

Name _____ Class _____ Date _____

Skills Worksheet

Directed Reading

Section: Atmospheric Moisture

1. The states in which water exists in the atmosphere are called _____.

2. The gas phase of water is called _____.

3. The solid phase of water is called _____.

4. The liquid phase of water is called _____.

CHANGING FORMS OF WATER

5. When does water change from one phase to another?
a. when water molecules are held stationary
b. when evaporation occurs
c. when heat energy is absorbed or released
d. when molecules are in a crystalline arrangement

6. When ice absorbs energy, the molecules of ice
a. move more quickly.
b. become stationary.
c. become crystals.
d. slow down.

7. What phase does ice change into when it absorbs energy?
a. gas
b. liquid
c. crystals
d. solid

8. When liquid water absorbs energy, it changes to
a. a gas.
b. a liquid.
c. crystals.
d. a solid.

9. What happens to the water molecules when the water absorbs energy?
a. They move closer together.
b. They collide more frequently.
c. They become stationary.
d. They move more slowly.

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10. The process in which the fastest-moving molecules escape from liquid and form invisible water is called
a. condensation.
b. latent heat.
c. evaporation.
d. collision.

11. The name for heat energy that is absorbed or released during a phase change is
a. latent heat.
b. evaporation.
c. water vapor.
d. potential energy.

12. When liquid water evaporates, the water
a. releases energy into the atmosphere.
b. condenses into water vapor.
c. starts to flow more rapidly.
d. absorbs energy from the environment.

13. What happens to energy absorbed by water during evaporation?
a. It condenses to form a liquid.
b. It melts ice.
c. It is reflected into the atmosphere.
d. It becomes potential energy between water molecules.

14. The name for the process in which water vapor changes back into a liquid is
a. condensation.
b. latent heat.
c. collision.
d. evaporation.

15. During the condensation of water, latent heat
a. is released into the water.
b. disappears.
c. is released into the surrounding air.
d. is absorbed by the water.

16. What happens to latent heat when ice thaws?
a. It is released.
b. It is absorbed.
c. It is recycled.
d. It is lost.

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- _____ 17. When water freezes, latent heat
a. condenses.
b. is released into the air.
c. evaporates
d. is absorbed.
- _____ 18. Through what process does most water enter the atmosphere?
a. evaporation
b. absorption
c. condensation
d. release
19. Where on Earth does most evaporation take place?

20. Name four other important sources of water vapor in the atmosphere.

- 21 How are plants, volcanoes, and burning fuels related to water vapor in the atmosphere?

23. What is the name of the process in which a solid changes directly into a gas?

24. Under what conditions might sublimation of snow and ice occur?

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Directed Reading *continued*

HUMIDITY

In the space provided, write the letter of the definition that best matches the term or phrase.

- _____ 26. humidity a. the temperature at which condensation equals evaporation
- _____ 27. dew point b. water vapor in the atmosphere
- _____ 28. absolute humidity c. the mass of water vapor contained in a given volume of air
- _____ 29. mixing ratio d. the mass of water vapor in a unit of air relative to the mass of the dry air
30. What controls humidity?

31. What determines the rate of evaporation?

32. What happens to the rate of evaporation as the temperature gets higher?

33. What determines the rate of condensation?

35. When there is equilibrium between the rate of evaporation and the rate of condensation, the air is _____.
36. The measure of the actual amount of water vapor in the air is called the _____.
42. The ratio of the actual water vapor content of the air to the amount of water vapor needed to reach saturation is called _____.
43. If a person wanted to know how close the air is to reaching the dew point, he or she would calculate the _____.
46. What can make the relative humidity change even if the temperature does not change?

47. What can make the relative humidity increase if the moisture in the air remains the same?

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48. What happens to the relative humidity if the temperature increases as the moisture in the air remains constant?

49. What can cause air to cool to its dew point?

50. What is the name of the condensation that forms during the night?

51. What causes dew to form?

HUMIDITY

In the space provided, write the letter of the definition that best matches the term or phrase.

- | | |
|----------------------------------|---|
| _____ 55. dew cell | a. an instrument used to measure relative humidity consisting of two identical thermometers |
| _____ 56. electrical conductance | b. the ability to conduct electricity |
| _____ 57. psychrometer | c. an instrument used to measure humidity consisting of a heater and two electrodes |

58. Why do meteorologists measure humidity?

59. What happens when the lithium chloride in a dew cell absorbs water from the air?

60. What happens as the water evaporates from the LiCl?

61. The temperature at which the LiCl in a dew cell loses its ability to conduct electricity is the _____.

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62. What is the difference between the two thermometers of a psychrometer?

64. How does the temperature of the wet-bulb thermometer differ from that of the dry-bulb thermometer after the psychrometer is whirled through the air?

In the space provided, write the letter of the definition that best matches the term or phrase

- | | |
|-------------------------------|---|
| _____ 66. hair hygrometer | a. an instrument that measures humidity at high altitudes |
| _____ 67. radiosonde | b. an instrument that measures relative humidity by using a bundle of hairs |
| _____ 68. electric hygrometer | c. a package that carries instruments into the atmosphere |

69. As relative humidity increases, what happens to hair?