

## Energy in the Earth's Atmosphere- Study Guide (25 Points)

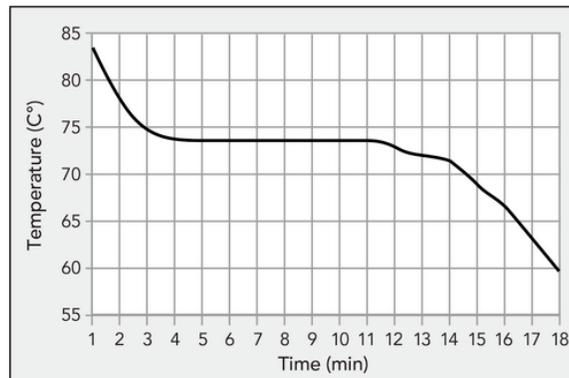
Test Date: Tuesday 3/5/2019 Study Guide Due: Tuesday 3/5/2019

1. Which of the following statements explains the energy budget on Earth?
  - A. Most energy is made into food by plants.
  - B. Earth's surface absorbs and re-emits equal amounts of energy.
  - C. Earth's surface reflects more energy than the atmosphere.
  - D. The atmosphere absorbs more energy than Earth's surface.
  
2. What type of heat transfer takes place from the sun to Earth?
  - A. convection
  - B. conduction
  - C. expansion
  - D. radiation

*Circle the phrases that correctly complete the paragraph.*

3. The greenhouse effect supports life on Earth. It is caused when energy from the sun is (**absorbed by oceans / trapped by the atmosphere / reflected by the atmosphere / reflected from Earth**). If the concentration of carbon dioxide gas continues to increase, it will cause (**temperatures to increase / temperatures to decrease / sea levels to decrease / increased glaciers**) on Earth.
  
4. As an experiment, Bertie made wax candles. He used a heat transfer process to melt the wax in a pot on the stove. Throughout the candle-making experiment, he took several measurements. He used the data to construct a graph showing the temperature change of a sample of wax. Which two items describe what is happening to the wax sample over time?

- A. Temperature is increasing.
- B. Temperature is decreasing.
- C. Thermal energy is increasing.
- D. Thermal energy is decreasing.



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5. There are several ways to transfer heat to cook food. Read each example in the word bank of how heat is transferred in the kitchen. Use the graphic organizer to classify phrase into the correct column.

- boils water • melts butter in a hot pan • microwaves chocolate cake • heats a tortilla in a pan on the stove • toasts a marshmallow over an open flame  
 • heats apple cider until steam rises from the pot

Conduction	Convection	Radiation

6. Name the 4 layers of the atmosphere from the bottom to the top. Describe each layer in your own words.
  
7. Define atmosphere and Give 3 examples of what the atmosphere does for the earth
  
8. List the composition of the atmosphere and the percentage of each gas.
  
9. Which gas is used by green plants?
10. Which gas is produced by green plants?
11. Using vocabulary words, explain why your ears pop as you start to descend in an airplane.
12. Atmospheric pressure \_\_\_\_\_ with an increase in altitude.
13. The density of the atmosphere \_\_\_\_\_ with a decrease in altitude.
14. List 3 ways that solar radiation is sent back into space

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15. Name 4 types of clouds and draw a picture of each

16. What layer of the atmosphere is the ozone layer found? Describe how the ozone layer protects the earth

17. Which layer of the atmosphere would the space shuttle orbit?

18. In what layer of the atmosphere does weather occur?

19. What layer is known as the "heat layer"?

20. Use the following words to talk about water vapor in the atmosphere.

HUMIDITY, DEW Point, Clouds, Condense, Water Cycle