

SECTION | MATTER HAS MASS AND VOLUME.

1.1 Reading Study Guide A**BIG IDEA** Everything that has mass and takes up space is matter.**KEY CONCEPT** Matter has mass and volume.**Vocabulary****matter** anything that has mass and takes up space**mass** how much matter something contains**weight** the downward pull of an object because of gravity**volume** the amount of space something takes up**Review**

1. List two tools a scientist might use.
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Take Notes

1. All objects are made of matter. (p. 9)
2. Fill in the combination notes for the main idea shown.

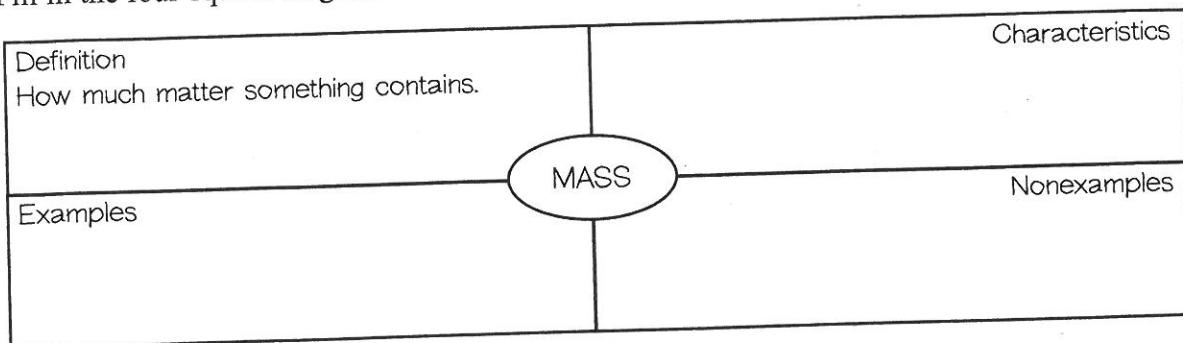
MAIN IDEA	DETAIL NOTES
1. All objects are made of matter.	A. Matter is what makes up all objects and organisms. B. Matter is _____ _____ C. Two things that are not matter are _____ _____

3. In the table below, underline everything that is made of matter.

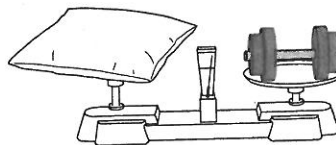
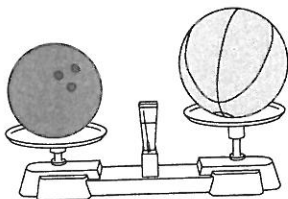
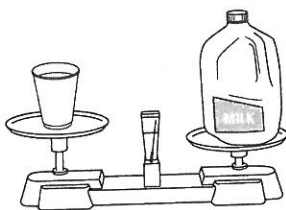
a book	an idea	light	a feeling
a chair	a sound	a mountain	air

II. Mass is a measure of the amount of matter. (p. 10)

4. Fill in the four-square diagram for
- mass*
- .

**A-B. Measuring Mass and Measuring Weight (p. 10)**

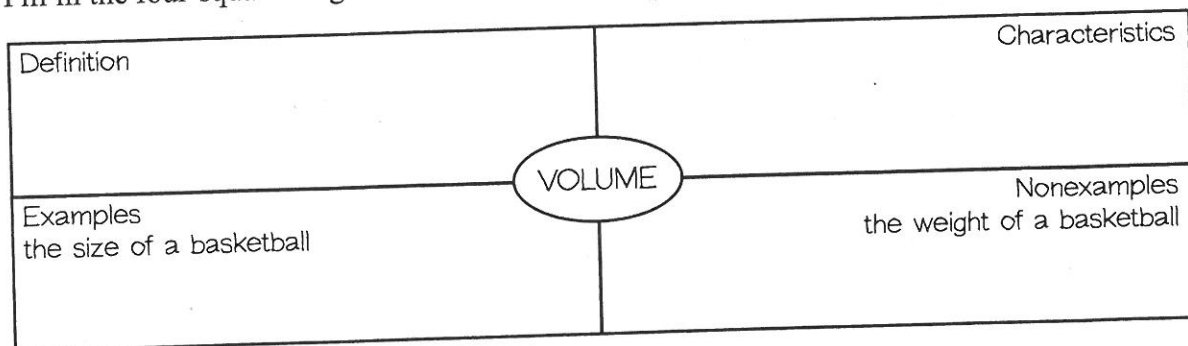
5. Circle the object on each balance that has more mass.



6. Do mass and weight mean the same thing? Remembering that gravity is less on the Moon than it is on Earth, which measurement—mass or weight—changes on the Moon?

III. Volume is a measure of the space matter occupies. (p. 11)

7. Fill in the four-square diagram for
- volume*
- .

**A-B. Determining Volume by Formula and Determining Volume by Displacement (pp. 12-13)**

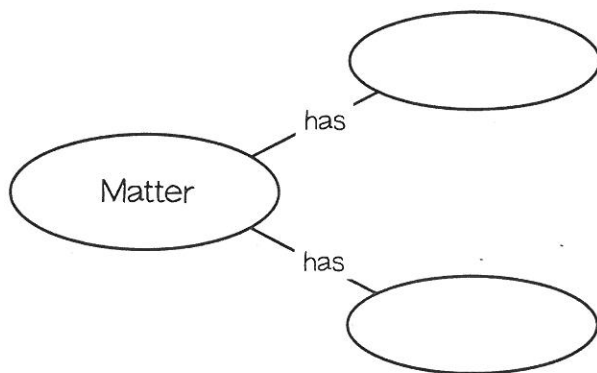
8. The volume of an object can be determined using the formula
- $l \times w \times h$
- . What do the letters (variables) stand for?

9. What is another way to determine an object's volume?

SECTION 1.2 | MATTER IS MADE OF ATOMS.

1.2 Reading Study Guide A**BIG IDEA** Everything that has mass and takes up space is matter.**KEY CONCEPT** Matter is made of atoms.**Vocabulary****atom** the smallest basic unit of matter**molecule** two or more atoms bonded together**Review**

1. Fill in the concept map for *matter*.

**Take Notes**

1. **Atoms are extremely small. (p. 16)**
2. Fill in the combination notes for the main idea shown.

MAIN IDEA	DETAIL NOTES
1. Atoms are extremely small.	A. An atom is the smallest basic unit of matter. B. The idea of atoms dates back to _____ _____ C. Today scientists know of more than _____ _____

A. Atoms (p. 17)

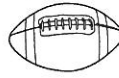
3. Can you see an individual atom? Why or why not?

Name _____

Period _____

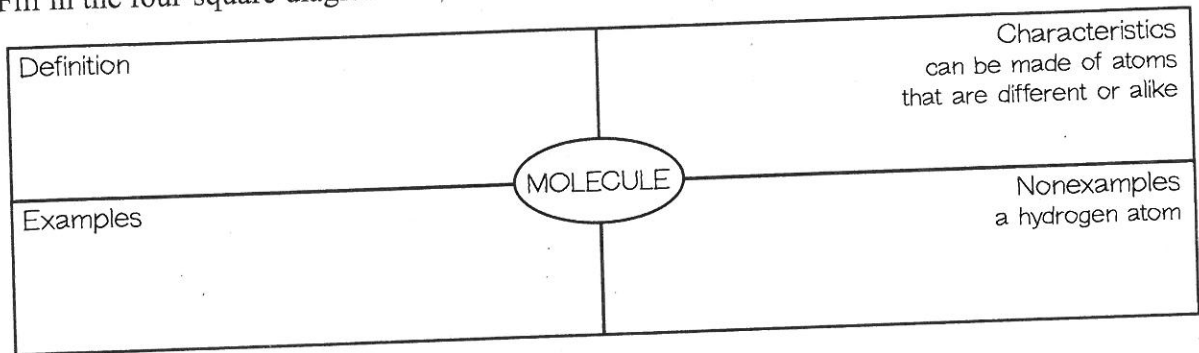
Date _____

4. Which of the objects below is made of atoms? How do you know?



B. Molecules (p. 18)

5. Fill in the four-square diagram with information about molecules.



II. Atoms and molecules are always in motion. (p. 19)

6. Fill in the combination notes for the main idea shown.

MAIN IDEA	DETAIL NOTES
1. Atoms and molecules are always in motion.	<p>A. Dust particles show that _____</p> <p>_____</p> <p>B. Food coloring shows that water molecules, also, are _____</p> <p>_____</p> <p>C. Even molecules in solid objects</p> <p>_____</p>

SECTION | MATTER COMBINES TO FORM DIFFERENT SUBSTANCES.
1.3 Reading Study Guide A

BIG IDEA Everything that has mass and takes up space is matter.
KEY CONCEPT Matter combines to form different substances.

Vocabulary

- element** a substance with only one type of atom
- compound** a substance with atoms of more than one type bonded together
- mixture** a combination of one or more substances that can be separated physically

Review

1. What is all matter made of?
-

Take Notes

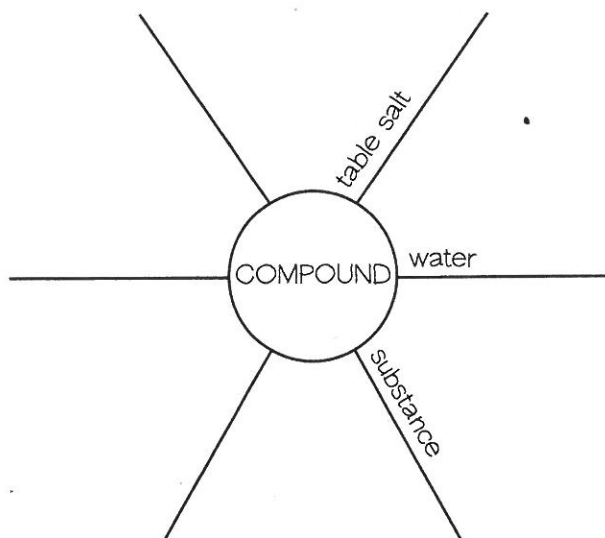
- I. **Matter can be pure or mixed. (p. 21)**
2. Fill in the combination notes for the main idea shown.

MAIN IDEA	DETAIL NOTES
1. Matter can be pure or mixed.	A. Often the difference between pure and mixed substances can only be seen at the molecular or atomic level. B. A pure substance has _____. C. The components of a pure substance can be either _____ _____ D. Mixed substances have _____

A. Elements and Compounds (pp. 22-23)

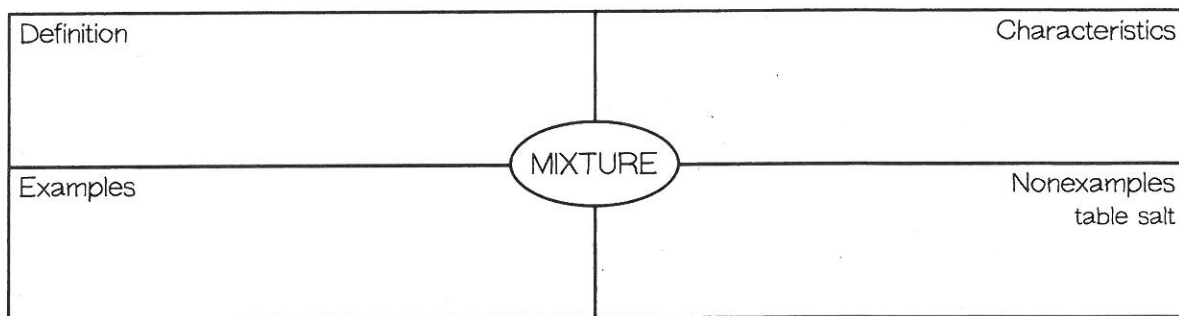
3. Bronze is made by combining the element copper with the element tin. Is pure bronze an element? Why or why not?
-

4. Fill in the description wheel diagram for *compound*.



B. Mixtures and Comparing Mixtures and Compounds (pp. 23–24)

5. Fill in the four-square diagram for *mixture*.



6. Fill in the chart comparing mixtures and compounds.

	Substances That Make It Up	Can Be Separated By	Proportions
compound	change to new substances		fixed
mixture		physical means	

II. Parts of mixtures can be the same or different throughout. (p. 25)

7. What is a heterogeneous mixture? What is a homogeneous mixture?

SECTION

MATTER EXISTS IN DIFFERENT PHYSICAL STATES.

1.4 Reading Study Guide A**BIG IDEA** Everything that has mass and takes up space is matter.**KEY CONCEPT** Matter exists in different physical states.**Vocabulary****states of matter** the different forms in which matter can exist**solid** a substance with a fixed volume and a fixed shape**liquid** a substance with a fixed volume but no fixed shape**gas** a substance with no fixed volume or shape**Review**

1. What tiny particles make up matter?
-

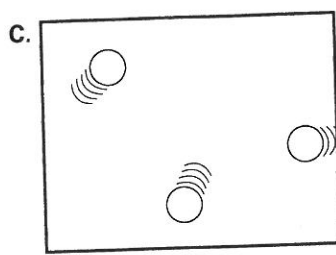
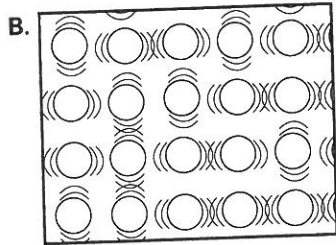
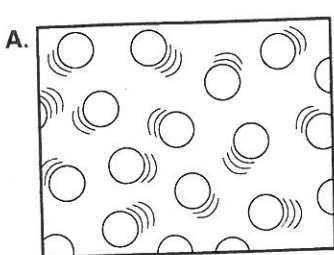
Take Notes

1. **Particle arrangement and motion determine the state of matter. (p. 27)**
2. Fill in combination notes for the main idea shown.

MAIN IDEA	DETAIL NOTES
1. Particle arrangement and motion determine the state of matter.	A. Three states of matter: _____ B. From one state to another, molecules do not _____. C. From one state to another, arrangement of molecules does _____.

II. Solid, liquid, and gas are common states of matter. (p. 28)

3. Each sketch shows the same substance in three different states. Below each sketch, write whether it is a solid, liquid, or gas.



III. Solids have a definite volume and shape. (p. 30)

4. Fill in the combination notes for the main idea shown.

MAIN IDEA	DETAIL NOTES
1. Solids have a definite volume and shape.	<p>A. The molecules in a solid are in fixed positions and close together.</p> <p>B. Molecules can vibrate but do not</p> <hr/> <p>C. The particles in some solids occur</p> <hr/>

IV. Liquids have a definite volume but no definite shape. (p. 31)

5. How are molecules in a liquid arranged?

V. Gases have no definite volume or shape. (p. 32)

6. What is the difference between molecules of a gas and molecules of a liquid?

A-B. Gas Composition and Gas Behavior (pp. 32-33)

7. Fill in the chart with information about how gases change in the given conditions.

Change	Result
If temperature remains the same and pressure goes up,	volume goes _____.
If volume remains the same and temperature goes up,	pressure goes _____.
If pressure remains the same and temperature goes up,	volume goes _____.