use the concept of a mole	TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	The Enrichment Sheet explains concepts of a mole.	In the Enrichment Sheet, students use the concepts of a mole to answer questions.
449	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(B) use the mole concept to calculate the number of atoms, ions, or molecules in a sample of material		TX2_US480302MS	Calculating Moles By Using the Mass And the Number Of Particles (TX2_US480302MS)	In Part 2 of the Activity Object, mole concepts are used to calculate the number of atoms, ions, or molecules in a sample of sucrose.	Q1-Q3-Q4-Q5-Q6-Q7-Q8-Q9-Q10 of the Assessment in the Activity Object ask students to use concepts of a mole to calculate the number of atoms, ions, or molecules in a sample of material.
450	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(B) use the mole concept to calculate the number of atoms, ions, or molecules in a sample of material		TX2_US480302MS	Calculating Moles By Using the Mass And the Number Of Particles (TX2_US480302MS)	In Part 3 of the Activity Object, the concepts of a mole are used to calculate the number of atoms, ions, or molecules in a reaction of HCl and NaCl.	
451	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(B) use the mole concept to calculate the number of atoms, ions, or molecules in a sample of material		TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	In Part 2 of the Activity Object, the concepts of a mole are used to calculate the number of atoms, ions, or molecules in a reaction of magnesium and sulfur.	
452	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(B) use the mole concept to calculate the number of atoms, ions, or molecules in a sample of material		TX2_US480301CD	The Concept of Moles (TX2_US480301CD)	The Enrichment Sheet explains how to use concepts of a mole to calculate the number of atoms, ions, or molecules in a sample of material	In the Enrichment Sheet, students must use concepts of a mole to calculate the number of atoms, ions, or molecules in a sample of material.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
453	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(i) calculate percent composition	TX2_US4803A03	Percent Composition (TX2_US4803A03)	In the Animation, students learn about, and are shown, how to calculate the percent composition of hydrogen and oxygen.	In the Question-Answer Sheet, students are asked questions that assess their ability to calculate percent composition.
454	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(i) calculate percent composition	TX2_US450204MS	The Concentration of Solutions: Mass Fraction and Mass Percent (TX2_US450204MS)	In Part 3 of the Activity Object, students learn about, and calculate, various mass percentages.	
455	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(i) calculate percent composition	TX2_US450204MS	The Concentration of Solutions: Mass Fraction and Mass Percent (TX2_US450204MS)	In Part 2 of the Activity Object, students calculates mass percentage (percent composition).	
456	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(i) calculate percent composition	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	Enrichment Sheet 1 teaches the calculation of percent composition.	In Enrichment Sheet 1, students are required to calculate percent composition.
457	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(i) calculate percent composition	TX2_US480305CD	Finding Molecular Formula By Using Mole and Molecular Weight (TX2_US480305CD)	The Enrichment Sheet teaches calculation of percent composition.	In the Enrichment Sheet, students are required to calculate percent composition.
458	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(ii) calculate empirical formulas	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In Part 2 of the Activity Object, students learn about, and calculate, empirical formulas.	Q2 and Q3 of Enrichment Sheet 2 assess students' ability to calculate empirical formulas.
459	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(ii) calculate empirical formulas	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	The Enrichment Sheet teaches the calculation of empirical formulas.	In the Enrichment Sheet, students are asked to calculate empirical formulas.
460	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(ii) calculate empirical formulas	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)		In the Activity Sheet, students are asked to calculate empirical formulas.
461	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(ii) calculate empirical formulas	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	Enrichment Sheet 1 teaches students to calculate empirical formulas.	In Enrichment Sheet 1, students are asked to calculate empirical formulas.
462	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(ii) calculate empirical formulas	TX2_US480305CD	Finding Molecular Formula By Using Mole and Molecular Weight (TX2_US480305CD)	The Enrichment Sheet teaches students to calculate empirical formulas.	In the Enrichment Sheet, students are asked to calculate empirical formulas.
463	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(iii) calculate molecular formulas	TX2_US480305CD	Finding Molecular Formula by Using Mole and Molecular Weight (TX2_US480305CD)	In Part 2 of the Activity Object, students learn about, and calculate molecular formulas by completing the investigation.	Q3 and Q7 of the Assessment in the Activity Object ask students to calculate molecular formulas.
464	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(iii) calculate molecular formulas	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In Part 2 of the Activity Object, students learn about, and calculate, the molecular formula for unknown gases in order to complete the investigation.	
465	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(iii) calculate molecular formulas	TX2_US480303CD	Law of Multiple Proportions (TX2_US480303CD)	In Part 3 of the Activity Object, students learn about, and calculate molecular formulas.	
466	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(iii) calculate molecular formulas	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	Enrichment Sheet 1 teaches students how to calculate molecular formulas	In Enrichment Sheet 1, students are asked to calculate molecular formulas.
467	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(C) calculate percent composition and empirical and molecular formulas	(iii) calculate molecular formulas	TX2_US480305CD	Finding Molecular Formula By Using Mole and Molecular Weight (TX2_US480305CD)	The Enrichment Sheet teaches students how to calculate molecular formulas	In the Enrichment Sheet, students are asked to calculate molecular formula.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
468	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(D) use the law of conservation of mass to write and balance chemical equations	(i) use the law of conservation of mass to write chemical equations	TX2_US480104CD	Writing and Balancing Chemical Equations (TX2_US480104CD)	In the Activity Object, students use the law of conservation of mass to write chemical equations.	During the Activity Object, students use the law of conservation of mass to write chemical equations. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
469	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(D) use the law of conservation of mass to write and balance chemical equations	(i) use the law of conservation of mass to write chemical equations	TX2_US480104CD	Writing and Balancing Chemical Equations (TX2_US480104CD)		In the Activity Sheet, students are asked a question that requires them to use the law of conservation of mass to write chemical equations
470	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(D) use the law of conservation of mass to write and balance chemical equations	(i) use the law of conservation of mass to write chemical equations	TX2_US480104CD	Writing and Balancing Chemical Equations (TX2_US480104CD)		In the Enrichment Sheet, students must use the law of conservation of mass to write chemical equations.
471	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(D) use the law of conservation of mass to write and balance chemical equations	(i) use the law of conservation of mass to write chemical equations	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In the Activity Object, students use the law of conservation of mass to write chemical equations.	During the Activity Object, students use the law of conservation of mass to write chemical equations. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
472	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(D) use the law of conservation of mass to write and balance chemical equations	(i) use the law of conservation of mass to write chemical equations	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)		In the Enrichment Sheet, students must use the law of conservation of mass to write chemical equations.
473	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(D) use the law of conservation of mass to write and balance chemical equations	(ii) use the law of conservation of mass to balance chemical equations	TX2_US480104CD	Writing and Balancing Chemical Equations (TX2_US480104CD)	In the Activity Object, students use the law of conservation of mass to balance chemical equations.	Q5-Q8-Q9 of the Assessment in the Activity Object ask students to use the law of conservation of mass to balance chemical equations.
474	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products	TX2_US4803A04	Stoichiometric Calculations (TX2_US4803A04)	The Animation performs stoichiometric calculations, including calculation of limiting reagents (reactants).	Q2 in the Enrichment Sheet asks students to perform stoichiometric calculations, including determination of mass relationships between reactants and products.
475	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	In Part 2 of the Activity Object, stoichiometric calculations are taught and performed, including determination of mass relationships between reactants and products such as ammonia.	Q8 in the Assessment asks students to perform stoichiometric calculations, including determination of mass relationships between reactants and products.
476	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	In Part 3 of the Activity Object, students learn about and perform stoichiometric calculations, including determination of mass relationships between reactants and products such as methane gas.	During the Activity Object, students perform stoichiometric calculations, including determination of mass relationships between reactants and products. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
477	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	Enrichment Sheet 2 teaches students to perform stoichiometric calculations to determine mass relationships.	In Enrichment Sheet 2, students must perform stoichiometric calculations to determine mass relationships.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
478	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 2 of the Activity Object, students perform stoichiometric calculations, including determination of mass relationships between reactants and products.	
479	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 3 of the Activity Object, students learn about and make stoichiometric calculations, including determination of mass relationships between reactants and products.	During the Activity Object, students perform stoichiometric calculations, including determination of mass relationships between reactants and products. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
480	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(ii) perform stoichiometric calculations, including calculation of limiting reagents	TX2_US4803A04	Stoichiometric Calculations (TX2_US4803A04)	The Animation shows students how to perform stoichiometric calculations, including calculation of limiting reagents (reactants).	Q2 in the Enrichment Sheet asks students to perform stoichiometric calculations, including calculation of limiting reagents (reactants).
481	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(ii) perform stoichiometric calculations, including calculation of limiting reagents	TX2_US4803A04	Stoichiometric Calculations (TX2_US4803A04)	In the Enrichment Sheet, students learn to perform stoichiometric calculations, including calculation of limiting reagents.	In the Enrichment Sheet, students perform stoichiometric calculations, including calculation of limiting reagents.
482	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(ii) perform stoichiometric calculations, including calculation of limiting reagents	TX2_US4803A04	Stoichiometric Calculations (TX2_US4803A04)		In the Question-Answer Sheet, students are asked questions in order to perform stoichiometric calculations, including calculation of limiting reagents.
483	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(iii) perform stoichiometric calculations, including percent yield	TX2_US4803A01	Calculations with Yield (TX2_US4803A01)	In the Animation, stoichiometric calculations with percent yield are explained.	Q4 in the " After the Animation" section of the Activity Sheet asks students to perform stoichiometric calculations, including percent yield.
484	(8) Science concepts. The student can quantify the changes that occur during chemical reactions. The student is expected to:	(E) perform stoichiometric calculations, including determination of mass relationships between reactants and products, calculation of limiting reagents, and percent yield	(iii) perform stoichiometric calculations, including percent yield	TX2_US4803A01	Calculations with Yield (TX2_US4803A01)	The Enrichment Sheet teaches students how to perform stoichiometric calculations, including percent yield.	In the Enrichment Sheet, students are required to perform stoichiometric calculations, including percent yield.
485	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(i) describe the relations between volume [and] pressure for an ideal gas as described by Boyle's law	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In the Activity Object, students learn about the relationships between volume and pressure for an ideal gas as described by Boyle's law.	During the Activity Object, students are asked to provide responses regarding the relationships between volume and pressure for an ideal gas as described by Boyle's law. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
486	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(i) describe the relations between volume [and] pressure for an ideal gas as described by Boyle's law	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)		Q1-Q2-Q5 of the Assessment in the Activity Object ask students to describe the relationships between volume and pressure for an ideal gas as described by Boyle's law.
487	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(ii) describe the relations between volume [and] temperature for an ideal gas, as described by Charles' law	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)	The Activity Object describes the relationships between volume and temperature for an ideal gas, as described by Charles' law.	During the Activity Object, students are asked to provide responses regarding the relationships between volume and temperature for an ideal gas, as described by Charles' law. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
488	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(ii) describe the relations between volume [and] temperature for an ideal gas, as described by Charles' law	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)		Q1 and Q2 of the Assessment in the Activity Object, as well as Q3-Q4-Q5 in the "Learner Journal" section of the Activity Sheet, ask students to describe the relationships between volume and temperature for an ideal gas, as described by Charles' law.
489	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(iii) describe the relations between volume [and] number of moles for an ideal gas, as described by Avogadro's law	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)	In the Activity Object, students learn about the relationships between volume and number of moles for an ideal gas, as described by Avogadro's law.	During the Activity Object, students are asked to provide responses regarding the relationships between volume and number of moles for an ideal gas, as described by Avogadro's law. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
490	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(iii) describe the relations between volume [and] number of moles for an ideal gas, as described by Avogadro's law	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)		Q2-Q3-Q4 of the Assessment in the Activity Object, as well as Q3 in the "Learner Journal" section of the Activity Sheet, ask students to describe the relationships between volume and number of moles for an ideal gas, as described by Avogadro's law.
491	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(iv) describe the Dalton's law of partial pressure	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In the Activity Object, students learn about Dalton's law of partial pressure.	During the Activity Object, students are asked to provide responses regarding Dalton's law of partial pressure. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
492	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(iv) describe the Dalton's law of partial pressure	TX2_US440206XP	Partial Pressure (TX2_US440206XP)		Q1 and Q2 of the Assessment in the Activity Object, as well as Q3 and Q4 of the "Learner Journal" section of the Activity Sheet, ask students to describe Dalton's law of partial pressure.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
493	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(v) describe the relations between volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law	TX2_US440207CD	Ideal Gas Law (TX2_US440207CD)	In the Activity Object, students learn about the relationships between volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law.	During the Activity Object, students are asked to provide responses with regard to the relationships between volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law . Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
494	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(v) describe the relations between volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law	TX2_US440207CD	Ideal Gas Law (TX2_US440207CD)		Q2 and Q3 of the Assessment in the Activity Object, as well as Q1 of the "Reflections" section of the Activity Sheet, ask students to describe the relationships between volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law.
495	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(v) describe the relations between volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law	TX2_US4402A06	Pressure Temperature Relation (TX2_US4402A06)	The Animation describes the relationships between volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas laws.	
496	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(v) describe the relations between volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law	TX2_US4402A04	Combined Gas Law (TX2_US4402A04)	The Animation describe the relationships between volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas laws.	
497	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(vi) calculate volume [and] pressure for an ideal gas, as described by Boyle's law	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)	In Part 2 of the Activity Object, students learn how to calculate volume and pressure for an ideal gas, as described by Boyle's law.	During the Activity Object, students are asked to provide responses with regard to the volume and pressure for an ideal gas, as described by Boyle's law. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
498	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(vi) calculate volume [and] pressure for an ideal gas, as described by Boyle's law	TX2_US440203XP	The Pressure-Volume Relationship of Gases: Boyle's Law (TX2_US440203XP)		Q6 and Q7 of the Assessment in the Activity Object, as well as Q1-Q4-Q5 in the "Reflections" section of the Activity Sheet, ask students to calculate volume and pressure for an ideal gas, as described by Boyle's law
499	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(vii) calculate volume [and] temperature for an ideal gas, as described by Charles' law	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)	In Part 2 of the Activity Object, students learn how to calculate volume and temperature for an ideal gas, as described by Charles' law.	During the Activity Object, students are asked to provide responses with regard to the volume and temperature for an ideal gas, as described by Charles' law. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
500	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(vii) calculate volume [and] temperature for an ideal gas, as described by Charles' law	TX2_US440204XP	The Volume-Temperature Relationship of Gases: Charles' Law (TX2_US440204XP)		Q3-Q4-Q6-Q7-Q8-Q9-Q10 of the Assessment in the Activity Object, as well as Q2-Q3-Q4 of the "Reflections" section of the Activity Sheet, ask students to calculate volume and temperature for an ideal gas, as described by Charles' law.
501	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(viii) calculate volume [and] number of moles for an ideal gas, as described by Avogadro's law	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)	In Part 2 of the Activity Object, students learn how to calculate volume and number of moles for an ideal gas, as described by Avogadro's law.	During the Activity Object, students are asked to provide responses with regard to the volume and number of moles for an ideal gas, as described by Avogadro's law. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
502	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(viii) calculate volume [and] number of moles for an ideal gas, as described by Avogadro's law	TX2_US440202XP	The Number of Moles-Volume Relationship of Gases: Avogadro's Law (TX2_US440202XP)		Q6-Q7-Q8-Q9-Q10 of the Assessment in the Activity Object, as well as Q1-Q2-Q3 in the "Reflections" section of the Activity Sheet, ask students to calculate volume and number of moles for an ideal gas, as described by Avogadro's law.
503	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(ix) calculate [total] pressure, as described by Dalton's law of partial pressure	TX2_US440206XP	Partial Pressure (TX2_US440206XP)	In Part 2 of the Activity Object, students calculate total pressure, as described by Dalton's law of partial pressure.	During the Activity Object, students are asked to provide responses with regard to total pressure, as described by Dalton's law of partial pressure. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
504	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(ix) calculate [total] pressure, as described by Dalton's law of partial pressure	TX2_US440206XP	Partial Pressure (TX2_US440206XP)		Q4-Q5-Q6-Q7-Q8-Q9-Q10 of the Assessment in the Activity Object, as well as Q2 in the "Reflections" section of the Activity Sheet, ask students to calculate total pressure, as described by Dalton's law of partial pressure.
505	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(x) calculate volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law	TX2_US440207CD	Ideal Gas Law (TX2_US440207CD)	In Part 2 of the Activity Object, students learn to calculate volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law in an interaction.	During the Activity Object, students are asked to provide responses with regard to volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
506	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(x) calculate volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law	TX2_US440207CD	Ideal Gas Law (TX2_US440207CD)		Q4 and Q10 of the Assessment in the Activity Object, as well as Q2 in the "Reflections" section of the Activity Sheet, ask students to calculate volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
507	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(A) describe and calculate the relations between volume, pressure, number of moles, and temperature for an ideal gas as described by Boyle's law, Charles' law, Avogadro's law, Dalton's law of partial pressure, and the ideal gas law	(x) calculate volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law	TX2_US4402A04	Combined Gas Law (TX2_US4402A04)	The Animation illustrates how to calculate volume, pressure, number of moles, and temperature for an ideal gas, as described by the ideal gas law.	
508	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(B) perform stoichiometric calculations, including determination of mass and volume relationships between reactants and products for reactions involving gases	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	In Part 3 of the Activity Object, students learn about, and perform, stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases.	During the Activity Object, students are asked to provide responses with regard to stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
509	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(B) perform stoichiometric calculations, including determination of mass and volume relationships between reactants and products for reactions involving gases	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)		Q2-Q6-Q7-Q8-Q10 of the Assessment in the Activity Object ask students to perform stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases.
510	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(B) perform stoichiometric calculations, including determination of mass and volume relationships between reactants and products for reactions involving gases	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	In Part 2 of the Activity Object, students learn about, and perform stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases.	
511	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(B) perform stoichiometric calculations, including determination of mass and volume relationships between reactants and products for reactions involving gases	(i) perform stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	Enrichment Sheet 2 teaches how to perform stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases.	In Enrichment Sheet 2, students perform stoichiometric calculations, including determination of mass relationships between reactants and products for reactions involving gases
512	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(B) perform stoichiometric calculations, including determination of mass and volume relationships between reactants and products for reactions involving gases	(ii) perform stoichiometric calculations, including determination of volume relationships between reactants and products for reactions involving gases	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	In Part 3 of the Activity Object, students perform stoichiometric calculations, including determination of volume relationships between reactants and products for reactions involving gases.	During the Activity Object, students are asked to provide responses with regard to stoichiometric calculations, including determination of volume relationships between reactants and products for reactions involving gases. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
513	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(B) perform stoichiometric calculations, including determination of mass and volume relationships between reactants and products for reactions involving gases	(ii) perform stoichiometric calculations, including determination of volume relationships between reactants and products for reactions involving gases	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)		Q2 of the "Learner Journal" section of the Activity Sheet asks students to perform stoichiometric calculations, including determination of volume relationships between reactants and products for reactions involving gases.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
514	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(B) perform stoichiometric calculations, including determination of mass and volume relationships between reactants and products for reactions involving gases	(ii) perform stoichiometric calculations, including determination of volume relationships between reactants and products for reactions involving gases	TX2_US480106MS	Gas Stoichiometry (TX2_US480106MS)	In Part 2 of the Activity Object, students learn about, and perform, stoichiometric calculations, including determination of volume relationships between reactants and products for reactions involving gases	
515	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(C) describe the postulates of kinetic molecular theory		TX2_US4402A05	Kinetic Molecular Theory (TX2_US4402A05)	In the Animation, students learn about the postulates of kinetic molecular theory.	Q1-Q2-Q5 of the "After the Animation" section of the Activity Sheet ask the student to describe the postulates of kinetic molecular theory.
516	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(C) describe the postulates of kinetic molecular theory		TX2_US4402A05	Kinetic Molecular Theory (TX2_US4402A05)		In the Question-Answer Sheet, students are asked questions in order to assess their ability to describe the postulates of kinetic molecular theory.
517	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(C) describe the postulates of kinetic molecular theory		TX2_US440207CD	Ideal Gas Law (TX2_US440207CD)	The Activity Object describes the postulates of kinetic molecular theory.	
518	(9) Science concepts. The student understands the principles of ideal gas behavior, kinetic molecular theory, and the conditions that influence the behavior of gases. The student is expected to:	(C) describe the postulates of kinetic molecular theory		TX2_US440210CD	Graham's Law (TX2_US440210CD)	The Activity Object describes the postulates of kinetic molecular theory.	
519	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(A) describe the unique role of water in chemical and biological systems	(i) describe the unique role of water in chemical systems	TX2_US6602A11	Water Transport in Plants (TX2_US6602A11)	The Lab Sheet teaches the unique role of water in chemical systems, with regard to water transport in plants.	The Lab Sheet asks students to describe the unique role of water in chemical systems, with regard to water transport in plants.
520	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(A) describe the unique role of water in chemical and biological systems	(ii) describe the unique role of water in biological systems	TX2_US6602A11	Water Transport in Plants (TX2_US6602A11)	The Lab Sheet teaches the unique role of water in biological systems, with regard to water transport in plants.	The Lab Sheet teaches the unique role of water in biological systems, with regard to water transport in plants.
521	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(B) develop and use general rules regarding solubility through investigations with aqueous solutions	(i) develop general rules regarding solubility through investigations with aqueous solutions	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In the Activity Object, students develop general rules regarding solubility through investigations with aqueous solutions.	During the Activity Object, students are asked to provide responses with regard to developing general rules regarding solubility through investigations with aqueous solutions. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
522	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(B) develop and use general rules regarding solubility through investigations with aqueous solutions	(i) develop general rules regarding solubility through investigations with aqueous solutions	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)		In the Activity Sheet, students are asked questions that require them to develop general rules regarding solubility, including doing so through their earlier investigations with aqueous solutions in the Activity Object.
523	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(B) develop and use general rules regarding solubility through investigations with aqueous solutions	(i) develop general rules regarding solubility through investigations with aqueous solutions	TX2_US450201CD	Molecular Interactions and Solubility (TX2_US450201CD)	In the Activity Object, students develop general rules regarding solubility through investigations with aqueous solutions.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
524	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(B) develop and use general rules regarding solubility through investigations with aqueous solutions	(i) develop general rules regarding solubility through investigations with aqueous solutions	TX2_US410202CD	Using Solubility to Identify Substances (TX2_US410202CD)	In the Activity Object, students develop general rules regarding solubility through investigations with aqueous solutions.	
525	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(B) develop and use general rules regarding solubility through investigations with aqueous solutions	(i) develop general rules regarding solubility through investigations with aqueous solutions	TX2_US4502A10	Solutions (TX2_US4502A10)	In the Animation, students develop general rules regarding solubility through investigations with aqueous solutions.	
526	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(B) develop and use general rules regarding solubility through investigations with aqueous solutions	(ii) use general rules regarding solubility through investigations with aqueous solutions	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In Part 2 of the Activity Object, students use general rules regarding solubility through investigations with aqueous solutions.	In Part 2 of the Activity Object, students use solubility rules and provide responses regarding their use of the rules. These responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
527	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(B) develop and use general rules regarding solubility through investigations with aqueous solutions	(ii) use general rules regarding solubility through investigations with aqueous solutions	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)		In the Activity Sheet, students are asked questions that require them to use general rules regarding solubility in investigations with aqueous solutions.
528	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(B) develop and use general rules regarding solubility through investigations with aqueous solutions	(ii) use general rules regarding solubility through investigations with aqueous solutions	TX2_US4502A10	Solutions (TX2_US4502A10)	The Animation teaches students about general rules regarding solubility through investigations with aqueous solutions.	
529	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(C) calculate the concentration of solutions in units of molarity		TX2_US450203MS	The Concentration of Solutions: Molarity and Molality (TX2_US450203MS)	In Part 2 of the Activity Object, students learn about molarity in order to calculate the concentration of solutions.	Q3-Q4-Q5-Q6-Q7-Q10 of the Assessment in the Activity Object assess students' ability to calculate the concentration of solutions in units of molarity.
530	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(C) calculate the concentration of solutions in units of molarity		TX2_US4502A09	Diluting Solutions (TX2_US4502A09)	The Enrichment Sheet shows students how to perform calculations of the concentration of solutions in units of molarity.	The Enrichment Sheet asks questions that require students to perform calculations of the concentration of solutions in units of molarity.
531	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(D) use molarity to calculate the dilutions of solutions		TX2_US4502A09	Diluting Solutions (TX2_US4502A09)	The Animation shows how to use molarity to calculate the dilutions of solutions.	Q3 of the "After the Animation" section in the Question-Answer Sheet, as well as Q1 and Q2 in the Enrichment Sheet, ask students to use molarity to calculate the dilutions of solutions.
532	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(D) use molarity to calculate the dilutions of solutions		TX2_US450203MS	The Concentration of Solutions: Molarity and Molality (TX2_US450203MS)	In Part 4 of the Activity Object, during the preparation stage, students are shown how to use molarity to calculate the dilutions of solutions.	
533	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(D) use molarity to calculate the dilutions of solutions		TX2_US450203MS	The Concentration of Solutions: Molarity and Molality (TX2_US450203MS)	In Part 2 of the Activity Object, students are shown how to use molarity to calculate the dilutions of solutions.	
534	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(D) use molarity to calculate the dilutions of solutions		TX2_US450204MS	The Concentration of Solutions: Mass Fraction and Mass Percent (TX2_US450204MS)	In Part 3 of the Activity Object, during the preparation stage, students are shown how to use molarity to calculate the dilutions of solutions.	
535	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(E) distinguish between types of solutions such as electrolytes and nonelectrolytes and unsaturated, saturated, and supersaturated solutions	(i) distinguish between types of solutions	TX2_US4502A10	Solutions (TX2_US4502A10)	In the Animation, students are told how to distinguish between types of solutions.	In the Enrichment Sheet students distinguish between types of solutions such as gas-gas, gas-liquid, liquid-liquid, solid-liquid, solid-solid.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
536	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(E) distinguish between types of solutions such as electrolytes and nonelectrolytes and unsaturated, saturated, and supersaturated solutions	(i) distinguish between types of solutions	TX2_US4502E01	Electrical Conductivity in Solutions (TX2_US4502E01)	In the Animation, students are told how to distinguish between types of solutions.	In the Question-Answer Sheet, students are asked to state the difference between electrolyte and nonelectrolyte solutions.
537	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(E) distinguish between types of solutions such as electrolytes and nonelectrolytes and unsaturated, saturated, and supersaturated solutions	(i) distinguish between types of solutions	TX2_US4502A02	The Electrical Conductivity of a Solution (TX2_US4502A02)	In the Animation, students are told how to distinguish between types of solutions.	
538	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(E) distinguish between types of solutions such as electrolytes and nonelectrolytes and unsaturated, saturated, and supersaturated solutions	(i) distinguish between types of solutions	TX2_US4502A10	Solutions (TX2_US4502A10)	In the Animation, students are told how to distinguish between types of solutions.	
539	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(F) investigate factors that influence solubilities and rates of dissolution such as temperature, agitation, and surface area	(i) investigate factors that influence solubilities	TX2_US450201CD	Molecular Interactions and Solubility (TX2_US450201CD)	In the Activity Object, students investigate factors that influence solubilities.	During the Activity Object, students are asked to provide responses with regard to investigating factors that influence solubilities. Student responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
540	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(F) investigate factors that influence solubilities and rates of dissolution such as temperature, agitation, and surface area	(i) investigate factors that influence solubilities	TX2_US450201CD	Molecular Interactions and Solubility (TX2_US450201CD)		Q5-Q7-Q10 of the Assessment in the Activity Object, as well as Q1-Q2-Q4-Q5 in the "Learner Journal" section of the Activity Sheet, ask students to investigate factors that influence solubilities.
541	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(F) investigate factors that influence solubilities and rates of dissolution such as temperature, agitation, and surface area	(i) investigate factors that influence solubilities	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In the Activity Object, students investigate factors that influence solubilities.	
542	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(F) investigate factors that influence solubilities and rates of dissolution such as temperature, agitation, and surface area	(ii) investigate factors that influence rates of dissolution	TX2_US4502A05	Factors Affecting Rate of Dissolution (TX2_US4502A05)	In the Animation, students investigate factors that influence rates of dissolution.	Q2-Q3-Q4 in the Question-Answer Sheet ask students to investigate and discuss factors that influence rates of dissolution.
543	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(i) define acids	TX2_US4601A04	Lewis Definitions of Acids and Bases (TX2_US4601A04)	In the Animation, the definition of acids is explained through past and currently accepted definitions.	Q3 of the "After the Animation" section of the Question-Answer Sheet asks students to define acids and bases according to Lewis.
544	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(i) define acids	TX2_US4601A04	Lewis Definitions of Acids and Bases (TX2_US4601A04)		In the Question-Answer Sheet, students are asked at least one question that requires them to define acids.
545	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(i) define acids	TX2_US4601A06	Bronsted-Lowry Definition of Acids and Bases (TX2_US4601A06)	In the Animation, the definition of acids is explained through past and currently accepted definitions.	Q1-Q2-Q3-Q4 of the "After the Animation" section of the Question-Answer Sheet ask students to define acids and bases according to Bronsted-Lowry.
546	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(i) define acids	TX2_US460101XP	The Properties of Acids (TX2_US460101XP)	In the Activity Object, acids are defined by their properties.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
547	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(ii) define bases	TX2_US4601A04	Lewis Definitions of Acids and Bases (TX2_US4601A04)	In the Animation, the definition of bases is explained through past and currently accepted definitions.	Q3 of the "After the Animation" section of the Question-Answer Sheet asks students to define acids and bases according to Lewis.
548	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(ii) define bases	TX2_US4601A04	Lewis Definitions of Acids and Bases (TX2_US4601A04)		In the Question-Answer Sheet, students are asked at least one questions that requires them to define bases.
549	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(ii) define bases	TX2_US4601A06	Bronsted-Lowry Definition of Acids and Bases (TX2_US4601A06)	In the Animation, the definition of bases is explained through past and currently accepted definitions.	Q1-Q2-Q3 of the "After the Animation" section in the Question-Answer Sheet ask students to define acids and bases according to Bronsted-Lowry.
550	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(ii) define bases	TX2_US460102XP	The Properties of Bases (TX2_US460102XP)	In the Activity Object, bases are defined by their properties.	
551	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(iii) distinguish between Arrhenius and Bronsted-Lowry definitions	TX2_US4601A04	Lewis Definitions of Acids and Bases (TX2_US4601A04)	The Animation distinguishes between Arrhenius and Bronsted-Lowry definitions by contrasting the models used to create the definitions, and also by comparing them to the most current and accepted definition.	Q2 of the "After the Animation" section in the Question-Answer Sheet asks students to distinguish between Arrhenius and Bronsted-Lowry definitions.
552	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(iii) distinguish between Arrhenius and Bronsted-Lowry definitions	TX2_US4601A04	Lewis Definitions of Acids and Bases (TX2_US4601A04)		In the Question-Answer Sheet, students are asked questions that require them to distinguish between Arrhenius and Bronsted-Lowry definitions.
553	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(iii) distinguish between Arrhenius and Bronsted-Lowry definitions	TX2_US4601A06	Bronsted-Lowry Definition of Acids and Bases (TX2_US4601A06)	The Animation distinguishes between Arrhenius and Bronsted-Lowry definitions by contrasting the models used to create the definitions.	In the Question-Answer Sheet, students are asked questions that require them to distinguish between Arrhenius and Bronsted-Lowry definitions.
554	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(iv) predict products in acid base reactions that form water	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In the Activity Object, students learn how to predict products in acid-base reactions that form water.	The Activity Sheet asks the student a question that requires them to predict products in acid base reactions that form water
555	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(iv) predict products in acid base reactions that form water	TX2_US460101XP	The Properties of Acids (TX2_US460101XP)	In the Activity Object, students predict products in acid-base reactions that form water.	
556	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(G) define acids and bases and distinguish between Arrhenius and Bronsted-Lowry definitions and predict products in acid base reactions that form water	(iv) predict products in acid base reactions that form water	TX2_US4801A11	Differentiating Acid-Base, Precipitation, and Oxidation-Reduction Reactions (TX2_US4801A11)	The Enrichment Sheet teaches students how to predict products in acid-base reactions that form water.	The Enrichment Sheet asks students to predict products in acid-base reactions that form water.
557	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(i) understand acid-base reactions	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 2 of the Activity Object, students learn to understand acid-base reactions through listening to an explanation on neutralization.	Q3-Q4-Q5-Q6 of the Assessment in the Activity Object ask students to test their understanding of acid-base reactions.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
558	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(i) understand acid-base reactions	TX2_US4601A06	Bronsted-Lowry Definition of Acids and Bases (TX2_US4601A06)	In the Animation, students understand acid-base reactions by viewing the definition by which they occur.	
559	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(i) understand acid-base reactions	TX2_US4601A01	Arrhenius Definition of Acids and Bases (TX2_US4601A01)	In the Animation, students understand acid-base reactions by viewing the evolution of how their definitions were developed.	In the Question-Answer Sheet, students are asked questions to assess their understanding of acid-base reactions.
560	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(i) understand acid-base reactions	TX2_US460201XP	Introduction to Titration: Neutralization (TX2_US460201XP)	In Part 3 of the Activity Object, students understand acid-base reactions by performing an investigation in which they observe a neutralization reaction with a strong acid and a strong base.	
561	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(i) understand acid-base reactions	TX2_US4801A11	Differentiating Acid-Base, Precipitation, and Oxidation-Reduction Reactions (TX2_US4801A11)	In the Animation, students understand acid-base reactions by comparing them to other reaction types.	
562	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(i) understand acid-base reactions	TX2_US4801A11	Differentiating Acid-Base, Precipitation, and Oxidation-Reduction Reactions (TX2_US4801A11)	The Enrichment Sheet teaches students on the subject of acid-base reactions	The Enrichment Sheet asks students to answer a question about acid-base reactions.
563	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(ii) understand precipitation reactions	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In Part 1 of the Activity Object, students learn about precipitation reactions through an explanation of how the reactions occur in kidney stones.	Q1-Q2-Q5 of the Assessment in the Activity Object asks students to test their understanding of precipitation reactions.
564	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(ii) understand precipitation reactions	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In Part 2 of the Activity Object, students learn about precipitation reactions by doing an investigation that compares various solutions and their reactions.	
565	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(ii) understand precipitation reactions	TX2_US4801A10	DoubleReplacement Reactions (TX2_US4801A10)	In the Animation, students learn about precipitation reactions through double-replacement reactions.	
566	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(ii) understand precipitation reactions	TX2_US480103CD	Precipitation Reactions (TX2_US480103CD)	In Part 3 of the Activity Object, students learn about precipitation reactions by viewing a detailed explanation of what occurred in the investigation.	In the Activity Sheet, students are assessed on precipitation reactions by answering questions.
567	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(ii) understand precipitation reactions	TX2_US4801A11	Differentiating Acid-Base, Precipitation, and Oxidation-Reduction Reactions (TX2_US4801A11)	In the Animation, students learn about precipitation reactions by comparing them to other reaction types.	
568	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(ii) understand precipitation reactions	TX2_US4801A11	Differentiating Acid-Base, Precipitation, and Oxidation-Reduction Reactions (TX2_US4801A11)	The Enrichment Sheet teaches students about precipitation reactions.	The Enrichment Sheet asks a question about precipitation reactions
569	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(iii) understand oxidation-reduction reactions	TX2_US4801A04	OxidationReduction Reactions (TX2_US4801A04)	The Animation teaches students on the topic of oxidation-reduction reactions.	In the Question-Answer Sheet, students answer questions that assess their understanding of oxidation-reduction reactions.
570	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(iii) understand oxidation-reduction reactions	TX2_US4801A02	Combustion Reactions (TX2_US4801A02)	The Animation teaches students about oxidation-reduction reactions through combustion.	

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
571	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(iii) understand oxidation-reduction reactions	TX2_US4801A08	SingleReplacement Reactions (TX2_US4801A08)	The Animation teaches students about different types of oxidation-reduction reactions, such as single-replacement reactions.	
572	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(iii) understand oxidation-reduction reactions	TX2_US4801A11	Differentiating Acid-Base, Precipitation, and Oxidation-Reduction Reactions (TX2_US4801A11)	In the Animation, students learn about oxidation-reduction reactions by comparing them to other reaction types.	
573	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(iii) understand oxidation-reduction reactions	TX2_US4801A11	Differentiating Acid-Base, Precipitation, and Oxidation-Reduction Reactions (TX2_US4801A11)	The Enrichment Sheet teaches students about oxidation-reduction reactions.	The Enrichment Sheet asks a question about oxidation-reduction reactions
574	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(iv) differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	TX2_US4801A11	Differentiating Acid-Base, Precipitation, and Oxidation-Reduction Reactions (TX2_US4801A11)	The Animation teaches students how to differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions.	In the Question-Answer Sheet, students are assessed on their ability to differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions.
575	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(iv) differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	TX2_US4801A11	Differentiating Acid-Base, Precipitation, and Oxidation-Reduction Reactions (TX2_US4801A11)	The Enrichment Sheet teaches students to differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions.	Q1-Q2-Q3 of the Enrichment Sheet ask students to differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions.
576	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(H) understand and differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	(iv) differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions	TX2_US4801A06	Decomposition and Combination Reactions (TX2_US4801A06)	The Animation teaches students how to differentiate among acid-base reactions, precipitation reactions, and oxidation-reduction reactions by learning the basic concepts of decomposition and combination reactions.	
577	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(I) define pH and use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution	(i) define pH	TX2_US460203MS	pH Calculation of Acid and Base Solutions (TX2_US460203MS)	In the Activity Object, pH is defined through its properties and importance/presence in substances.	Q1 and Q2 of the "Learning Journal" section of the Activity Sheet ask students to define pH and pOH.
578	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(I) define pH and use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution	(i) define pH	TX2_US460203MS	pH Calculation of Acid and Base Solutions (TX2_US460203MS)		In the Activity Sheet, students are asked to define pH.
579	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(I) define pH and use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution	(i) define pH	TX2_US4601A02	Acid-Base Indicators (TX2_US4601A02)	In the Animation, pH is defined.	In the Question-Answer Sheet, students are asked to define pH.
580	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(I) define pH and use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution	(ii) use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution	TX2_US460203MS	pH Calculation of Acid and Base Solutions (TX2_US460203MS)	In Part 3 of the Activity Object, the hydroxide ion concentration is used to calculate the pH of a solution.	Q5-Q6-Q8 of the "Learning Journal" section of the Activity Sheet ask students to use the hydronium or hydroxide ion concentrations to calculate the pH of a solution. Q2 of the "Reflections" section of the Activity Sheet also asks students to use the same ions with regard to calculating pH.
581	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(I) define pH and use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution	(ii) use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution	TX2_US460203MS	pH Calculation of Acid and Base Solutions (TX2_US460203MS)		In the Activity Sheet, students are required to use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
582	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(I) define pH and use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution	(ii) use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution	TX2_US460203MS	pH Calculation of Acid and Base Solutions (TX2_US460203MS)		In the Enrichment Sheet, students are asked questions that require them to use the hydrogen or hydroxide ion concentrations to calculate the pH of a solution.
583	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(J) distinguish between degrees of dissociation for strong and weak acids and bases	(i) distinguish between degrees of dissociation for strong and weak acids	TX2_US4601A03	Dissociation of Acids and Bases (TX2_US4601A03)	The Enrichment Sheet teaches students to distinguish between degrees of dissociation for strong and weak acids.	Q5 of the "After the Animation" section of the Question-Answer Sheet asks students to distinguish between degrees of dissociation for strong and weak acids and bases.
584	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(J) distinguish between degrees of dissociation for strong and weak acids and bases	(i) distinguish between degrees of dissociation for strong and weak acids	TX2_US4601A03	Dissociation of Acids and Bases (TX2_US4601A03)	The Animation distinguishes between degrees of dissociation for strong and weak acids.	In the Enrichment Sheet, at least one question asks students to distinguish between degrees of dissociation for strong and weak acids.
585	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(J) distinguish between degrees of dissociation for strong and weak acids and bases	(i) distinguish between degrees of dissociation for strong and weak acids	TX2_US4601A03	Dissociation of Acids and Bases (TX2_US4601A03)		In the Question-Answer Sheet, students are asked to distinguish between degrees of dissociation for strong and weak acids.
586	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(J) distinguish between degrees of dissociation for strong and weak acids and bases	(ii) distinguish between degrees of dissociation for strong and weak bases	TX2_US4601A03	Dissociation of Acids and Bases (TX2_US4601A03)	The Enrichment Sheet teaches students to distinguish between degrees of dissociation for strong and weak bases.	Q5 of the "After the Animation" section in the Question-Answer Sheet asks students to distinguish between degrees of dissociation for strong and weak acids and bases.
587	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(J) distinguish between degrees of dissociation for strong and weak acids and bases	(ii) distinguish between degrees of dissociation for strong and weak bases	TX2_US4601A03	Dissociation of Acids and Bases (TX2_US4601A03)	The Animation distinguishes between degrees of dissociation for strong and weak bases.	In the Enrichment Sheet, students are asked to distinguish between degrees of dissociation for strong and weak bases.
588	(10) Science concepts. The student understands and can apply the factors that influence the behavior of solutions. The student is expected to:	(J) distinguish between degrees of dissociation for strong and weak acids and bases	(ii) distinguish between degrees of dissociation for strong and weak bases	TX2_US4601A03	Dissociation of Acids and Bases (TX2_US4601A03)		In the Question-Answer Sheet, students are asked to distinguish between degrees of dissociation for strong and weak bases.
589	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(A) understand energy and its forms, including kinetic, potential, chemical, and thermal energies	(i) understand energy and its forms, including kinetic energ[y]	TX2_US4802A01	Energy in Chemical Systems (TX2_US4802A01)	The Enrichment Sheet teaches students about energy and its forms, including kinetic energy.	Q1 and Q2 in Enrichment Sheet 2, as well as Q1 and Q2 in Enrichment Sheet 3, test students' understanding of energy and its forms, including kinetic and potential energy.
590	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(A) understand energy and its forms, including kinetic, potential, chemical, and thermal energies	(i) understand energy and its forms, including kinetic energ[y]	TX2_US4802A01	Energy in Chemical Systems (TX2_US4802A01)	The Animation teaches students about energy and its forms, including kinetic energy.	
591	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(A) understand energy and its forms, including kinetic, potential, chemical, and thermal energies	(ii) understand energy and its forms, including potential energ[y]	TX2_US4802A01	Energy in Chemical Systems (TX2_US4802A01)	The Animation teaches students about energy and its forms, including potential energy.	Q1 and Q2 in Enrichment Sheet 2, as well as Q1 and Q2 in Enrichment Sheet 3, test students' understanding of energy and its forms, including kinetic and potential energy.
592	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(A) understand energy and its forms, including kinetic, potential, chemical, and thermal energies	(ii) understand energy and its forms, including potential energ[y]	TX2_US4301A16	Concept of Bonding (TX2_US4301A16)	The Animation teaches students about energy and its forms, including potential energy.	
593	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(A) understand energy and its forms, including kinetic, potential, chemical, and thermal energies	(ii) understand energy and its forms, including potential energ[y]	TX2_US4802A01	Energy in Chemical Systems (TX2_US4802A01)	The Animation teaches students about energy and its forms, including potential energy.	
594	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(A) understand energy and its forms, including kinetic, potential, chemical, and thermal energies	(iii) understand energy and its forms, including chemical energ[y]	TX2_US4802A01	Energy in Chemical Systems (TX2_US4802A01)	The Enrichment Sheet teaches students about energy and its forms, including chemical energy.	Q1 and Q2 in Enrichment Sheet 3 test students on their understanding of energy and its forms, including chemical energy.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
595	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(A) understand energy and its forms, including kinetic, potential, chemical, and thermal energies	(iii) understand energy and its forms, including chemical energ[y]	TX2_US4802A01	Energy in Chemical Systems (TX2_US4802A01)	The Animation teaches students about energy and its forms, including chemical energy.	
596	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(A) understand energy and its forms, including kinetic, potential, chemical, and thermal energies	(iv) understand energy and its forms, including thermal energ[y]	TX2_US4802A01	Energy in Chemical Systems (TX2_US4802A01)	The Enrichment Sheet teaches students about energy and its forms, including thermal energy.	Q1 and Q2 of Enrichment Sheet 1 test students' understanding of energy and its forms, including thermal energy.
597	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(A) understand energy and its forms, including kinetic, potential, chemical, and thermal energies	(iv) understand energy and its forms, including thermal energ[y]	TX2_US4802A01	Energy in Chemical Systems (TX2_US4802A01)	The Animation teaches students about energy and its forms, including thermal energy.	
598	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(B) understand the law of conservation of energy and the processes of heat transfer	(i) understand the law of conservation of energy	TX2_US250103CD	Heat Transfer in a Truck Engine (TX2_US250103CD)	The Activity Object teaches the law of conservation of energy with regard to an engine.	
599	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(B) understand the law of conservation of energy and the processes of heat transfer	(i) understand the law of conservation of energy	TX2_US480202CD	Endothermic and Exothermic Reactions (TX2_US480202CD)	The Activity Object teaches the law of conservation of energy.	
600	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(B) understand the law of conservation of energy and the processes of heat transfer	(i) understand the law of conservation of energy	TX2_US210314CD	Energy Conversions in a Power Plant (TX2_US210314CD)	The Activity Object teaches the law of conservation of energy.	
601	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(B) understand the law of conservation of energy and the processes of heat transfer	(i) understand the law of conservation of energy	TX2_US2103A05	Law of Conservation of Energy (TX2_US2103A05)	The Activity Object teaches the law of conservation of energy.	The Question-Answer sheet assesses the understanding of the law of conservation of energy.
602	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(B) understand the law of conservation of energy and the processes of heat transfer	(ii) understand the processes of heat transfer	TX2_US250103CD	Heat Transfer in a Truck Engine (TX2_US250103CD)	In the Activity Object, students learn the process of heat transfer in an engine.	Q2-Q3-Q5-Q6-Q7 of the Assessment in the Activity Object test students' understanding of the process of heat transfer.
603	(11) Science concepts. The student unders	(B) understand the law of conservat	(ii) understand the processes	TX2_US480202CD	Endothermic and Exothermic Reactions (TX2_US480202CD)	In the Activity Object, students learn about the processes of heat transfer through endothermic and exothermic reactions.	
604	(11) Science concepts. The student unders	(B) understand the law of conservat	(ii) understand the processes	TX2_US210314CD	Energy Conversions in a Power Plant (TX2_US210314CD)	In the Activity Object, students learn the process of heat transfer through energy conversion.	
605	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(C) use thermochemical equations to calculate energy changes that occur in chemical reactions and classify reactions as exothermic or endothermic	(i) use thermochemical equations to calculate energy changes that occur in chemical reactions	TX2_US480201CD	Hess's Law (TX2_US480201CD)	In Part 3 of the Activity Object, students use thermochemical equations to calculate energy changes that occur in chemical reactions.	In the Assessment section, in all 10 of the questions, the student is asked to use thermochemical equations to calculate energy changes that occur in chemical reactions.
606	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(C) use thermochemical equations to calculate energy changes that occur in chemical reactions and classify reactions as exothermic or endothermic	(i) use thermochemical equations to calculate energy changes that occur in chemical reactions	TX2_US4802A02	Using a Calorimeter (TX2_US4802A02)	The Investigation Sheet teaches the use of Q=mc delta T.	The Investigation Sheet assesses the use of thermochemical equations to calculate energy changes that occur in chemical reactions
607	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(C) use thermochemical equations to calculate energy changes that occur in chemical reactions and classify reactions as exothermic or endothermic	(i) use thermochemical equations to calculate energy changes that occur in chemical reactions	TX2_US4802A02	Using a Calorimeter (TX2_US4802A02)	The Enrichment Sheet uses thermochemical equations to calculate energy changes that occur in chemical reactions	The Enrichment Sheet contains questions involving thermochemical equations to calculate energy changes that occur in chemical reactions
608	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(C) use thermochemical equations to calculate energy changes that occur in chemical reactions and classify reactions as exothermic or endothermic	(ii) classify reactions as exothermic or endothermic	TX2_US480202CD	Endothermic and Exothermic Reactions (TX2_US480202CD)	In Part 2 of the Activity Object, students learn how to classify reactions as exothermic or endothermic.	Q1-Q2-Q3-Q4 of the Assessment in the Activity Object ask students to classify reactions as exothermic or endothermic.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
609	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(C) use thermochemical equations to calculate energy changes that occur in chemical reactions and classify reactions as exothermic or endothermic	(ii) classify reactions as exothermic or endothermic	TX2_US480202CD	Endothermic and Exothermic Reactions (TX2_US480202CD)	In Part 3 of the Activity Object, students learn about, and classify, reactions as exothermic or endothermic by doing an investigation with different substances.	
610	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(C) use thermochemical equations to calculate energy changes that occur in chemical reactions and classify reactions as exothermic or endothermic	(ii) classify reactions as exothermic or endothermic	TX2_US480202CD	Endothermic and Exothermic Reactions (TX2_US480202CD)	In Part 4 of the Activity Object, students learn about, and classify, reactions as exothermic or endothermic.	In the Activity Sheet, students must answer questions that ask them to classify reactions as exothermic or endothermic.
611	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(C) use thermochemical equations to calculate energy changes that occur in chemical reactions and classify reactions as exothermic or endothermic	(ii) classify reactions as exothermic or endothermic	TX2_US4802A02	Using a Calorimeter (TX2_US4802A02)	The Enrichment Sheet teaches students how to classify reactions as exothermic or endothermic	In the Enrichment Sheet, students must classify reactions as Endothermic or exothermic
612	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(i) perform calculations involving heat	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In Part 2 of the Activity Object, students are required to perform calculations involving heat.	Q2-Q3-Q4-Q5-Q6-Q7-Q8 of the Assessment in the Activity Object ask students to perform calculations involving heat.
613	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(i) perform calculations involving heat	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In Part 4 of the Activity Object, students learn about, and perform, calculations involving heat.	
614	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(i) perform calculations involving heat	TX2_US440403CD	Specific Heat (TX2_US440403CD)		In Enrichment Sheet 1 and Enrichment Sheet 2, students perform calculations involving heat.
615	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(i) perform calculations involving heat	TX2_US4802A02	Using a Calorimeter (TX2_US4802A02)	The Investigation Sheet helps students learn more about calculations involving heat.	The Investigation Sheet requires calculations involving heat.
616	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(i) perform calculations involving heat	TX2_US4802A02	Using a Calorimeter (TX2_US4802A02)	The Enrichment Sheet teaches more about calculations involving heat.	The Enrichment Sheet requires calculations involving heat.
617	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(ii) perform calculations involving mass	TX2_US480304XP	Conservation of Mass in Chemical Reactions (TX2_US480304XP)	In Part 2 of the Activity Object, students are required to perform calculations involving mass.	Q4-Q6-Q7-Q8-Q9 of the Assessment in the Activity Object ask students to perform calculations involving mass.
618	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(ii) perform calculations involving mass	TX2_US440403CD	Specific Heat (TX2_US440403CD)	The Enrichment Sheets teach students more about calculations involving mass.	In Enrichment Sheet 1 and Enrichment Sheet 2, students perform calculations involving mass.
619	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(iii) perform calculations involving temperature change	TX2_US440403CD	Specific Heat (TX2_US440403CD)	The Activity Object teaches students about the concept of specific heat through experimental observations. Students discover the experimental formula relating energy, mass, specific heat, and temperature change.	Q2-Q3-Q4-Q5-Q6-Q7-Q8 of the Assessment in the Activity Object ask students to perform calculations involving temperature change.
620	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(iii) perform calculations involving temperature change	TX2_US440403CD	Specific Heat (TX2_US440403CD)	Enrichment Sheet 1 and Enrichment Sheet 2 teach students to perform calculations involving temperature change.	In Enrichment Sheet 1 and Enrichment Sheet 2 ask students to perform calculations involving temperature change.
621	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(iii) perform calculations involving temperature change	TX2_US4802A02	Using a Calorimeter (TX2_US4802A02)	The Investigation Sheet involves further insight into calculations involving temperature change.	The Investigation Sheet requires students to calculate temperature changes.
622	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(iv) perform calculations involving specific heat	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In Part 2 of the Activity Object, students learn about performing calculations involving specific heat.	Q2-Q3-Q4-Q5-Q6-Q7-Q8 of the Assessment in the Activity Object ask students to perform calculations involving specific heat.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
623	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(iv) perform calculations involving specific heat	TX2_US440403CD	Specific Heat (TX2_US440403CD)	In Part 4 of the Activity Object, students learn about, and perform, calculations involving specific heat.	
624	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(D) perform calculations involving heat, mass, temperature change, and specific heat	(iv) perform calculations involving specific heat	TX2_US4802A02	Using a Calorimeter (TX2_US4802A02)	The Investigation Sheet provides further insight into calculations involving specific heat.	In the Investigation Sheet, students must perform calculations involving specific heat.
625	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(E) use calorimetry to calculate the heat of a chemical process		TX2_US4802A02	Using The Calorimeter (TX2_US4802A02)	The Animation uses calorimetry to calculate the heat of a chemical process.	Q5 of the "After the Animation" section in the Question-Answer Sheet asks students to use calorimetry to calculate the heat of a chemical process.
626	(11) Science concepts. The student understands the energy changes that occur in chemical reactions. The student is expected to:	(E) use calorimetry to calculate the heat of a chemical process		TX2_US4802A02	Using a Calorimeter (TX2_US4802A02)	The Investigation Sheet provides further insight into calorimetry calculations to measure the heat of a chemical process.	In the Investigation Sheet, students must perform investigations using calorimetry to calculate the heat of a chemical process.
627	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(i) describe the characteristics of alpha radiation	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	In Part 2 of the Activity Object, students learn about the characteristics of alpha radiation.	Q5 in the "Learning Journal" section of the Activity Sheet, as well as Q1 of the Enrichment Sheet, ask the student to describe the characteristics of alpha radiation.
628	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(i) describe the characteristics of alpha radiation	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	In Part 3 of the Activity Object, students learn about the characteristics of alpha radiation.	
629	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(i) describe the characteristics of alpha radiation	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	The Enrichment Sheet describes the characteristics of alpha radiation	In the Enrichment Sheet, students must define and describe alpha decay.
630	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(i) describe the characteristics of alpha radiation	TX2_US2602A03	Half Life (TX2_US2602A03)	The Animation describes the characteristics of alpha radiation.	
631	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(ii) describe the characteristics of beta radiation	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	In Part 2 of the Activity Object, students learn about the characteristics of beta radiation.	Q7 of the "Learning Journal" section of the Activity Sheet, as well as Q3 of the Enrichment Sheet, ask students to describe the characteristics of beta radiation.
632	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(ii) describe the characteristics of beta radiation	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	In Part 3 of the Activity Object, students learn about the characteristics of beta radiation.	In the Activity Sheet, students are asked to describe the characteristics of beta radiation.
633	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(ii) describe the characteristics of beta radiation	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	The Enrichment Sheet further describes the characteristics of beta radiation.	In the Enrichment Sheet, students must define and describe beta decay.
634	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(ii) describe the characteristics of beta radiation	TX2_US2602A03	Half Life (TX2_US2602A03)	The Animation describes the characteristics of beta radiation.	
635	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(iii) describe the characteristics gamma radiation	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	The Activity Object teaches students about the characteristics of gamma radiation.	Q3 of the Enrichment Sheet asks students to describe the characteristics of gamma radiation.
636	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(iii) describe the characteristics gamma radiation	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	In Part 3 of the Activity Object, students learn about the characteristics of gamma radiation.	In the Activity Sheet, students are asked to describe the characteristics of gamma radiation.
637	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(iii) describe the characteristics gamma radiation	TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	The Enrichment Sheet further describes the characteristics of gamma radiation.	In the Enrichment Sheet, students define and describe gamma decay.

	TEKS (Knowledge and Skills)	Student Expectation	Breakout	Item Number	AC ID and Name (Learning Component)	Description (Learning Component)	Description (Assessment Component)
638	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(A) describe the characteristics of alpha, beta, and gamma radiation	(iii) describe the characteristics gamma radiation	TX2_US2602A03	Half Life (TX2_US2602A03)	The Animation describes the characteristics of gamma radiation.	
639	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(B) describe radioactive decay process in terms of balanced nuclear equations		TX2_US260202CD	Radioactive Decay (TX2_US260202CD)	Enrichment Sheet 2 describes the radioactive decay process in terms of balanced nuclear equations	Enrichment Sheet 2 asks students to describe the radioactive decay process in terms of balanced nuclear equations.
640	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(B) describe radioactive decay process in terms of balanced nuclear equations		TX2_US260202CD	Radioactive Decay (TX2_US260202CD)		Q8 and Q9 of the Assessment in the Activity Object ask students to describe the radioactive decay process in terms of balanced nuclear equations.
641	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(C) compare fission and fusion reactions		TX2_US260201CD	Nuclear Energy: Fission (TX2_US260201CD)	In the Activity Object, students learn about comparing fission and fusion reactions.	In the Activity Object, students provide responses regarding the differences between fission and fusion. These responses are assessed by the Activity Object software, which provides appropriate feedback as students work through the exercises.
642	(12) Science concepts. The student understands the basic processes of nuclear chemistry. The student is expected to:	(C) compare fission and fusion reactions		TX2_US260201CD	Nuclear Energy: Fission (TX2_US260201CD)	The Enrichment Sheet provides additional information about fission and fusion reactions and further compares them.	The Enrichment Sheet asks students to compare fission and fusion reactions.