

# Grade 5

## FCAT 2.0 Science

### Sample Answers

This booklet contains answers to the FCAT 2.0 Science 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.floridastandards.org/index.aspx>.

Multiple-choice items in FCAT 2.0 Science tests 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 FCAT 2.0 tests. 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 *FCAT 2.0 Test Item Specifications* at <http://fcat.fldoe.org/fcat2/itemspecs.asp>.

The sample questions for students and the sample answers for teachers are only available online, at <http://fcat.fldoe.org/fcat2/fcatitem.asp>.

**1** The correct answer is A (The balloons will move apart).

Reporting Category: Physical Science

Big Idea 10: Forms of Energy

Benchmark SC.5.P.10.3 Investigate and explain that an electrically-charged object can attract an uncharged object and can either attract or repel another charged object without any contact between the objects.

An understanding of the behavior of charged and uncharged objects is needed to answer this question.

#### **Distractor Rationales**

- B. Neither balloon will lose its charge.
- C. The balloons will not come together.
- D. Neither balloon will change its charge.

- 2** The correct answer is I (an elevator transporting supplies from one floor to another).

Reporting Category: Life Science

Big Idea 14: Organization and Development of Living Organisms

Benchmark: SC.3.L.14.1 Describe structures in plants and their roles in food production, support, water and nutrient transport, and reproduction.

An understanding of the functions of plant structures is needed to answer this question.

### Distractor Rationales

- F. The stem does not hold a plant in place. The roots of a plant hold a plant in place, similar to an anchor holding a boat in place.
- G. The stem does not produce energy for the plant. Plants get energy from food they produce using air, water, and energy from the Sun.
- H. The stem does not attract insects to the plant. The flower attracts insects to the plant.

- 3** The correct answer is **B (Formed by pressure and heat over time)**.

Reporting Category: Earth and Space Science

Big Idea 6: Earth Structures

Benchmark: SC.4.E.6.1 Identify the three categories of rocks: igneous (formed from molten rock); sedimentary (pieces of other rocks and fossilized organisms); and metamorphic (formed from heat and pressure).

An understanding of the three types of rocks and how they are formed is needed to answer this question.

#### **Distractor Rationales**

- A. This rock is not a metamorphic rock; it is an igneous rock.
- C. This rock is not a metamorphic rock; it is an igneous rock.
- D. This rock is not a metamorphic rock; it is a sedimentary rock.

**4** The correct answer is G (Bar Magnet).

Reporting Category: Physical Science

Big Idea 8: Properties of Matter

Benchmark: SC.5.P.8.3 Demonstrate and explain that mixtures of solids can be separated based on observable properties of their parts such as particle size, shape, color, and magnetic attraction.

An understanding of how to separate solids based on their physical properties is needed to answer this question.

**Distractor Rationales**

- F. Although a hand lens could be used to better see the sand particles and iron filings, it would not physically separate the iron filings from the sand.
- H. A test tube cannot be used to separate iron filings from sand.
- I. An eyedropper cannot be used to separate iron filings from sand.

**5** The correct answer is A (hail).

Reporting Category: Earth and Space Science

Big Idea 7: Earth Systems and Patterns

Benchmark: SC.5.E.7.4 Distinguish among the various forms of precipitation (rain, snow, sleet, and hail), making connections to the weather in a particular place and time.

An understanding of the different forms of precipitation and the weather conditions that can produce each type of precipitation is needed to answer this question. Hail forms higher in the atmosphere where the temperature is below freezing even though the surface temperature is above freezing.

#### Distractor Rationales

- B. Rain is a liquid form of precipitation.
- C. Although sleet is a solid form of precipitation, it occurs when the air temperature at the surface is below freezing.
- D. Although snow is a solid form of precipitation, it occurs when the air temperature is near or below freezing.

**6** The correct answer is F (spore-producing plants with many leaves).

Reporting Category: Life Science

Big Idea 15: Diversity and Evolution of Living Organisms

Benchmark: SC.3.L.15.2 Classify flowering and nonflowering plants into major groups such as those that produce seeds, or those like ferns and mosses that produce spores, according to their physical characteristics.

An understanding of the physical characteristics of flowering and nonflowering plants is needed to answer this question. All flowering plants and some nonflowering plants produce seeds. Other nonflowering plants, such as ferns, reproduce by using spores.

#### Distractor Rationales

- G. This plant does not produce fruit on its leaves. Fruit is associated with seed-bearing plants, and this plant has spores.
- H. This plant does not carry seeds on its leaves. Seeds are not carried on the leaves of a plant.
- I. This plant does not have seeds; flowering plants have seeds. Therefore, this plant is not a flowering plant.

- 7** The correct answer is D (Rocks are moved from one place to another).

Reporting Category: Earth and Space Science

Big Idea 6: Earth Structures

Benchmark: SC.4.E.6.4 Describe the basic differences between physical weathering (breaking down of rock by wind, water, ice, temperature change, and plants) and erosion (movement of rock by gravity, wind, water, and ice).

An understanding of the events that cause physical weathering and the events that cause erosion is necessary to answer this question. Physical weathering is a breakdown of rock caused by wind, water, ice, temperature change, or plants. Erosion is the movement of rock caused by gravity, wind, water, or ice.

#### Distractor Rationales

- A. Neither erosion nor weathering influences the formation of rocks underground.
- B. Rocks can also become smooth and round by weathering. Rocks on a riverbed can become smooth because of water flowing over them.
- C. Rocks can be broken into smaller pieces by weathering and not be moved from one place to another.



- 8** The correct answer is H (Comets are made mostly of ice, and asteroids are made mostly of rocks).

Reporting Category: Earth and Space Science

Big Idea 5: Earth in Space and Time

Benchmark SC.5.E.5.3 Distinguish among the following objects of the Solar System—Sun, planets, moons, asteroids, comets—and identify Earth’s position in it.

An understanding of the characteristics of the objects in our Solar System is needed to answer this question.

#### Distractor Rationales

- F. Both comets and asteroids orbit the Sun. The orbits of comets are more elongated than the orbits of asteroids.
- G. Comets are made mostly of rocks, dust, ice, and frozen gases. Asteroids are made from a collection of minerals and irregularly shaped rocks.
- I. Comets do not orbit between Mars and Jupiter. Most asteroids in our Solar System orbit the Sun between Mars and Jupiter and do not form patterns in the sky.

**9** The correct answer is A (crab).

Reporting Category: Life Science

Big Idea 15: Diversity and Evolution of Living Organisms

Benchmark SC.3.L.15.1 Classify animals into major groups (mammals, birds, reptiles, amphibians, fish, arthropods, vertebrates and invertebrates, those having live births and those which lay eggs) according to their physical characteristics and behaviors.

An understanding of how to classify vertebrates and invertebrates based on their characteristics is necessary to answer this question.

#### **Distractor Rationales**

- B.** The fish is not an invertebrate because it has a backbone.
- C.** The manatee is not an invertebrate because it has a backbone.
- D.** The turtle is not an invertebrate because it has a backbone.

**10** The correct answer is I (white).

Reporting Category: Nature of Science

Big Idea 1: The Practice of Science

Benchmark: SC.5.N.1.1 Define a problem; use appropriate reference materials to support scientific understanding; plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, and interpreting data in charts, tables, and graphics; analyze information; make predictions; and defend conclusions.

An understanding of how to design a scientific investigation and of how to interpret data is needed to answer this question.

**Distractor Rationales**

- F. The red light did not provide the greatest amount of energy because the radiometer did not spin for the longest amount of time.
- G. The green light did not provide the greatest amount of energy because the radiometer did not spin for the longest amount of time.
- H. The blue light did not provide the greatest amount of energy because the radiometer did not spin for the longest amount of time.



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