

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_



Warrior Pledge: I have neither given nor received help on this assignment.

Signature: \_\_\_\_\_

### Part I. Force, Motion, and Energy

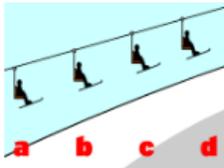
1. Which of the following is an example of an **energy transformation**?

- A. solar energy entering Earth's atmosphere
- B. chemical energy inside a battery
- C. electrical energy turning into light and heat energy
- D. a solar panel

2. Which of the following has the ***MOST*** kinetic energy?

- A. a baseball on the top of a mountain
- B. a baseball moving at 90mph
- C. a truck on top of a mountain
- D. a truck moving at 110mph

3. Which of the passengers has the **MOST** potential energy?



- A. a
- B. b
- C. c
- D. d

4. Which of the following is ***NOT*** an example of a renewable resource?

- A. sunlight
- B. oil
- C. wind
- D. water

5. Recall that during the glow stick lab, we made several observations about light energy. Which of the following is the best conclusion about how glow sticks work?

- A. mechanical energy causes the glow sticks to release light energy
- B. chemical energy changes into light and heat energy
- C. potential energy stored in the glow stick released kinetic energy
- D. electrical energy was released from the glow stick causing it to light up

6. Explain the difference between kinetic and potential energy using examples of kinetic and potential energy.

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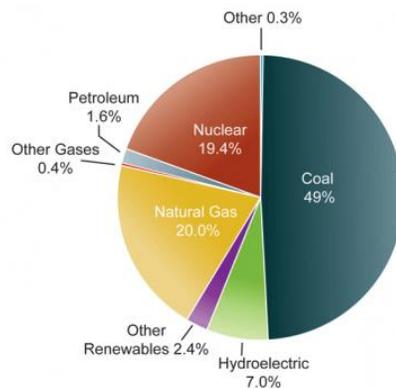
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7. Which of the following is true about the Greenhouse Effect?

- a. methane, carbon dioxide, and nitrous oxide are greenhouse gases
- b. sunlight entering Earth's atmosphere can become trapped by greenhouse gases
- c. without the Greenhouse Effect, Earth would be too cold to support life
- d. All of the above are true about the Greenhouse Effect

For question 8, use the following graph which shows current energy sources in the United to answer the question.



8. **Circle one.** True/False. The US uses non-renewable energy sources more than any energy type.

9. What is the primary source of non-renewable resources?

- A. water
- B. the sun
- C. wind
- D. coal

10. **Circle one.** True/False. Renewable energy sources like water and wind are better for our environment because they do not cause pollution or add to the Greenhouse Effect.

## Part II. Scientific Investigation, Reasoning, and Logic

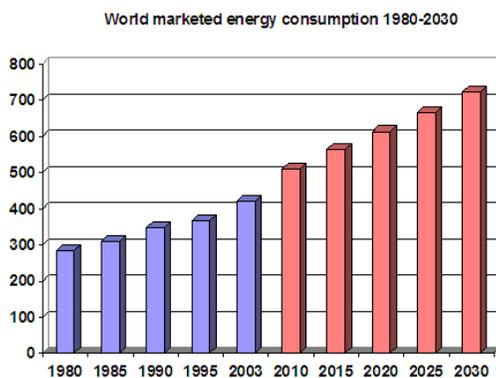
11. What do you need to do BEFORE you start an experiment?

- A. make an observation
- B. collect and analyze data
- C. make a conclusion
- D. design an experiment

Examine the picture then circle "True" or "False" for questions 12-15.



12. True/False. There are three cats is an inference.
13. True/False. The cats are looking through the window is an observation.
14. True/False. The man is experimenting on mice is an inference.
15. True/False. The cats are going to eat the mice is a prediction.
16. If energy consumption of non-renewable resources continues at this alarming rate, what do you predict will happen?

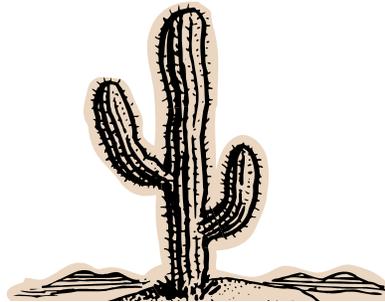


My Prediction:

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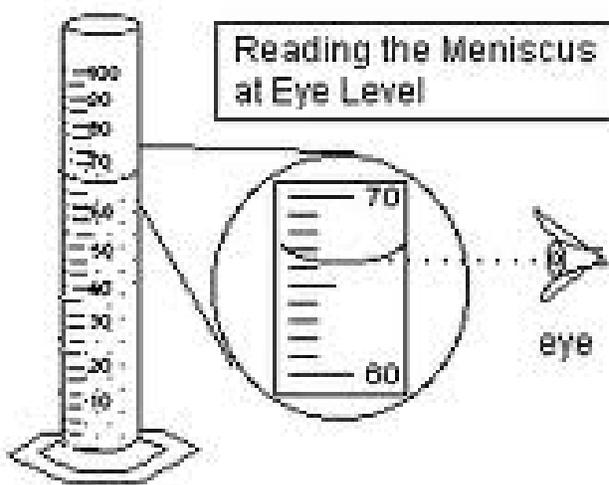
17. Which statement is correct regarding independent and dependent variables?
  - A. an independent variable changes as a result of the dependent variable
  - B. a dependent variable remains constant and the independent variable changes
  - C. an independent variable is the same as a control
  - D. an independent variable is the variable you change on purpose

18. What is the approximate height of the picture of the cactus?



- A. 4 kilometers
- B. 6 centimeters
- C. 1 inch
- D. 24 meters

19. What is the volume of liquid in the graduated cylinder? *Don't forget your unit!* \_\_\_\_\_



20. After scientists analyze the results of their experiments, they \_\_\_\_\_.

- A. form hypotheses
- B. include a control
- C. communicate their results to other people
- D. choose the variables they want to test