

**THE NATURE OF SCIENCE**

## Additional FCAT Practice Questions

Directions: Select the best answer for each of the following questions

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1. In science class Tania learned that certain colors absorb energy better than others. She decided to do an experiment to test which color of shirt would be the coolest to wear on a sunny day. She laid three different colored shirts on the basketball court outside the school, and placed a clear glass dish of water on each. She decided to measure the temperature of each dish of water every 10 minutes for one hour while the sun was shining.



If Tania completes her experiment correctly, what will she do every time she measures the temperature of the water in the dishes?

- A. She should guess the temperature of the water ten minutes later.
- B. She should add more water if some has disappeared.
- C. She should write down the temperature in her notebook.
- D. She should decide if her results are right, and start again if they are wrong.

2. To determine how friction affects the motion of an object, Mr. Schneider's science class conducted an experiment. They measured the force necessary to slide the objects along a wooden table.

According to the scientific method, what steps could the class then complete to correctly determine how much friction affects the motion of an object?

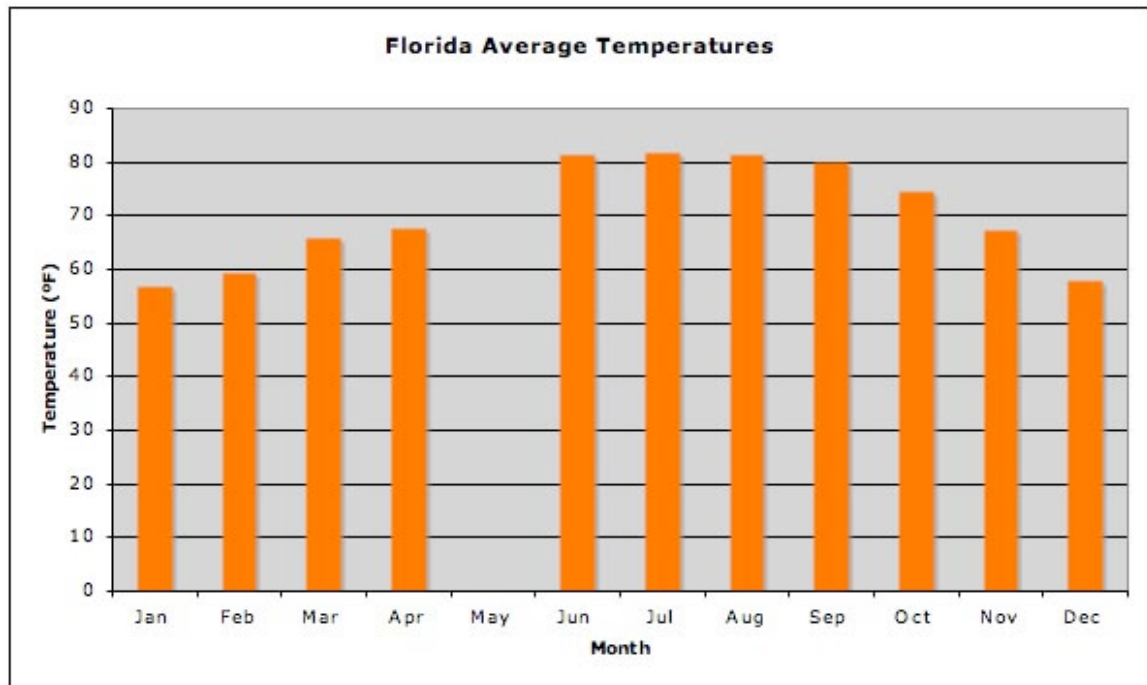
- A. Test the same objects using the same method, but on a different surface such as sandpaper.
  - B. Have another group of students test the same objects using the same method on the same wooden table.
  - C. Test different objects using the same method, but on a different surface such as sandpaper.
  - D. Have the same group of students test different objects using the same method on the same wooden table.
3. Emily designed an experiment to determine how insects might adapt to their environment to avoid predators. Her materials were 100 paper clips (20 each of green, red, yellow, pink and blue), a one-square-meter section of the school's football field, and a stopwatch. She then had her classmates take turns trying to collect as many paper clips of each color as they could in 15 seconds from the section of the field. She recorded her results and discovered the green paper clips were the most difficult to find, since they were camouflaged in the grass.



What concept does this activity represent?

- A. classifying materials helps to compare groups
- B. using a model can help to understand real life
- C. creating a hypothesis can be used to study a cause and affect relationship
- D. by controlling variables, it is easy to form accurate conclusions

4. According to this graph, what is the most likely average temperature in Florida during the month of May?



- A. 61 °F  
B. 43 °F  
C. 84 °F  
D. 76 °F
5. Ms. Martinez asked her class to design an experiment that would determine how long it takes ice to melt under different weather conditions (such as calm, sunny or windy). Which of the following is required to ensure that the experiment is valid?
- A. a different amount of ice should be used for each weather condition  
B. the experimental procedure should be repeated at least three times  
C. the results of the experiment should be put on a graph  
D. each test should be done at a different temperature

## Answers

1. C
2. A
3. B
4. D
5. B