

Physical & Chemical Properties and Changes

Properties and Changes

- All substances have physical properties and chemical properties.

Example:

A log's physical properties would include its mass, volume, density, the type of wood it came from...



Properties and Changes

- All substances have physical properties and chemical properties.

Example:

A log's chemical properties would include flammability (how likely it will be to burn).



Physical Properties and Changes

Physical Properties

Physical Properties: used to observe or **describe** characteristics of matter.

How would you observe or **describe** this object?

- Size
- Shape
- Density
- Materials
- Color



Physical Properties

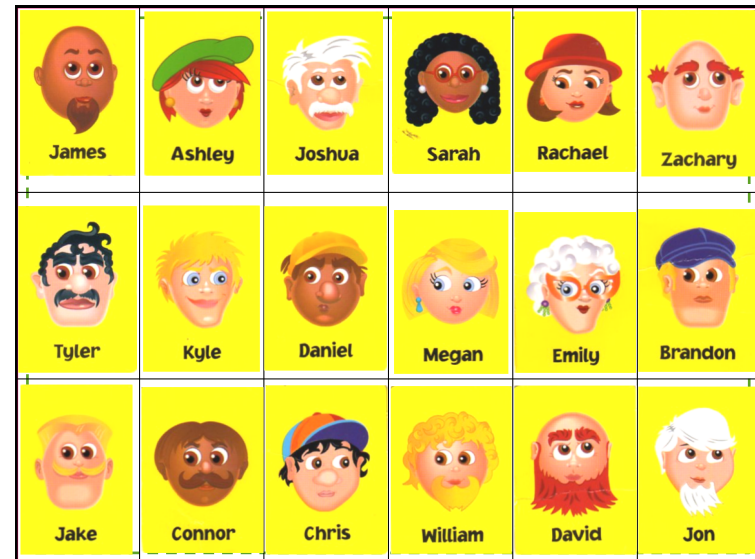
When we observe or **describe** something or someone we use “driver’s license” descriptions.

Weight, Height, Eye Color, Hair Color

We can observe or describe matter in the same way.

Physical Properties

Use physical characteristics to determine who I am...



Physical Properties DO NOT change the **structure** of matter when it is observed or **described**.



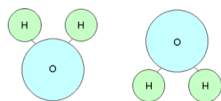
Physical Properties

Things you observe and can **describe** about matter:

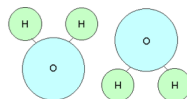
- Color
- Size
- Smell
- Freezing Point
- Melting Point
- Mass
- Shape
- Volume
- Density

Physical Properties

- What is the “structure” of water?



- What is the “structure” of ice?



- What is the “structure” of steam?



Physical Properties

PHASE CHANGE

We observed how H_2O is different in each phase, but the structure never changed!



Physical Properties and Changes

When a physical property (like phase change) is altered we called it a

PHYSICAL CHANGE

In other words: A **physical change** makes a change to the **APPEARANCE!**

It takes a **physical change** to change water to steam, or ice to liquid.

Physical Properties and Changes

Shape



The shape of the wood changes when you cut it into the shape of a bat. But it is still a piece of wood.

Physical Properties and Changes

Shape



The shape of the pencil tip changes when you put it in a sharpener. But it is still a pencil.

Physical Properties and Changes

Melting Point



The ice cream melted.
But does it still taste like ice cream?

Physical Properties and Changes

You can think of physical changes like changing the font of a word...



The "structure" of the word is still the same, even though the physical appearance changed.