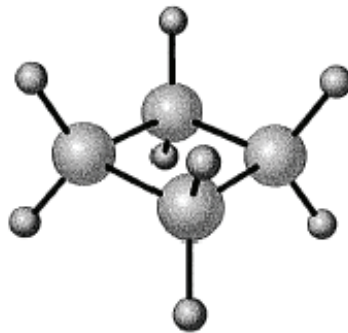


SIMPLIFIED SCIENCE UNIT

Matter



**By
Marice Derrick**

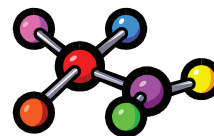
**Grade / Topic Level : Grades 9 - 12
(Approximate Reading Level Grade 6 - 7)**

MATTER

CONTENTS

| | |
|-----------------------|---|
| <u>PART 1.</u> | <u>MASS, VOLUME, DENSITY</u>Pages 1 - 11 |
| | What is Matter? |
| | Measuring Mass Using a Balance |
| | Measuring Liquid Volumes |
| | Measuring the Volume of Solids |
| | Measuring the Volume of Regularly-Shaped Solids |
| | SUMMARY TEST ON MEASURING VOLUME |
| | Understanding Density |
| | Density Calculations |
| | SUMMARY TEST : MASS, VOLUME, DENSITY |
| <u>PART 2.</u> | <u>THREE STATES OF MATTER</u>Pages 12 - 20 |
| | States of Matter |
| | Solids |
| | Liquids |
| | Gases |
| | Particle Movement |
| | Changes of State |
| | SUMMARY TEST : THREE STATES OF MATTER |
| <u>PART 3.</u> | <u>PURE SUBSTANCES, CHEMICAL AND</u> |
| | <u>PHYSICAL CHANGES</u>Pages 21 - 27 |
| | Classifying Matter |
| | Pure Substances |
| | Changes in Matter |
| | Deciding if Changes are Physical or Chemical |
| | SUMMARY TEST : PURE SUBSTANCES, CHEMICAL |
| | AND PHYSICAL CHANGES |
| <u>PART 4.</u> | <u>MIXTURES</u>Pages 28 - 38 |
| | Classifying Mixtures |
| | Understanding Solutions |
| | Effects of Adding Solutes |
| | Separating Mechanical Mixtures and Solutions |
| | Water Treatment |
| | Separating Solutions |
| | Separating Mixtures Summary |
| | SUMMARY TEST : MIXTURES |
| | <u>ANSWER KEY</u>Page 39 |

What is Matter?



Key Words:

Mass: how much matter is in an object, similar to its weight

Volume: how much space an object takes up

Matter: anything that has both mass and volume

Matter is all around us. The table in front of you, the water you drink and the air you breathe are all forms of matter. Matter is made up of many particles that are too small to see. These particles each have some mass and volume. These particles join together to make things that have amounts of mass and volume we can measure.

Mass is not the same as weight. When you weigh something you are measuring the pull of gravity on that object. This is because scales that measure weight use a spring. If you weigh 100 pounds on Earth you will not weigh 100 pounds on Mars. This is because Mars has less gravity. Mass is measured using a balance. Because gravity will affect both sides of the balance the same way, it will not affect your measurement of mass. Mass will stay the same measured on Earth or any other planet or moon.

There are things on Earth that are not matter. Light, sound and heat are not matter; they are forms of energy.

1. Circle the equipment used to measure mass



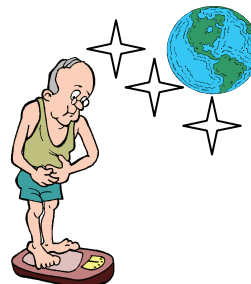
or



2. If you use a bathroom scale on Mars would it give you the same weight as on Earth?
(Circle)

Yes

No

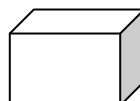


3. Volume measures how much _____ an object takes up.

Circle the picture that best shows volume.



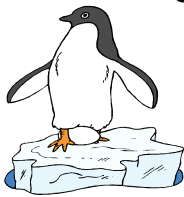
or



4. Circle T for True, or F for False

- a. You cannot see the small particles that make up matter T F
- b. Water and air are not forms of matter T F
- c. A substance is matter if it has both mass and volume T F
- d. You need to use a balance to measure mass T F
- e. Mars has the same gravity as Earth T F
- f. Your weight would be different on Mars T F
- g. Your mass would be the same on Mars T F
- h. Sound is a form of matter T F

Matter can be found in the three forms; solid, liquid, and gas.
A good example of this is found with water.



Ice is a solid



Water is a liquid



Water vapour or steam is a gas

5. Use the picture of the glass of pop to answer these questions
On the line write S for solid, L for liquid, and G for gas

- a. glass _____
- b. pop _____
- c. straw _____
- d. umbrella _____
- e. bubbles _____

