

# Instructional Guidance based on Student Performance on the Spring 2014 Science Tests

Science  
Standards of Learning

Grade 5 Science



Presentation may be paused and resumed using the arrow keys or the mouse.

# Grade 5 Science: Areas Needing Improvement

## Observations, conclusions, inferences and predictions

- Identifying and distinguishing between observations, conclusions, inferences, and predictions (SOL 4.1a, 4.1e, 5.1h, 5.1i)

Resource: [Practices for Science Investigation Progression](#)

# Grade 5 Science Example Item



Photo Credit: [Mark Bohn/USFWS](#)

A student observed this hawk. The student made an inference that the hawk-

- A. has brown and white feathers
- B. uses its talons to catch small animals
- C. is getting ready to fly
- D. is perched in the tree

# Grade 5 Science Example Item



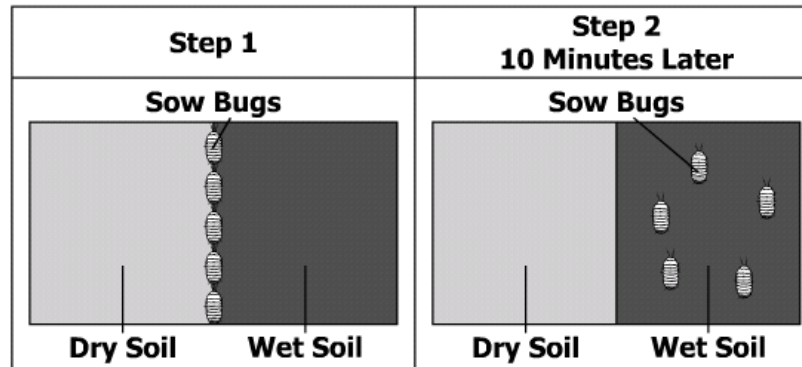
Snow Storm image by [Peter Griffin](#) for use in the [Public Domain](#)

**A student looked out of his bedroom window on Monday morning and saw what is shown in this picture. Which of the following statements is a prediction the student made based on what he saw?**

- A. It is still snowing.**
- B. There will be no school today.**
- C. There is snow on the roof and on the car.**
- D. It is below 32 °F.**

# Grade 5 Science Example Item

Sow Bug Investigation



Label each statement as an observation, prediction, or inference.

When the wet soil dries, the sow bugs will move off of that side.

Prediction

All of the sow bugs were on the wet soil side after 10 minutes passed.

Observation

Sow bugs are most likely found in wet soil in the environment.

Inference

Observation

Prediction

Inference

# Grade 5 Science: Areas Needing Improvement

## The Earth-moon-sun system

- Identifying the causes for Earth's seasons and for the phases of the moon (SOL 4.8)

# Grade 5 Science Example Item

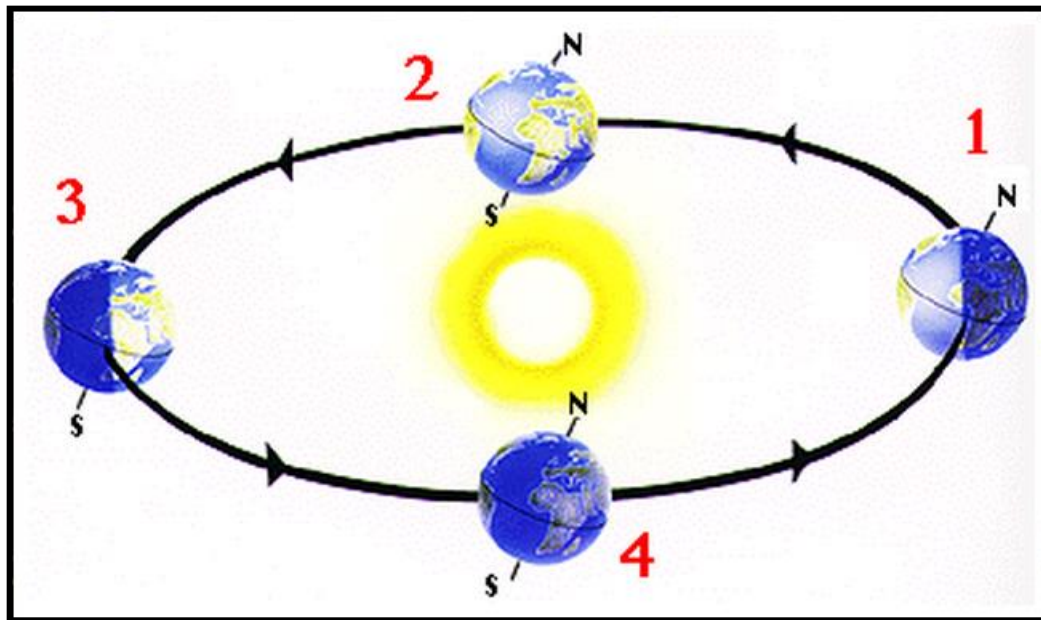


Image Courtesy of: NASA

What season would it be in the Northern Hemisphere at position 3?

- A. Spring
- B. **Summer**
- C. Autumn
- D. Winter

# Grade 5 Science Example Item



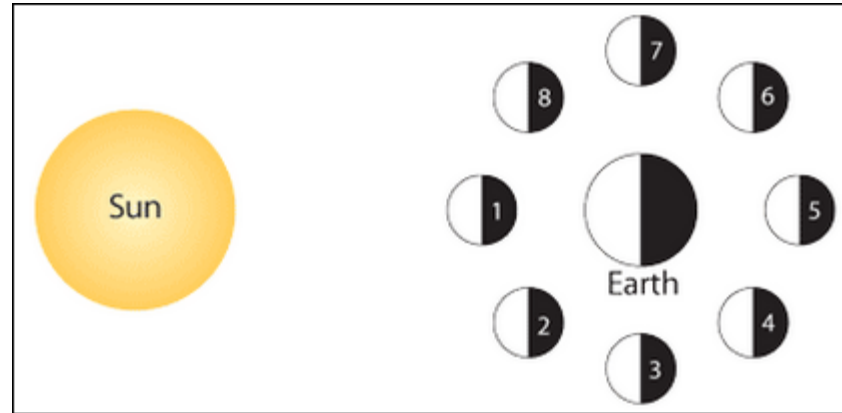
Image courtesy of [NASA/JPL-Caltech](https://www.nasa.gov/jpl-caltech)

An Earth-moon-sun model is shown in the picture. The moon is directly between Earth and the sun. The half of the moon facing the sun is lit. The half of the moon facing Earth is not lit. This phase of the moon is called-

- A. waxing gibbous
- B. first quarter
- C. a full moon
- D. a new moon



## Grade 5 Science Example Item



From Earth, what phase would the moon be in at position 7?

- A. Full moon
- B. New moon
- C. First quarter
- D. Last quarter

# Grade 5 Science: Areas Needing Improvement

## Atoms, elements, molecules

- Distinguishing between atoms, elements, molecules, and compounds (SOL 5.4c, 5.4d)

# Grade 5 Science Released Item

Substances

| Compounds      | Elements |
|----------------|----------|
| Carbon dioxide | Silver   |
| Sugar          | Oxygen   |
| ?              | Iron     |

Which material will correctly complete the chart?

- A Gold, because it is a shiny metal
- B Salt, because it is made of two types of atoms
- C Nitrogen, because it is a gas in the atmosphere
- D Carbon, because it is part of many different molecules

## Grade 5 Science Example Item

**A large balloon and a small balloon are both filled with helium. Which statement describes the helium in the balloons?**

- A. The helium in the large balloon contains the same number of molecules as the helium in the small balloon.**
- B. The helium in the large balloon has larger atoms than the helium in the small balloon.**
- C. The helium in both balloons is made up of the same type of atoms.**
- D. The helium in both balloons is made up of three different gases.**

## Practice Items

This concludes the student performance information for the spring 2014 Grade 5 Science SOL test.

Additionally, test preparation **practice items** for the test can be found on the Virginia Department of Education Web site at:

<https://www.doe.virginia.gov/teaching-learning-assessment/student-assessment/sol-practice-items-all-subjects>

## Contact Information

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