

## The Nature of Science FCAT Learning Goals

### The Practice of Science

- Evaluate a scientific investigation using evidence of scientific thinking and/or problem solving.
- Identify test variables (independent variables) and/or outcome variables (dependent variables) in a given scientific investigation.
- Interpret and/or analyze data to make predictions and/or defend conclusions.
- Distinguish between an experiment and other types of scientific investigations where variables cannot be controlled.
- Explain how hypotheses are valuable.
- Describe and/or analyze common methods and/or models used in different fields of study.
- Identify the benefits and/or limitations of the use of scientific models.
- Identify how technology is essential to science.

### The Characteristics of Scientific Knowledge

- Explain why scientific knowledge may change as new evidence is discovered or new scientific interpretations are formed.
- Explain that scientific explanations are based on empirical evidence, logical reasoning, predictions, and modeling.
- Identify instances in the history of science in which scientific knowledge has changed as a result of new evidence.

### The Role of Theories, Laws, Hypotheses, and Models

- Explain the difference between theories and laws. (identify examples of theories and/or laws)
- Explain why theories may be modified but are rarely discarded.
  - Examples: law of universal gravitation, law of superposition, theory of plate tectonics, atomic theory, law of conservation of mass, law of conservation of energy, cell theory, and the scientific theory of evolution

# FCAT REVIEW MENU

## The Nature of Science

Directions: Choose from the activities in the menu below. The activities must total 10 points. Place a checkmark next to each box to show which activities you completed. Staple your work to this page and complete by \_\_\_\_\_.



### 1 Point

- Listen to a song on the FCAT review website. Write the chorus.
- Play a game on the FCAT review website. Keep track of your score.



### 2 Points

- Watch a video on the FCAT review website. Write down 3 vocabulary words (with definitions) and 1 main idea.
- Watch a Bill Nye video on the FCAT review website. Summarize 3 sections of the video (ex. Nye labs, Consider the following, song.)



### 3 Points

- Watch a Brain Pop on the FCAT review website. Complete the quiz.
- Read an article on the FCAT review website. Write down 3 vocabulary words (with definitions) and 1 main idea.