

Grade 8 Florida Statewide Science Assessment Sample Answers

This booklet contains answers to the Florida Statewide Science Assessment sample questions, as well as explanations for the correct answers and rationales for the incorrect answers (distractor rationales). It also gives the Next Generation Sunshine State Standards (NGSSS) benchmark assessed by each item. In February 2008, the State Board of Education adopted updated benchmarks. These new benchmarks are included in this booklet to provide teachers with additional information. For more information, follow this link to the NGSSS website:

<http://www.fldoe.org/accountability/assessments/k-12-student-assessment/science.stml>.

Multiple-choice items in Florida Statewide Science Assessments are scored by awarding one point for each correct answer.

The intent of these sample test materials is to orient teachers and students to the types of questions on Florida Statewide Science Assessments. By using these materials, students will become familiar with the types of items and response formats that they will see on the actual test. The sample questions and answers are not intended to demonstrate the length of the actual test, nor should student responses be used as an indicator of student performance on the actual test. Additional information about test items can be found in the *Test Item Specifications* at

<http://www.fldoe.org/accountability/assessments/k-12-student-assessment/science.stml>.

The sample questions for students and the sample answers for teachers are only available online at <http://www.fldoe.org/accountability/assessments/k-12-student-assessment/science.stml>.

- 1** The correct answer is B (by verifying that the substance is now made up of different molecules than before it was heated).

Reporting Category: The Nature of Science

Big Idea 1: The Practice of Science

Benchmark: SC.8.N.1.1 Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding; plan and carry out scientific investigations of various types, such as systematic observations or experiments; identify variables; collect and organize data; interpret data in charts, tables, and graphics; analyze information; make predictions; and defend conclusions.

Knowledge of the processes used in scientific investigations and an understanding of the data and/or methods necessary to defend a conclusion are needed to answer this question.

Distractor Rationales

- A. Melting is a physical change.
- C. Verifying that the substance is made of a single element is not enough to determine if a chemical change occurred.
- D. Density is a physical property.

2 The correct answer is G.

Reporting Category: Physical Science

Big Idea 12: Motion of Objects

Benchmark SC.6.P.12.1 Measure and graph distance versus time for an object moving at a constant speed. Interpret this relationship.

An understanding of the relationship between distance and time for an object in motion is needed to answer this question.

Distractor Rationales

- F. This graph represents Mr. Roberts’s car when it is stopped.
- H. This graph shows the time spent driving to be zero. The speed on this graph is undefined.
- I. This graph represents Mr. Roberts’s car moving toward the house.

3 The correct answer is D (M).

Reporting Category: Earth and Space Science

Big Idea 6: Earth Structures

Benchmark: SC.7.E.6.2 Identify the patterns within the rock cycle and relate them to surface events (weathering and erosion) and sub-surface events (plate tectonics and mountain building).

An understanding of weathering in the rock cycle is needed to answer this question.

Distractor Rationales

- A. Heating and melting occur at point J.
- B. Heat and pressure occur at point K.
- C. Layering and pressure occur at point L.

- 4** The correct answer is G (The speed and direction of the object will remain constant).

Reporting Category: Physical Science

Big Idea 13: Forces and Changes in Motion

Benchmark SC.6.P.13.3 Investigate and describe that an unbalanced force acting on an object changes its speed, or direction of motion, or both.

An understanding of how the forces acting on an object affect the object's speed and direction of motion is needed to answer this question.

Distractor Rationales

- F. The speed and the direction of the object do not change.
- H. The speed of the object does not change.
- I. The direction of the object does not change.

- 5** The correct answer is C (to confirm the results of the experiment conducted by the scientist).

Reporting Category: The Nature of Science

Big Idea 1: The Practice of Science

Benchmark: SC.6.N.1.2 Explain why scientific investigations should be replicable.

An understanding of the importance of replication in scientific investigations and experiments is needed to answer this question.

Distractor Rationales

- A. Weather conditions are not likely the reason scientists replicate an experiment.
- B. Although the ability to replicate an experiment may depend on cost, the importance of replication to the scientific process is not dependent on cost.
- D. Hypotheses are not scientific laws.

6 The correct answer is G (65 g).

Reporting Category: The Nature of Science

Big Idea 1: The Practice of Science

Benchmark: SC.8.N.1.1 Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding; plan and carry out scientific investigations of various types, such as systematic observations or experiments; identify variables; collect and organize data; interpret data in charts, tables, and graphics; analyze information; make predictions; and defend conclusions.

An understanding of interpreting data from a graph and making predictions based on the data is necessary to answer this question.

Distractor Rationales

- F. Forty grams (40 g) would be the prediction for how many grams of the compound will dissolve at approximately 25°C.
- H. Eighty-five (85 g) grams would be the prediction for how many grams of the compound will dissolve at approximately 50°C.
- I. One hundred grams (100 g) would be the prediction for how many grams of the compound will dissolve at approximately 57°C.

7 The correct answer is A (to recycle nutrients into soil).

Reporting Category: Life Science

Big Idea 17: Interdependence

Benchmark: SC.7.L.17.1 Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

An understanding of the role of decomposers in a food web is needed to answer this question.

Distractor Rationales

- B. Decomposers do not convert solar energy into food. This is the role of the producer.
- C. Decomposers are not the primary food source for secondary consumers.
- D. Decomposers do not compete with secondary consumers for oxygen.

8 The correct answer is G (release of fresh water into ocean water as icebergs melt).

Reporting Category: Earth and Space Science

Big Idea 7: Earth Systems and Patterns

Benchmark: SC.6.E.7.4 Differentiate and show interactions among the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere.

An understanding of the interactions between the cryosphere and the hydrosphere is needed to answer this question.

Distractor Rationales

- F. Evaporation is an interaction between the hydrosphere and the atmosphere.
- H. The decomposition of organic matter at the bottom of oceans is an interaction between the biosphere and the hydrosphere.
- I. Icebergs contain little or no salt.

- 9** The correct answer is C (heating by energy from the Sun).

Reporting Category: Earth and Space Science

Big Idea 7: Earth Systems and Patterns

Benchmark: SC.6.E.7.5 Explain how energy provided by the Sun influences global patterns of atmospheric movement and the temperature differences between air, water, and land.

Knowledge of how energy provided by the Sun influences atmospheric movement is needed to answer this question. Solar energy is the main source of energy for thunderstorms.

Distractor Rationales

- A. Movement of ocean currents is not the main source of energy for thunderstorms.
- B. A decrease in relative humidity does not provide energy to a thunderstorm.
- D. Warming in the upper atmosphere does not provide energy to a thunderstorm. Thunderstorms are formed in the lower atmosphere.

- 10** The correct answer is H (Substance Y would have less mass than substance Z would have if they had the same volume).

Reporting Category: Physical Science

Big Idea 8: Properties of Matter

Benchmark: SC.8.P.8.4 Classify and compare substances on the basis of characteristic physical properties that can be demonstrated or measured; for example, density, thermal or electrical conductivity, solubility, magnetic properties, melting and boiling points; and know that these properties are independent of the amount of the sample.

An understanding of the relationships among the physical properties of objects is needed to answer this question. The density of an object depends on its mass and volume.

Distractor Rationales

- F. The mass of substance X and the mass of substance Y cannot be determined from the graph if the volume of each substance is not known.
- G. The volume of substance W and the volume of substance X cannot be determined from the graph if the mass of each substance is not known.
- I. Substance Z has a greater mass per volume than substance W; therefore, the mass of substance Z would be greater than substance W if they each had equal volumes.



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