

**2023 STAAR Released Blueprint
Grade 8 Science
Spring, 2023–2024**

Test Code	Year	Form
3081	23	4
Last Revision Date:10/17/2023		

SE Descriptions	Reporting Category	TEKS/SE	R or S	No. of Items	% of Test
1. Matter and energy. The student knows matter has physical properties that can be used for classification. The student is expected to compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability.	1	6.6A	S	1	3%
2. Matter and energy. The student knows matter has physical properties that can be used for classification. The student is expected to calculate density to identify an unknown substance.	1	6.6B	S	1	3%
3. Force, motion, and energy. The student knows force and motion are related to potential and kinetic energy. The student is expected to compare and contrast potential and kinetic energy.	2	6.8A	S	1	3%
4. Force, motion, and energy. The student knows force and motion are related to potential and kinetic energy. The student is expected to calculate average speed using distance and time measurements.	2	6.8C	S	1	3%
5. Force, motion, and energy. The student knows force and motion are related to potential and kinetic energy. The student is expected to measure and graph changes in motion.	2	6.8D	S	1	3%
6. Force, motion, and energy. The student knows that the Law of Conservation of Energy states that energy can neither be created nor destroyed, it just changes form. The student is expected to demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy.	2	6.9C	S	1	3%
7. Organisms and environments. The student knows that there is a relationship between organisms and the environment. The student is expected to describe how biodiversity contributes to the sustainability of an ecosystem.	4	7.10B	S	1	3%
8. Organisms and environments. The student knows that there is a relationship between organisms and the environment. The student is expected to observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds.	4	7.10C	S	1	3%
9. Organisms and environments. The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems.	4	7.12B	S	1	3%
10. Organisms and environments. The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole.	4	7.12D	S	1	3%

SE Descriptions	Reporting Category	TEKS/SE	R or S	No. of Items	% of Test
11. Organisms and environments. The student knows that reproduction is a characteristic of living organisms and that the instructions for traits are governed in the genetic material. The student is expected to compare the results of uniform or diverse offspring from asexual or sexual reproduction.	4	7.14B	S	1	3%
12. Organisms and environments. The student knows that reproduction is a characteristic of living organisms and that the instructions for traits are governed in the genetic material. The student is expected to recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus.	4	7.14C	S	1	3%
13. Earth and space. The student knows that climatic interactions exist among Earth, ocean, and weather systems. The student is expected to identify the role of the oceans in the formation of weather systems such as hurricanes.	3	8.10C	R	1	3%
14. Organisms and environments. The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student is expected to investigate how organisms and populations in an ecosystem depend on and may compete for biotic factors such as food and abiotic factors such as quantity of light, water, range of temperatures, or soil composition.	4	8.11A	R	2	5%
15. Organisms and environments. The student knows that interdependence occurs among living systems and the environment and that human activities can affect these systems. The student is expected to explore how short- and long-term environmental changes affect organisms and traits in subsequent populations.	4	8.11B	R	1	3%
16. Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to describe the structure of atoms, including the masses, electrical charges, and locations, of protons and neutrons in the nucleus and electrons in the electron cloud.	1	8.5A	R	2	5%
17. Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to identify that protons determine an element's identity and valence electrons determine its chemical properties, including reactivity.	1	8.5B	R	2	5%
18. Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to interpret the arrangement of the Periodic Table, including groups and periods, to explain how properties are used to classify elements.	1	8.5C	R	1	3%
19. Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts.	1	8.5D	R	1	3%
20. Matter and energy. The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to investigate how evidence of chemical reactions indicates that new substances with different properties are formed and how that relates to the law of conservation of mass.	1	8.5E	R	2	5%

SE Descriptions		Reporting Category	TEKS/SE	R or S	No. of Items	% of Test	
21. Force, motion, and energy. The student knows that there is a relationship between force, motion, and energy. The student is expected to demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion.		2	8.6A	S	2	5%	
22. Force, motion, and energy. The student knows that there is a relationship between force, motion, and energy. The student is expected to differentiate between speed, velocity, and acceleration.		2	8.6B	R	1	3%	
23. Force, motion, and energy. The student knows that there is a relationship between force, motion, and energy. The student is expected to investigate and describe applications of Newton's three laws of motion such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches.		2	8.6C	R	2	5%	
24. Earth and space. The student knows the effects resulting from cyclical movements of the Sun, Earth, and Moon. The student is expected to model and illustrate how the tilted Earth rotates on its axis, causing day and night, and revolves around the Sun, causing changes in seasons.		3	8.7A	R	2	5%	
25. Earth and space. The student knows the effects resulting from cyclical movements of the Sun, Earth, and Moon. The student is expected to demonstrate and predict the sequence of events in the lunar cycle.		3	8.7B	R	2	5%	
26. Earth and space. The student knows characteristics of the universe. The student is expected to describe components of the universe, including stars, nebulae, and galaxies, and use models such as the Hertzsprung-Russell diagram for classification.		3	8.8A	S	1	3%	
27. Earth and space. The student knows characteristics of the universe. The student is expected to recognize that the Sun is a medium-sized star located in a spiral arm of the Milky Way galaxy and that the Sun is many thousands of times closer to Earth than any other star.		3	8.8B	R	1	3%	
28. Earth and space. The student knows that natural events can impact Earth systems. The student is expected to relate plate tectonics to the formation of crustal features.		3	8.9B	R	2	5%	
29. Earth and space. The student knows that natural events can impact Earth systems. The student is expected to interpret topographic maps and satellite views to identify land and erosional features and predict how these features may be reshaped by weathering.		3	8.9C	S	1	3%	
Item Types by Point	1-point questions (MC & TE Items)	30		Total	R	22	58%
	2-point questions (TE Items)	8			S	16	42%
	Total	46			All	38	100%

Note: R = Readiness Standard, S = Supporting Standard. Percentages are rounded to the nearest whole number.

- Reporting Categories:**
1. Matter and Energy
 2. Force, Motion, and Energy
 3. Earth and Space
 4. Organisms and Environments

Scientific Investigation and Reasoning Skills Eligible for Assessment

SE Descriptions	SE
1. Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards.	8.1A
2. Practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.	8.1B
3. Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology.	8.2A
4. Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology.	8.2B
5. Collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers.	8.2C
6. Construct tables and graphs, using repeated trials and means, to organize data and identify patterns.	8.2D
7. Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.	8.2E
8. Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.	8.3A
9. Use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature.	8.3B
10. Identify advantages and limitations of models such as size, scale, properties, and materials.	8.3C
11. Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.	8.3D
12. Use appropriate tools, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectrosopes, timing devices, and other necessary equipment to collect, record, and analyze information.	8.4A
13. Use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.	8.4B

DAN/STAAR Tech-Enhanced (TE) Items Comparison

DAN TE Item Type	Definition	STAAR TE Item Type
Multiple Choice (MC)	Requires students to select one correct answer from several answer choices.	Multiple Choice
Multiple Response (MR)	Requires students to select two or more correct answers from several answer choices.	Multiselect
Graphic Gap Match (GGM)	Requires students to drag and drop images into or next to the correct answer box(es).	Drag and Drop

Gap Match (GM)	Requires students to drag and drop words, phrases, or numbers into or next to the correct answer box(es).	Drag and Drop
Multipart (MP)	Requires students to answer a two-part question in which Part B provides text evidence for the answer in Part A. Part A and B can be a combination of Multiple Choice and Multiple Response items.	Multipart
Constructed Response (CR)	Student gives a brief explanation in their own words to demonstrate their understanding of content.	Short Constructed Response
Explicit Constructed Response (XCR)	Requires students to type an exact response which is then scored by the system. Answers must match the provided response exactly to be counted as correct.	Text Entry/Equation Editor