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Lesson 1

Properties of Matter

solid
liquid
mass
gas
density
matter
Properties of Matter

Matter is anything that takes up space and has mass. A person has matter, an apple has matter, a glass of water has matter, a rock has matter and a dog has matter.
If it takes up space somewhere, it has matter! Mass is the amount of matter in an object. We measure mass by putting the object on a triple beam balance. The triple beam balance will tell us how much the object weighs. We measure how much space something takes up by putting
it in a graduated cylinder with water and seeing how the measurement changes. We also need to know how dense the object is. You can think of density as whether something will sink or float. If it is dense then it will sink.

If it is not very dense it will float!
1. Matter takes up ________________ and has ________________.

2. Mass is measured using a ____________________.
Quiz

3. A ___________________________ tells us how much space something takes up.

graduated cylinder

tape measure

4. Density determines that something will __________ or __________.

sink

crash

float
Matter comes in many shapes, colors and textures. Almost anything you can think of has a shape, certain color and is either rough, smooth, bumpy, soft or hard to touch.

Quiz

Can you think of an object right now? Describe it!

Object: ____________________________________________

Shape: ___________________________  Color: ________________
Quiz

What does it feel like?

Describe it to your friends and see if they can guess what it is!

Matter can change at different temperatures. It can change
from a solid, to a liquid or to a gas. Let's look at how matter changes with temperature.

**SOLIDS:**

A solid has a definite shape and volume. Bricks, cars, crackers and a camera all are solids. These
Lesson 1: Properties of Matter

Things will not melt if their temperature changes. They stay the same shape and volume.

Quiz

1. Solids have _______________ & _______________

   |   |   |
   |   |   |
   |   |   |
   |   |   |

   shape | liquid | volume

2. Can solids melt? yes no
LIQUIDS:

Other objects that are solid such as ice, cheese, butter and ice cream will melt and change to a liquid if they are heated up.

Let's think of having an ice cream on a hot day. No matter how fast you lick the ice cream, some of it still drips.
down your hand! That is because the temperature changed it from a solid to a liquid. Liquids have no shape. They take the shape of whatever you put them in. If you have a square pool and you add water, the water will take the shape of the pool. If ice, cheese, butter and
Ice cream will melt if they return to a cold temperature.

Quiz

1. Do liquids have a shape?  yes  no

2. Can a solid change to a liquid?  yes  no
Lesson 1: Properties of Matter

GASES:

Sometimes a liquid can heat up and become a gas. Have you ever seen water boiling on the stove and steam rising from it? The steam is a form of water vapor called evaporation and that is a gas. Try blowing on a mirror.
For a second you can see steam on the mirror. That is water vapor coming from your own body! You can also see water vapor on the mirror after you take a shower.

The water becomes hot and changes to a gas. Gases have no shape and no volume.
Lesson 1: Properties of Matter

Quiz

1. Can liquids change to a gas?  yes  no

2. How does a liquid change to a gas?  it cools down  it heats up

3. Steam is called a gas or ________________.

a  solid  water vapor  dirt
Let's test the density of objects.

You will need:

- a container to hold water
- glue
- scissors
- water

Objects shown on page 26