

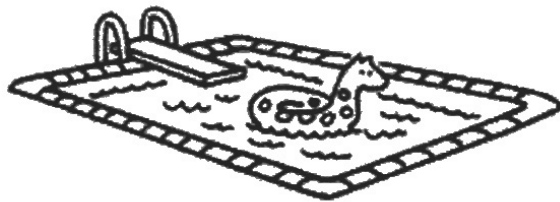
Chapter 1 Matter STUDY GUIDE

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- _____ 1. What happens to water when it reaches 100 degrees Celsius?
Ⓐ It condenses.
Ⓑ It freezes.
Ⓒ It boils.
Ⓓ It melts.
- _____ 2. Which of the following statements about liquids and gases is true?
Ⓐ They both have particles that are tightly packed.
Ⓑ They both have a definite volume.
Ⓒ They both take the shape of their containers.
Ⓓ They both have a definite shape.
- _____ 3. The particles of a gas
Ⓐ have a lot of space between them.
Ⓑ move freely.
Ⓒ bounce off one another as they move.
Ⓓ All of the other answer choices
- _____ 4. Which state of matter has a shape of its own?
Ⓐ Liquid
Ⓑ Gas
Ⓒ Solid
Ⓓ All of the other answer choices
- _____ 5. What property would a baseball and a globe **always** have in common?
Ⓐ Size
Ⓑ Texture
Ⓒ Shape
Ⓓ Color
- _____ 6. In which example is heat transferred by convection?
Ⓐ Ice cooling the outside of a glass
Ⓑ A spoon being warmed by hot oatmeal
Ⓒ Water being warmed in a pan on a stove
Ⓓ An empty pan being heated by a flame on a stove

- _____ 7. Ice melting into water is a change between which two states of matter?
- (a) Gas to liquid
 - (b) Liquid to solid
 - (c) Solid to liquid
 - (d) Liquid to gas
- _____ 8. How is heat transferred during conduction?
- (a) When two objects touch, heat flows from the warmer object to the cooler object.
 - (b) When two objects touch, there is an even exchange of heat between them.
 - (c) When two objects touch, heat flows from the cooler object to the warmer object.
 - (d) None of the other answer choices
- _____ 9. Look at the picture of the toy in the pool. What can you conclude about the toy's properties?



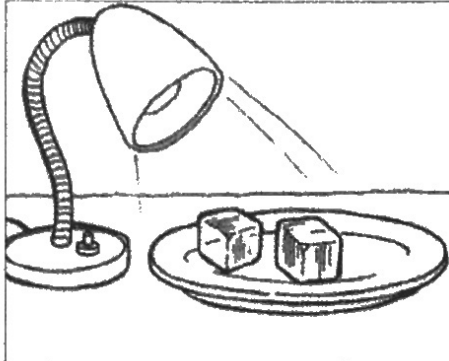
- (a) The toy is hard.
 - (b) The toy is made of plastic.
 - (c) The toy floats.
 - (d) The toy has a smooth texture.
- _____ 10. Which states of matter take the shape of their container?
- (a) A solid and a liquid
 - (b) A liquid and a gas
 - (c) A solid and a gas
 - (d) A solid, a liquid, and a gas

- _____ 11. What happens to water particles as water is heated?
- (a) The space between them becomes less.
 - (b) The space between them stays the same.
 - (c) The space between them becomes greater.
 - (d) The space between them stays the same, but they slide past one another.
- _____ 12. You walk into a flower garden with your eyes closed. You don't touch anything. What property of the flowers would you be most likely to detect?
- (a) Texture
 - (b) Size
 - (c) Color
 - (d) Smell
- _____ 13. What are you measuring when you use tools to find an object's mass?
- (a) The force with which the object attracts iron
 - (b) The amount of space the object takes up
 - (c) The weight of the object
 - (d) The amount of matter in the object
- _____ 14. Look at the paper clip and metric ruler.



- What is the length of the paper clip?
- (a) 4.5 centimeters
 - (b) 4 millimeters
 - (c) 4.5 millimeters
 - (d) 4 centimeters

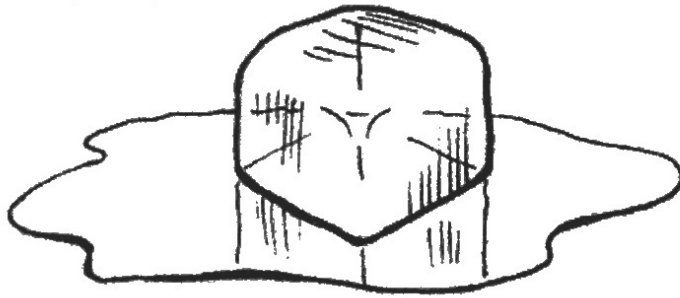
15. The drawing shows two ice cubes that Jacob has placed under the heat of a lamp.



As heat from the lamp warms the ice cubes, what will be the first change that Jacob will observe in the state of the ice cubes?

- (a) They will begin to change from a liquid to a solid.
- (b) They will begin to change from a solid to a gas.
- (c) They will begin to change from a solid to a liquid.
- (d) They will begin to change from a liquid to a gas.

16. Study the picture of the ice cube.



What is causing the change in the ice cube?

- (a) The ice is getting colder and condensing.
- (b) The ice is getting warmer and melting.
- (c) The ice is getting colder and freezing.
- (d) The ice is getting warmer and boiling.

17. In which state of matter are particles packed tightly together to form a definite shape?

- (a) Solid
- (b) Vapor
- (c) Liquid
- (d) Gas

_____ 18. How is energy initially being transferred by the campfire?



- (a) Convection → thermal energy
 - (b) Radiation → heat
 - (c) Convection → heat
 - (d) Radiation → thermal energy
- _____ 19. What is matter?
- (a) Anything that takes up space and has mass
 - (b) Only things you can observe with your senses
 - (c) Only what is needed by living things
 - (d) None of the other answer choices
- _____ 20. You are at the beach. You are surrounded by water in all three states of matter. Which of the following is an example of a liquid?
- (a) The ocean
 - (b) The ice in your drink
 - (c) The humidity (water vapor) in the air
 - (d) None of the other answer choices
- _____ 21. The metric unit of centimeters (cm) is used to measure which two physical properties of matter?
- (a) Mass and volume
 - (b) Temperature and length
 - (c) Width and volume
 - (d) Length and width

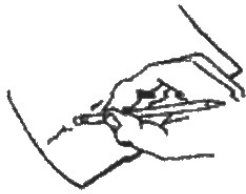
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- _____ 22. What happens when the temperature of water changes from 90°C (Celsius) to 100°C?
- Ⓐ The water changes from a solid to a gas.
 - Ⓑ The water changes from a liquid to a gas.
 - Ⓒ The water changes from a gas to a liquid.
 - Ⓓ The water changes from a liquid to a solid.
- _____ 23. Which is a true statement about liquids?
- Ⓐ A liquid never changes its shape.
 - Ⓑ A liquid's particles are tightly packed.
 - Ⓒ A liquid's particles flow past one another.
 - Ⓓ None of the other answer choices
- _____ 24. How do you know your pencil is a solid?
- Ⓐ It has mass and volume.
 - Ⓑ It is made up of particles.
 - Ⓒ It doesn't change shape.
 - Ⓓ None of the other answer choices
- _____ 25. Water changing from a gas to a liquid is called
- Ⓐ precipitation.
 - Ⓑ evaporation.
 - Ⓒ storage.
 - Ⓓ condensation.
- _____ 26. A cold drink left in the sun gets warm. How is thermal energy transferred in this example?
- Ⓐ Conduction
 - Ⓑ Radiation
 - Ⓒ Convection
 - Ⓓ None of the other answer choices

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_____ 27. Look at the picture.



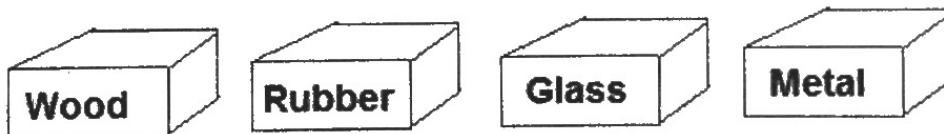
What can you feel after you rub an eraser against a paper?

- (a) potential energy
- (b) light
- (c) electricity
- (d) heat

_____ 28. Tyler holds a warm muffin in his hand. By what process does the heat travel from the muffin to the hand?

- (a) reflection
- (b) radiation
- (c) convection
- (d) conduction

_____ 29. Chen tests the properties of four small blocks. The blocks are the same size but are made from different materials. Chen discovers that one block has a property that is different from all the others. Which test most likely shows this result?



- (a) Feel the texture of each block.
- (b) Measure the volume of each block by finding how much the water level changes when the block is placed in a beaker of water.
- (c) Hold a magnet near each block.
- (d) None of the other answer choices

_____ 30. Which of the following is a property of matter?

- (a) Ball
- (b) Texture
- (c) Speed
- (d) Distance

11. What happens to frozen water when it is heated?
- Ⓐ It turns into a liquid.
 - Ⓑ It turns into a solid.
 - Ⓒ It turns into a gas.
 - Ⓓ None of the above.
12. When the pot of water is heated on the stove to a high enough temperature, the water begins to boil. What process causes the water vapor to rise out of the pot of liquid water cooking on the stove?



- Ⓐ Melting
- Ⓑ Evaporation
- Ⓒ Freezing
- Ⓓ Condensation