

What Is Matter?

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Matter Is Everywhere

Matter is everything around you. This book is matter. The ocean is matter. The sky is matter.

Fast Fact

An empty jar is not really empty. It is full of air!

This room is full of different kinds of matter.





Some of these pillows are different in size. Some are different in color. You can sort them by size and color.

Matter is not all the same. Matter can be soft like a feather. It can be hard like a table.

You can sort matter. You can sort matter by color. You can sort matter by shape. There are many ways to sort matter.



COMPARE AND CONTRAST How are a table and a pillow the same? How are they different?

What Is a Solid?

If you turn over a wooden block, it is still a wooden block. Its shape stays the same. The wooden block is a solid. A **solid** is a kind of matter that keeps its shape.

All of these objects are solids.



A pencil is a solid. This ruler tells you how long the pencil is.

You can measure solids. How long is a wooden block? A ruler can measure it.



You can measure how long a solid is. **Length** tells us how long a solid is. You can measure length with a ruler.



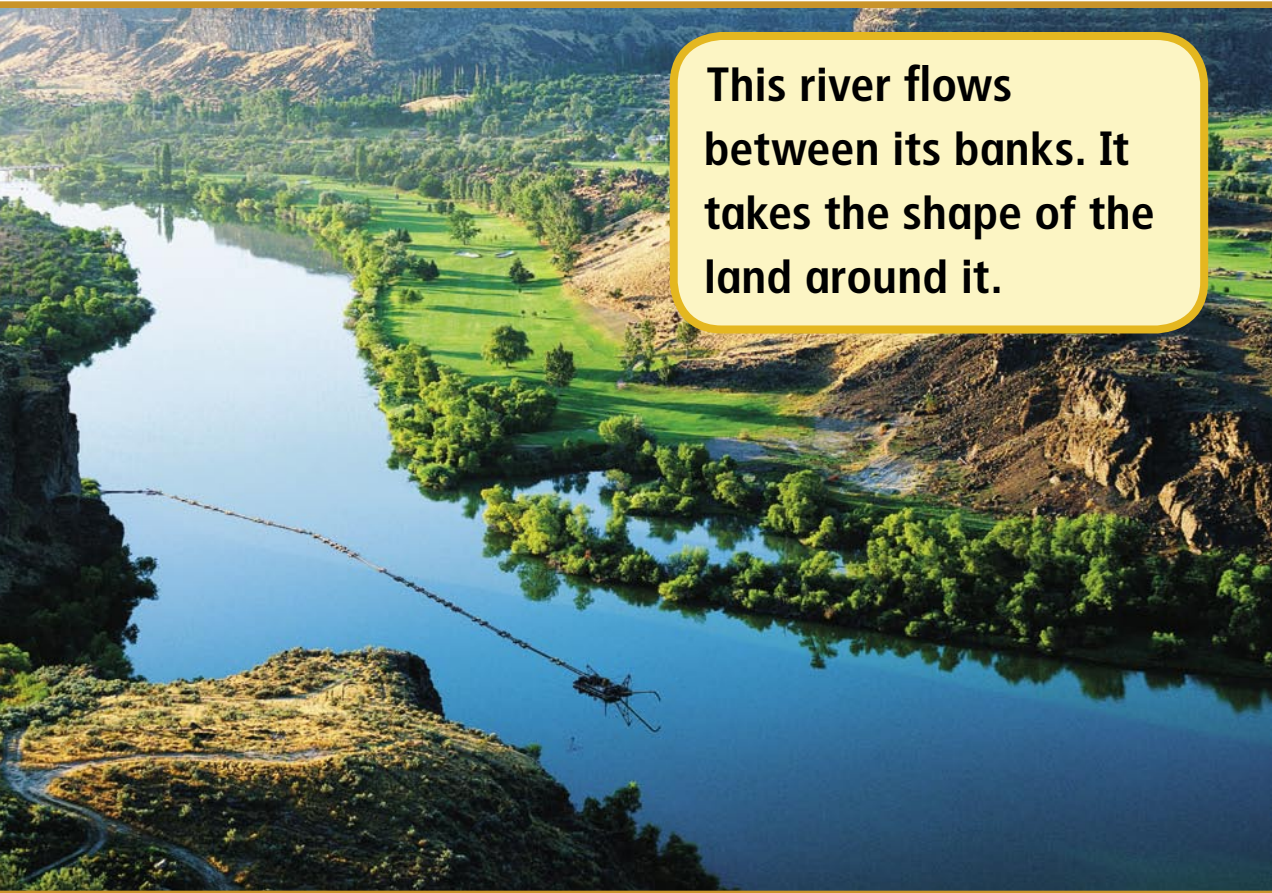
MAIN IDEA AND DETAILS A rock is a solid. How can we measure the length of a rock?

What Is a Liquid?

What shape is milk? Is milk tall with sharp corners as in a milk carton? Is it short and round as in a bowl? Does milk always have the same shape?

Liquid can be any shape.





This river flows between its banks. It takes the shape of the land around it.

Milk does not always have the same shape. That is because it is a liquid. A **liquid** is a kind of matter that flows. It has no shape of its own. It takes the shape of its container.



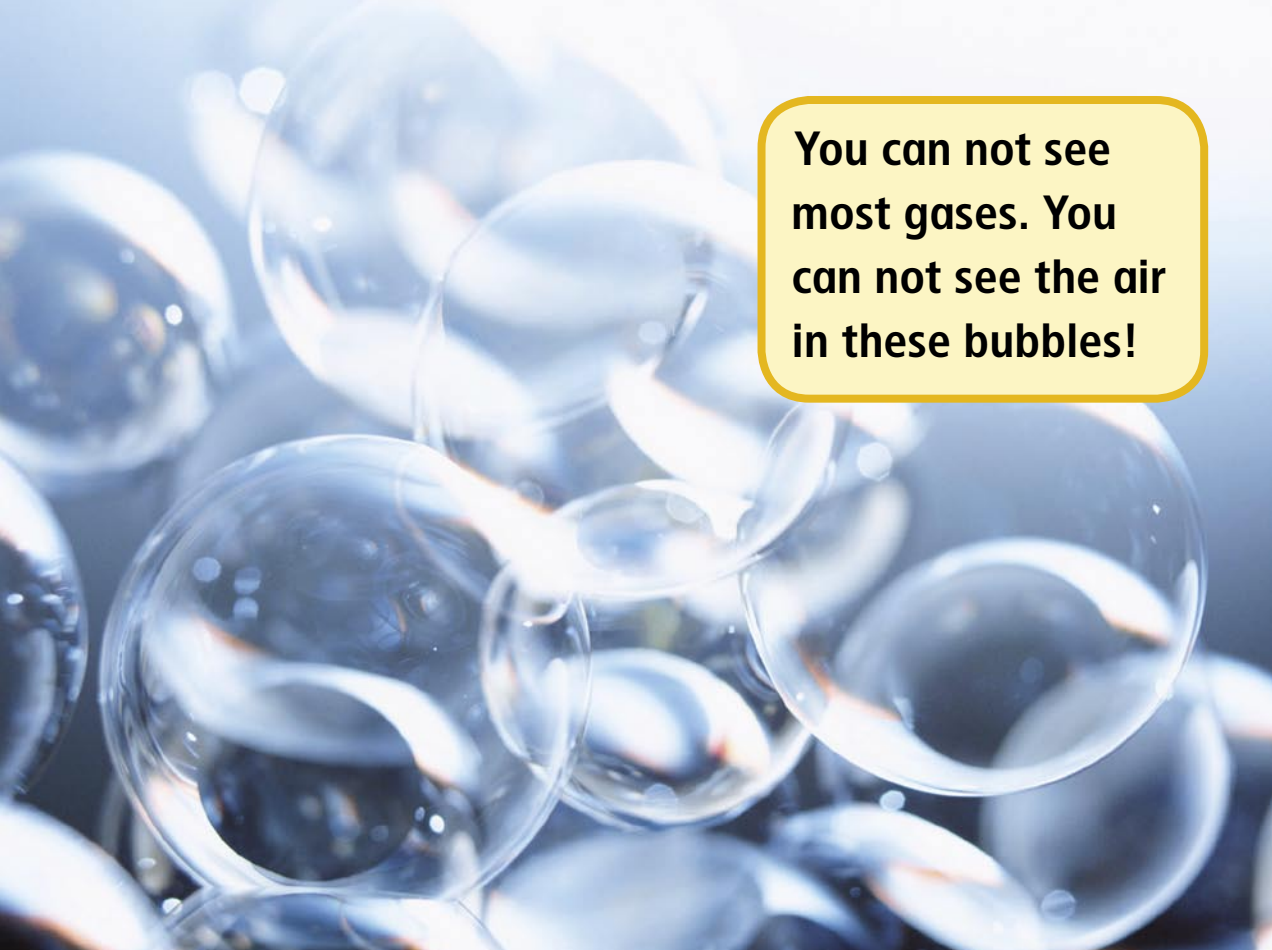
MAIN IDEA AND DETAILS Pour water from a glass into a bowl. Why does it have a different shape in each container?

What Is a Gas?

A **gas** is a kind of matter that does not have its own shape. It takes the same shape as the container that holds it.

A gas spreads out. It fills the container that holds it.

Gases spread out to fill these balloons.



You can not see most gases. You can not see the air in these bubbles!

Air is made of gases. Air inside a soccer ball takes the shape of the soccer ball. Air inside a football takes the shape of the football.



COMPARE AND CONTRAST How is a soccer ball different from a water balloon? Are they filled with the same kind of matter?

Changing Matter

Heating and cooling can change matter. Water can be a liquid, a solid, or a gas.

When liquid water freezes, it turns into solid ice. When ice gets warm, it turns into a liquid. **Steam** is water in the form of a gas.



COMPARE AND CONTRAST How are steam and ice alike? How are they different?

These ice cubes are matter. They are solids.





Watch how a liquid can become a solid. Put water in an ice tray and put it in a freezer.

Summary

Matter is everywhere. Solids, liquids, and gases are three kinds of matter. A solid keeps its shape. Liquids and gases take the shape of their containers. Matter can change.

Glossary

gas A kind of matter that does not have its own shape (8, 9, 10, 11)

liquid A kind of matter that flows and takes the shape of its container (6, 7, 10, 11)

length The measure of how long a solid is (5)

matter Everything around you. Matter can be a solid, liquid, or gas. (2, 3, 4, 5, 7, 9, 10, 11)

solid A kind of matter that keeps its shape (4, 5, 10, 11)

steam Water in the form of gas (10)

Think and Write

1. What are three kinds of matter?

2. COMPARE AND CONTRAST

How are gases and liquids alike?

How are they different?

3. MAIN IDEA AND DETAILS

Name one way a solid can be measured.



4. Write about a gas, a liquid, and a solid in your kitchen.

Hands-On Activity

With a partner, list solids, liquids, and gases in the classroom.

School-Home Connection

With an adult family member, observe and describe water as a liquid, as ice, and as steam.