

## Chapter 1 Matter STUDY GUIDE

### Multiple Choice

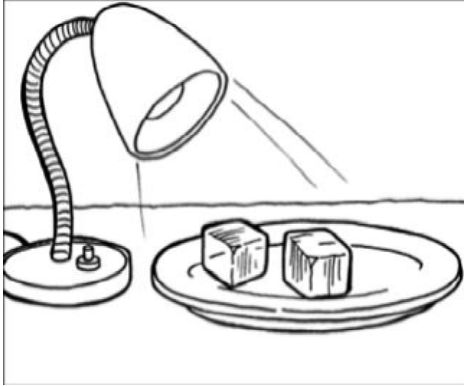
Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. Water changing from a gas to a liquid is called
- condensation.
  - precipitation.
  - evaporation.
  - storage.
- \_\_\_\_\_ 2. Ice melting into water is a change between which two states of matter?
- Liquid to gas
  - Solid to liquid
  - Gas to liquid
  - Liquid to solid
- \_\_\_\_\_ 3. Study the picture of the ice cube.



What is causing the change in the ice cube?

- The ice is getting warmer and boiling.
  - The ice is getting warmer and melting.
  - The ice is getting colder and freezing.
  - The ice is getting colder and condensing.
- \_\_\_\_\_ 4. In which state of matter are particles packed tightly together to form a definite shape?
- Gas
  - Liquid
  - Solid
  - Vapor
- \_\_\_\_\_ 5. 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 solid to a gas.
- b They will begin to change from a liquid to a gas.
- c They will begin to change from a liquid to a solid.
- d They will begin to change from a solid to a liquid.

\_\_\_\_\_ 6. 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

\_\_\_\_\_ 7. What happens to frozen water when it is heated?

- a It turns into a solid.
- b It turns into a liquid.
- c It turns into a gas.
- d None of the above.

\_\_\_\_\_ 8. Which of the following statements about liquids and gases is true?

- a They both have a definite shape.
- b They both have a definite volume.
- c They both take the shape of their containers.
- d They both have particles that are tightly packed.

\_\_\_\_\_ 9. What happens when the temperature of water changes from 90°C (Celsius) to 100°C?

- a The water changes from a gas to a liquid.
- b The water changes from a solid to a gas.
- c The water changes from a liquid to a gas.
- d The water changes from a liquid to a solid.

\_\_\_\_\_ 10. What happens to water when it reaches 100 degrees Celsius?

- a It boils.
- b It freezes.
- c It melts.
- d It condenses.

\_\_\_\_\_ 11. Which is a true statement about liquids?

- a A liquid never changes its shape.
- b A liquid's particles are tightly packed.
- c A liquid's particles flow past one another.
- d None of the other answer choices

\_\_\_\_\_ 12. Which state of matter has a shape of its own?

- a Solid
- b Liquid
- c Gas
- d All of the other answer choices

\_\_\_\_\_ 13. The particles of a gas

- a move freely.
- b have a lot of space between them.
- c bounce off one another as they move.
- d All of the other answer choices

\_\_\_\_\_ 14. How do you know your pencil is a solid?

- a It has mass and volume.
- b It is made up of particles.
- c It doesn't change shape.
- d None of the other answer choices

\_\_\_\_\_ 15. 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

\_\_\_\_\_ 16. What happens to water particles as water is heated?

- a The space between them becomes greater.
- b The space between them becomes less.
- c The space between them stays the same.
- d The space between them stays the same, but they slide past one another.

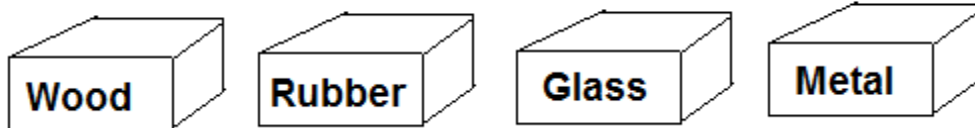
- \_\_\_\_\_ 17. When the pot of water is heated on the stove to a high enough temperature, the water begins to boil. What process causes the water vapor to rise out of the pot of liquid water cooking on the stove?



- a Condensation
  - b Evaporation
  - c Melting
  - d Freezing
- \_\_\_\_\_ 18. 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 has a smooth texture.
  - d The toy floats.
- \_\_\_\_\_ 19. Which of the following is a property of matter?
- a Ball
  - b Speed
  - c Distance
  - d Texture
- \_\_\_\_\_ 20. 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?



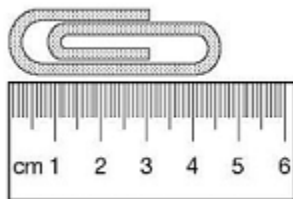
- a Hold a magnet near each block.
- b Feel the texture of each block.
- c Measure the volume of each block by finding how much the water level changes when the block is placed in a beaker of water.
- d None of the other answer choices

- \_\_\_\_\_ 21. What is matter?
- a Only things you can observe with your senses
  - b Only what is needed by living things
  - c Anything that takes up space and has mass
  - d None of the other answer choices

- \_\_\_\_\_ 22. What property would a baseball and a globe **always** have in common?
- a Size
  - b Shape
  - c Color
  - d Texture

- \_\_\_\_\_ 23. 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 Color
  - b Size
  - c Smell
  - d Texture

- \_\_\_\_\_ 24. Look at the paper clip and metric ruler.



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

- \_\_\_\_\_ 25. 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

- \_\_\_\_\_ 26. What are you measuring when you use tools to find an object's mass?
- a The weight of the object
  - b The amount of matter in the object
  - c The amount of space the object takes up
  - d The force with which the object attracts iron

- \_\_\_\_\_ 27. Look at the picture.



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

- a heat
  - b light
  - c potential energy
  - d electricity
- \_\_\_\_\_ 28. How is energy initially being transferred by the campfire?



- a Convection → heat
  - b Radiation → heat
  - c Radiation → thermal energy
  - d Convection → thermal energy
- \_\_\_\_\_ 29. How is heat transferred during conduction?

- a When two objects touch, there is an even exchange of heat between them.
- b When two objects touch, heat flows from the cooler object to the warmer object.
- c When two objects touch, heat flows from the warmer object to the cooler object.
- d None of the other answer choices

\_\_\_\_\_ 30. In which example is heat transferred by convection?

- a A spoon being warmed by hot oatmeal
- b An empty pan being heated by a flame on a stove
- c Water being warmed in a pan on a stove
- d Ice cooling the outside of a glass

\_\_\_\_\_ 31. A cold drink left in the sun gets warm. How is thermal energy transferred in this example?

- a Conduction
- b Convection
- c Radiation
- d None of the other answer choices

\_\_\_\_\_ 32. Tyler holds a warm muffin in his hand. By what process does the heat travel from the muffin to the hand?

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

**Chapter 1 Matter STUDY GUIDE**  
**Answer Section**

**MULTIPLE CHOICE**

1. ANS: A                   PTS: 1                   DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act.                   STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_218737  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_273323                   BLM: knowledge
2. ANS: B                   PTS: 1                   DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act.                   STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_218753  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_270871                   BLM: knowledge
3. ANS: B                   PTS: 1                   DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act.                   STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_228886  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271220  
BLM: comprehension
4. ANS: C                   PTS: 1                   DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act.                   STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_252976  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_273325                   BLM: knowledge
5. ANS: D                   PTS: 1                   DIF: L3  
OBJ: Students will identify the three states of matter and will describe how the different states act.  
STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3|3.P.2A.5  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254133  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271223                   BLM: application
6. ANS: B                   PTS: 1                   DIF: L3  
OBJ: Students will identify the three states of matter and will describe how the different states act.                   STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254135  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271224                   BLM: analysis
7. ANS: B                   PTS: 1                   DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the



- different states act. STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254313  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271856 BLM: knowledge
8. ANS: C PTS: 1 DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act. STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254314  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271857  
BLM: comprehension
9. ANS: C PTS: 1 DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act. STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_255226  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_273331 BLM: knowledge
10. ANS: A PTS: 1 DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act. STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PH\_EN\_SC\_MGS\_2014\_X\_259410  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271858 BLM: knowledge
11. ANS: C PTS: 1 DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act. STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PH\_EN\_SC\_MGS\_2014\_X\_266709  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271228 BLM: knowledge
12. ANS: A PTS: 1 DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act. STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PH\_EN\_SC\_MGS\_2014\_X\_266710  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271229 BLM: knowledge
13. ANS: D PTS: 1 DIF: L1  
OBJ: Students will identify the three states of matter and will describe how the different states act. STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PH\_EN\_SC\_MGS\_2014\_X\_266711  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271230 BLM: knowledge
14. ANS: C PTS: 1 DIF: L2  
OBJ: Students will identify the three states of matter and will describe how the different states act. STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
TOP: PH\_EN\_SC\_MGS\_2014\_X\_266712  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271231

- BLM: comprehension
15. ANS: A                   PTS: 1                   DIF: L2  
 OBJ: Students will identify the three states of matter and will describe how the different states act.                   STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
 TOP: PH\_EN\_SC\_MGS\_2014\_X\_266715  
 KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271232  
 BLM: comprehension
16. ANS: A                   PTS: 1                   DIF: L1  
 OBJ: Students will identify the three states of matter and will describe how the different states act.                   STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
 TOP: PH\_EN\_SC\_MGS\_2014\_X\_266793  
 KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271233  
 BLM: comprehension
17. ANS: B                   PTS: 1                   DIF: L3  
 OBJ: Students will identify the three states of matter and will describe how the different states act.                   STA: 3.P.2A.1|3.P.2A.2|3.P.2A.3  
 TOP: PE\_EN\_TX\_Elem\_2014\_TB\_252977  
 KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_273326                   BLM: application
18. ANS: D                   PTS: 1                   DIF: L1  
 OBJ: Students will identify properties of matter.                   STA: 3.P.2A.1  
 TOP: PE\_EN\_TX\_Elem\_2014\_TB\_218751  
 KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271218  
 BLM: comprehension
19. ANS: D                   PTS: 1                   DIF: L1  
 OBJ: Students will identify properties of matter.                   STA: 3.P.2A.1  
 TOP: PE\_EN\_TX\_Elem\_2014\_TB\_252975  
 KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_273324                   BLM: knowledge
20. ANS: A                   PTS: 1                   DIF: L3  
 OBJ: Students will identify properties of matter.                   STA: 3.P.2A.1  
 TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254130  
 KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271221                   BLM: synthesis
21. ANS: C                   PTS: 1                   DIF: L1  
 OBJ: Students will identify properties of matter.                   STA: 3.P.2A.1  
 TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254311  
 KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271851                   BLM: knowledge
22. ANS: B                   PTS: 1                   DIF: L1  
 OBJ: Students will identify properties of matter.                   STA: 3.P.2A.1  
 TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254312  
 KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271853

- BLM: comprehension
23. ANS: C                   PTS: 1                   DIF: L2  
OBJ: Students will identify properties of matter.                   STA: 3.P.2A.1  
TOP: PH\_EN\_SC\_MGS\_2014\_X\_259405  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271854  
BLM: comprehension
24. ANS: B                   PTS: 1                   DIF: L2  
OBJ: Students will understand how to measure and compare properties of matter.  
STA: 3.P.2A.1    TOP: PE\_EN\_TX\_Elem\_2014\_TB\_228742  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271219  
BLM: comprehension
25. ANS: D                   PTS: 1                   DIF: L1  
OBJ: Students will understand how to measure and compare properties of matter.  
STA: 3.P.2A.1    TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254315  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271860                   BLM: knowledge
26. ANS: B                   PTS: 1                   DIF: L1  
OBJ: Students will understand how to measure and compare properties of matter.  
STA: 3.P.2A.1    TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254316  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_271861                   BLM: knowledge
27. ANS: A                   PTS: 1                   DIF: L2  
OBJ: Students will understand what heat is and how to identify thermal energy.  
STA: 3.P.2A.4    TOP: PE\_NA3\_Energy\_MC11  
KEY: PE\_NA3\_Energy\_SP\_MC11    BLM: application
28. ANS: C                   PTS: 1                   DIF: L2  
OBJ: Students will understand what heat is and how to identify thermal energy.  
STA: 3.P.2A.4    TOP: PE\_EN\_TX\_Elem\_2014\_TB\_253012  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_273654  
BLM: comprehension
29. ANS: C                   PTS: 1                   DIF: L2  
OBJ: Students will understand what heat is and how to identify thermal energy.  
STA: 3.P.2A.4|3.P.2A.5  
TOP: PE\_EN\_TX\_Elem\_2014\_TB\_254390  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_272035  
BLM: comprehension
30. ANS: C                   PTS: 1                   DIF: L2  
OBJ: Students will understand what heat is and how to identify thermal energy.  
STA: 3.P.2A.4    TOP: PH\_EN\_SC\_MGS\_2014\_X\_258855  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_272036  
BLM: comprehension

31. ANS: C                   PTS: 1                   DIF: L1  
OBJ: Students will understand what heat is and how to identify thermal energy.  
STA: 3.P.2A.4    TOP: PH\_EN\_SC\_MGS\_2014\_X\_260193  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_272037                   BLM: application
32. ANS: A                   PTS: 1                   DIF: L2  
OBJ: Students will understand what heat is and how to identify thermal energy.  
STA: 3.P.2A.4|3.P.2A.5  
TOP: PH\_EN\_SC\_MGS\_2014\_X\_260704  
KEY: PE\_SP\_TX\_ELEM\_2014\_TB\_273750  
BLM: comprehension