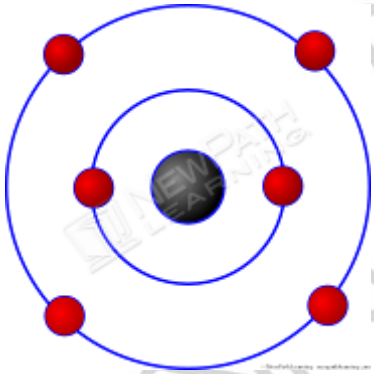
MATTER

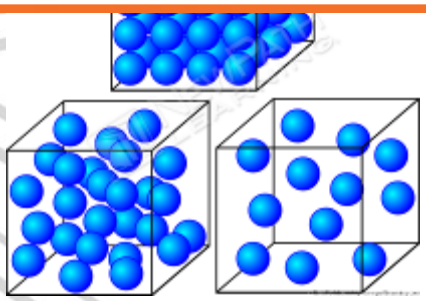
Matter is ALL Around Us!

Matter is anything that **takes up space and has mass**. Matter is made up of atoms. **Atoms** are the basic building blocks of matter and make up all objects.



Lesson Checkpoint:

States o



Solid: A state of matter in which **molecules are packed tightly together** so they can't move around. Solids always hold the same basic shape. An example of a solid is a rock.

Liquid: A state of matter in which the molecules are close together, but are able to move around slowly. Liquids take the shape of whatever they are poured into. An example of a liquid is water.

Gas: A state of matter in which the molecules are far apart and can move around freely. Gas has no shape. Oxygen is an example of a gas.

Lesson Checkpoint: What are the three states of matter?

Matter can Change States!

Not to New York, California, or Texas…matter change states from **solid, liquid, or gas.**

An exampl
an ice cub **uid**…when
the liquid i

Types of

A **physical change** is when matter changes size, shape, or state but **doesn't** change the particles that make up matter.

An example of physical change: shaping clay into different shapes, you change the shape of the clay but not what the clay is made of.

A **chemical change** changes what particles of matter are made of, which produces a new kind of matter.

An example of chemical change: combining baking soda + vinegar = carbon dioxide. The carbon dioxide is the new matter created.

Lesson Checkpoint:
What is the difference between a physical change and a chemical change?

Properties of Matter

Size: A pr bject is.

Shape: A bject.

Mass: A p in an object.

Volume: space something takes up.

Flexibility: A property of matter that refers to the ability an object has to be stretched without breaking.

Buoyancy: The ability an object has to float in a liquid.

Lesson Checkpoint:
What are three properties of matter?

Measuring Matter: Units of measurement

Meters, centimeters, grams, and liters are all examples of units of measurement.

For example, meters and centimeters are units of measurement that can be used to measure the **length** and **width** of an object.

Tools used for measuring:

Many properties of matter can be measured using different tools.

For example, **volume** is an amount of space measured in units. A **graduated cylinder** can be used to measure volume.

Mass can be measured using a **pan balance**.

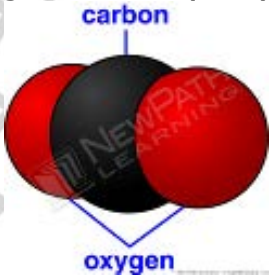
Lesson Checkpoint:
What can be used to measure volume?

What happens what matter is mixed, dissolved, or combined?

A **mixture** is a combination or two or more substances. The substances in a mixture are **physically combined**, which means they can be separated. Substances that are mixed together have the same properties as they did before they were mixed together. When you add chocolate chips to your cookie dough before you bake the cookies, you make a mixture of dough and chips. You could separate them again if you had to, since one did not dissolve in the other. That is a mixture.

A **solution** is when one or more substances are dissolved in another substance. A **solute** is the substance that is dissolved in the solvent. The **solvent** is the substance that dissolves another substance. **Solubility** refers to the ability of one substance to dissolve into another substance. When you make lemonade, you combine water, lemon juice, and sugar together to make something new: lemonade. You can't separate the sugar from the lemon juice or water once you mix them t

Compounds are substances that are made up of more than one type of atom and are chemically combined. For example, carbon dioxide is made up of carbon and oxygen atoms (CO_2).



Lesson Checkpoint:
What is a mixture?