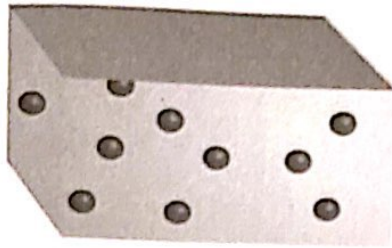


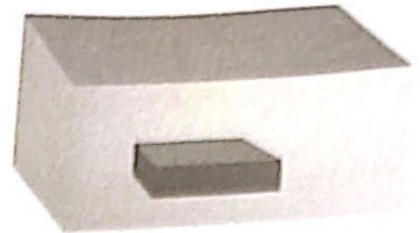
Forms of Matter



Gas
Shape of container
Volume of container



Liquid
Shape of container
Free surface
Fixed volume



Solid
Holds shape
Fixed volume

Everything around you is made of **matter**. Scientists' group matter based on its properties, or characteristics: what it looks like and how it acts in different situations. Matter can take three different **forms**. The three forms are solid, liquid, and gas.

Solid matter has a definite shape. It also takes up a definite amount of space. This means it has a specific volume. If you could look at solid matter under a very powerful microscope, you would see its tiny particles moving back and forth. The particles are packed together, so they vibrate in place. Their overall shape does not change.

Liquid matter takes the shape of its container. When liquid is in a cup, it is shaped like the cup. When the liquid is in a vase, it is shaped like the vase. The volume of the liquid stays the same. If you were to look at liquid matter under the microscope, you would see its tiny particles sliding past each other. Because of this unique sliding movement, the liquid is able to change its shape so we can pour it. In the form of a gas, matter is usually invisible. The air around us has several different gases, like the oxygen we breathe in and the carbon dioxide we breathe out. If you could look at gas matter under the microscope, you would see its tiny particles floating around with lots of space in between them. They spread out to fill any container the gas is placed in.

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

- 1) What do the word properties mean in the first paragraph?

- 2) What are the three forms that matter can take?

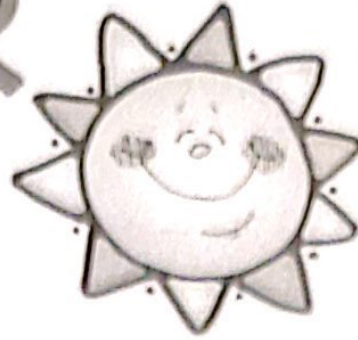
- 3) What does the word vibrate mean in the second paragraph?

- 4) What is one difference between a solid and a liquid?

- 5) Are the tiny particles closer together in a solid, a liquid, or a gas?

SUMMER

S.T.E.M CHALLENGE



Old Made New

Using e-waste and recyclable materials create an ordinary useful item.

Project Guidelines:

- 🐾 Design a machine/object using e-waste and other recyclables
- 🐾 Give your invention a name
- 🐾 Use your invention to recreate an everyday useful item.
- 🐾 Be able to explain why reusing recyclables and e-waste are important. Explain how your invention solves a problem.

Example:

Need: A Fun way to clean dishes

Invention Name: The Scrubbles



Materials: scrub brush, feather, wiggle eyes, pipe cleaner, cork, and gold wrapper

Explanation: Using recycled material to create the Scrubbles is great for the environment and to have fun while cleaning. There are plenty of facts out there on why recycling is important. The world population is growing, not shrinking, and currently each human being adds a lot of waste to the planet over his or her lifetime. However, the effort involves not only recycling existing products, but reusing products that otherwise will be thrown away. My invention is great for the planet, and for people who want to create a fun way to clean the house. The brush at the bottom allows the person to scrub away dirt or dirty dishes.

SUMMER STEM CHALLENGE

ASK

What is the problem?

Model

Draw a picture of your final design.

Explore

How can you try to solve the problem?

Did your model solve the problem?

EVALUATE

EXPLAIN

How would you change your design? How would these changes improve your design?