Characteristics of Scientific Knowledge: SC.5.N.2.1:

1) For her science fair project, Marcy is investigating how levels of carbon dioxide affect plant growth. Which of the following is most important for Marcy to do?

A. She needs to make sure her results match her predictions.
B. She needs to make sure that her results contain both words and numbers.
C. She needs to make sure that the explanation of her results is based on evidence.
D. She needs to make sure her results get published so that everyone can read them.

2) Which of the following must be true for scientific results to be valid?

☐ A. The results should be drawn in a graph.
☐ B. The results should be based on evidence.
☐ C. The results should support the ideas of other scientists.
☐ D. The results should match the predictions of the scientist.

3) Kyle completes his science project for his 5th grade teacher by carrying out a scientific investigation. Which statement about Kyle's investigation is true?

☐ A. Kyle's investigation must include observation and evidence.
☐ B. Kyle must have an investigation with steps that follow a set pattern.
☐ C. Kyle's project is valid only if the teacher personally likes the results.
☐ D. Kyle must include all the steps of the scientific method for his results to be valid.

4) When conducting an investigation, a scientist's main goal should be which of the following?

☐ A. The scientist should include his opinions in the results.
☐ B. The scientist should aim to become famous for his work.
☐ C. The scientist should follow a very specific scientific method.
☐ D. The scientist should aim to answer questions about the natural world.
5) Which of the following questions could be answered by a scientific investigation?
☐ A. What color is the best to paint with?
☐ B. What animal makes a good pet?
☐ C. What is the best flavor of soft drink?
☐ D. What causes some metals to rust?

6) Jose wants to create an excellent science fair project for the school competition. In order for his project to be valid, which of the following must happen?
☐ A. The project must include his beliefs.
☐ B. The results must be based on evidence.
☐ C. The project must prove his predictions correct.
☐ D. The results must be based on personal opinion.

7) Which of the following statements about science is true?
☐ A. Science always contains the opinions of the investigator.
☐ B. Science proves the predictions of scientists to be correct.
☐ C. Science is based on observation or measurement that answers a question.
☐ D. Science answers all questions using strict rules called the scientific method.

8) Which of the following is the main purpose of a scientific investigation?
☐ A. to prove a scientific law
☐ B. to determine the investigator's opinion
☐ C. to answer questions about the natural world
☐ D. to support results from previous investigations
9) Which of the following should be a goal of a scientific investigation?

☐ A. to help the scientist make money

☐ B. to make sure the scientist is correct

☐ C. to help the scientist solve a problem

☐ D. to make sure other scientists are incorrect

10) Ellie conducts an investigation to determine if size or weight affect how fast objects fall. Her investigation includes repeatedly dropping a basketball and a golf ball at the same time. After many trials, she determines that both balls land at the exact same time.

Why would Ellie's investigation be valid?

☐ A. It includes her opinion.

☐ B. It is based on evidence.

☐ C. It uses objects that move.

☐ D. It proves her predictions are correct.