Contents

Matter All Around Us

Textbook pages 190-194 | **Lesson 1**

Read 10.1 "Matter All Around Us" on pages 190-194 of the textbook.

Exploring the Lesson

A **Write the letter of each vocabulary word beside its definition.**

1. _____ to connect or stick tightly together
2. _____ the tiniest particle of matter
3. _____ a particle made of two or more atoms bonded together
4. _____ something that takes up space and has weight

a. atom
b. bond
c. matter
d. molecule

B **Circle the letter of the answer to each question.**

5. How do we know that air is matter?
   a. Air can be either hot or cold.
   b. Air takes up space and has weight.
   c. The wind is moving air in the atmosphere.
6. How do we know that light is *not* matter?
   a. A flashlight can shine into a box.
   b. Light cannot be weighed.
   c. The sun is a source of light.
7. Which set of things is made of matter?
   a. electricity, heat, sound
   b. light, love, laughter
   c. metal, rocks, water

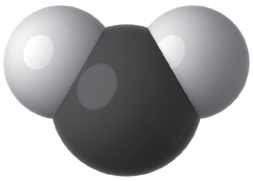
C **Underline the bold word that completes each sentence.**

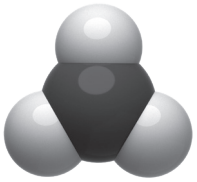
8. All matter is made of **air, atoms.**
9. An atom **can, cannot** be cut or made smaller.
10. Air contains atoms of oxygen and **aluminum, nitrogen.**
11. A water molecule contains two **carbon, hydrogen** atoms and one oxygen atom.

D **Circle *T* if the statement is *true* or *F* if it is *false*.**

12. **T** **F** Atoms can be seen with binoculars.
13. **T** **F** A drop of water contains billions of molecules.
14. **T** **F** Most matter is made of atoms that have formed molecules.
15. **T** **F** Atoms can join together in only one way.

E **Write *atom* or *molecule* to label each drawing.**





16. _____ 17. _____ 18. _____

F **Write the type of matter that would be used to make each set of things.**

concrete cotton metal wood

19. _____ socks, blankets, pillows
20. _____ furniture, cabinets, benches
21. _____ vehicles, tools, wire
22. _____ foundations, driveways, sidewalks

The Three Forms of Matter

Textbook pages 195-198 | **Lesson 2**

Read 10.2 "The Three Forms of Matter" on pages 195-198 of the textbook.

Exploring the Lesson

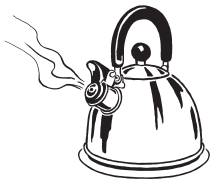
A **Complete the definition of each vocabulary word.**

1. **gas:** matter with _____ definite _____ or definite _____
2. **liquid:** matter with a definite _____ but _____ definite _____
3. **solid:** matter with _____ a definite volume and a definite shape
4. **volume:** the amount of _____ matter takes up

B **Write *gas, liquid,* or *solid* to label the three forms of water.**

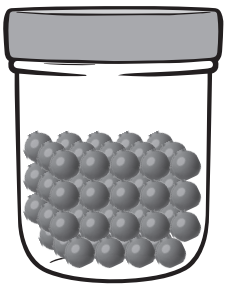
5. _____

6. _____



7. _____

C **Write *gas, liquid,* or *solid* to label the atoms in the three forms of matter.**



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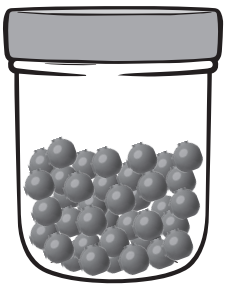
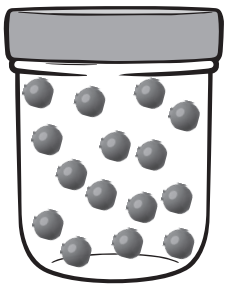


9. _____



10. _____

D **Place a check mark beside the answers to each question.**

11. What two things happen to wooden blocks if you dump them out of a box?
    a. ____ The blocks melt and spread into a puddle on the floor.
    b. ____ The blocks still have the same volume as they did in the box.
    c. ____ The blocks keep their shape but are scattered.
12. What two things happen to liquid tea when it is poured into cups?
    a. ____ The tea still has the same volume.
    b. ____ The tea takes the shape of the cups.
    c. ____ The tea goes into the air, and you cannot see it.
13. What two things happen when gas from a helium balloon is released into a small room?
    a. ____ The helium forms drops of liquid in the air.
    b. ____ The helium molecules spread throughout the room.
    c. ____ The helium takes the shape of the room instead of the shape of the balloon.
14. Which three items describe a solid that has been changed but is still a solid?
    a. ____ a tree chopped into firewood
    b. ____ a block of ice that has melted into water
    c. ____ a cake cut and shaped to look like a train
    d. ____ kernels of wheat that have been ground into flour

E **Write the letter of each form of matter beside its examples.** One answer will be used twice.

15. ____ apple, car, rock
16. ____ blood, juice, milk
17. ____ carbon dioxide, helium, hydrogen
18. ____ ice, rubber tire, blanket

a. gas
b. liquid
c. solid

We Remember

F **Complete each sentence.**

19. All matter takes up _____ and has _____ .
20. All matter is made of _____ .
21. An atom is the _____ particle of matter.
22. Atoms form _____ when they bond together.
23. An _____ cannot be cut or made _____ .

G **Place a check mark beside the answers to each question.**

24. Which five things are made of matter?

a. ____ air	d. ____ heat	g. ____ rock
b. ____ balloon	e. ____ light	h. ____ sound
c. ____ electricity	f. ____ pencil	i. ____ water

25. Which two types of atoms form water molecules?

a. ____ carbon	b. ____ hydrogen	c. ____ oxygen

H **Draw diagrams to illustrate an atom and a molecule.**

26. Atom

27. Molecule

Matter Changes

Textbook pages 199-203 | **Lesson 3**

Read 10.3 "Matter Changes" on pages 199-203 of the textbook.

Exploring the Lesson

A **Write the word that completes each vocabulary definition.**

1. _____ **change:** a change to the shape or form of matter
2. _____ **change:** a change that produces a different substance

B **Place a check mark beside the answers to the question.**

3. Which six actions show a physical change?

a. ____ bending a wire
b. ____ burning a piece of paper
c. ____ mixing soil with sand
d. ____ splitting a log into firewood
e. ____ baking bread
f. ____ shaping clay into a bowl
g. ____ cutting fabric
h. ____ melting an ice cube into water

C **Write the letter of what results from each chemical change.**

4. ____ burning firewood
5. ____ frying an egg
6. ____ decaying leaves
7. ____ burning gasoline
8. ____ combining iron and oxygen

a. compost
b. gases and water vapor
c. hardened proteins and fats
d. rust
e. gases and a pile of ash

D **Write *cooling* or *heating* to show how matter changes form.**



9. ice cubes a. _____ liquid water b. _____ water vapor



10. water vapor a. _____ liquid water b. _____ ice cubes

E **Underline the bold word that completes each sentence.**

11. A **chemical, physical** change produces a different substance.
12. Matter can change form, but its **atoms, shapes** are not destroyed.
13. When a log burns, the atoms in the wood **rearrange, disappear** to form other substances.
14. Although changes occur, the **amount, shape** of matter is always the same.

We Remember

F **Write the definition of the vocabulary word.**

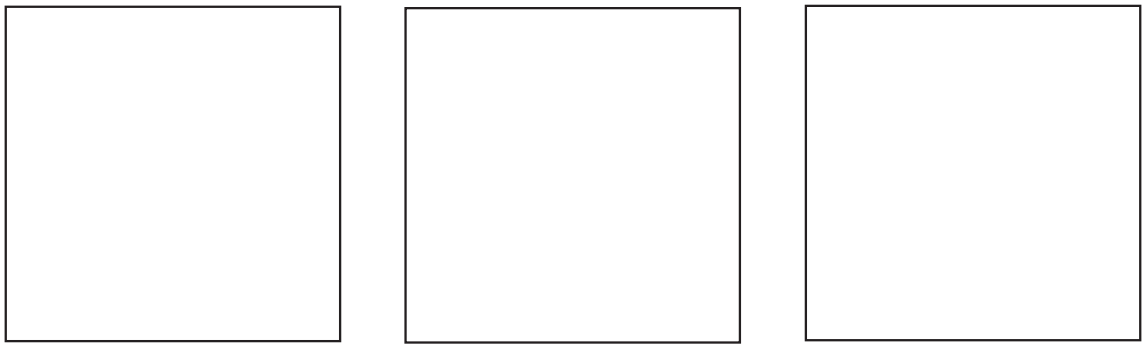
15. **volume:** _____

G **Write *yes* or *no* to identify each characteristic of the forms of matter.**

	Solid	Liquid	Gas
Definite volume	16. _____	18. _____	20. _____
Definite shape	17. _____	19. _____	21. _____

H **Draw diagrams to illustrate the atoms in a solid, a liquid, and a gas.** Use the diagrams in Lesson 2 for a model if needed.

22. a. Solid b. Liquid c. Gas



I **Cross out the substance that does not belong in each group.**

23. **solid:** ice, juice, pencil, doorknob
24. **liquid:** clay, rain, diesel fuel, hot tea
25. **gas:** helium, nitrogen, oxygen, plastic

J **Underline the bold word that completes each sentence.**

26. An atom is the **tiniest, largest** particle of matter.
27. When atoms bond, they form **molecules, liquids.**
28. All matter takes up space and has **shape, weight.**
29. All matter is made of **atoms, air.**
30. Air, metal, water, and rocks are all made of **solids, matter.**

Investigation: Make Ice Cream

Lesson 4

How Does Matter Change Form?

Matter changes are all around us. In this investigation, you will observe matter changing from a liquid mixture into a solid as you make ice cream.

Materials

You will need the following items:

- ½ cup half and half, heavy whipping cream, or milk
- 1 tbsp. sugar
- ½ tsp. vanilla extract
- toppings of your choice
- 3 cups of ice cubes
- ⅓ cup salt (preferably rock salt or kosher salt)
- at least one sealable plastic sandwich bag
- one gallon-size Ziploc bag
- oven mitts or a small towel