Warm-Up:

Describe any object in the room in as much detail as you can.

(like I-spy)

On your notes page in the lab book.

S8P1g: Identify and demonstrate the Law of Conservation of Matter.

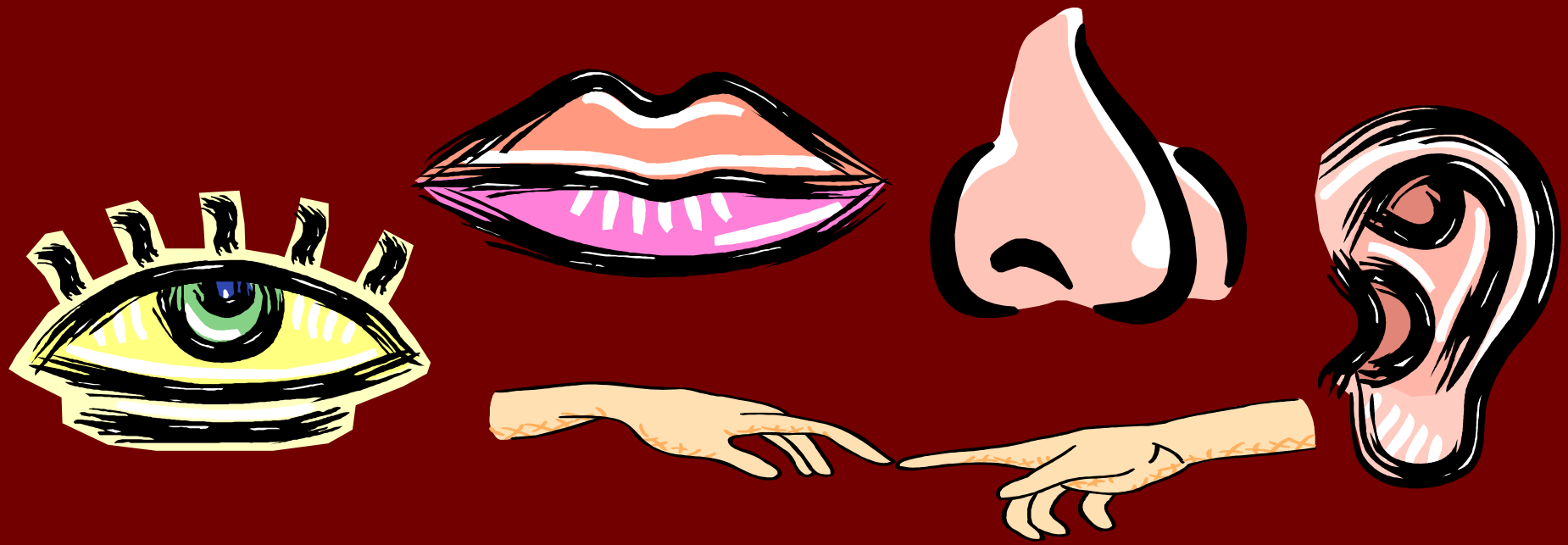
- d. Distinguish between physical and chemical properties of matter as physical (i.e., density, melting point, boiling point) or chemical (i.e., reactivity, combustibility).

We can say that all of the things you used to describe those objects are **PROPERTIES** of that substance.

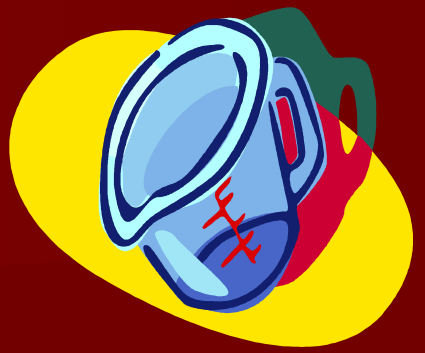
- A property is any characteristic that can be used to describe and identify matter
- Two types of properties
  - Physical
  - Chemical

Physical Properties

- A characteristic that is observed or measured without changing the identity of a substance.
- Physical properties can be identified using the 5 SENSES!



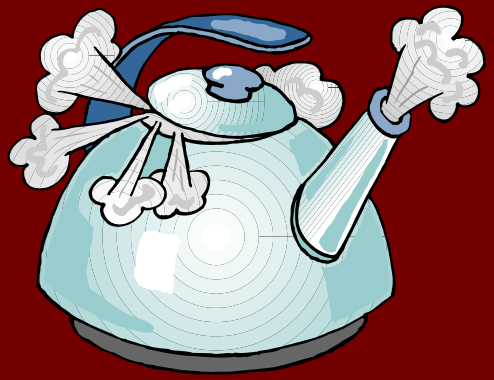
Examples



- Mass
- Volume
- Color
- Hardness
- Magnetism
- Weight
- Phase change at specific temperature
- Any more?

A couple more…

- Density
  - Mass/Volume
- Melting Point
  - Temp. that a solid turns into a liquid
- Boiling Point
  - Temp. that a liquid turns into a gas



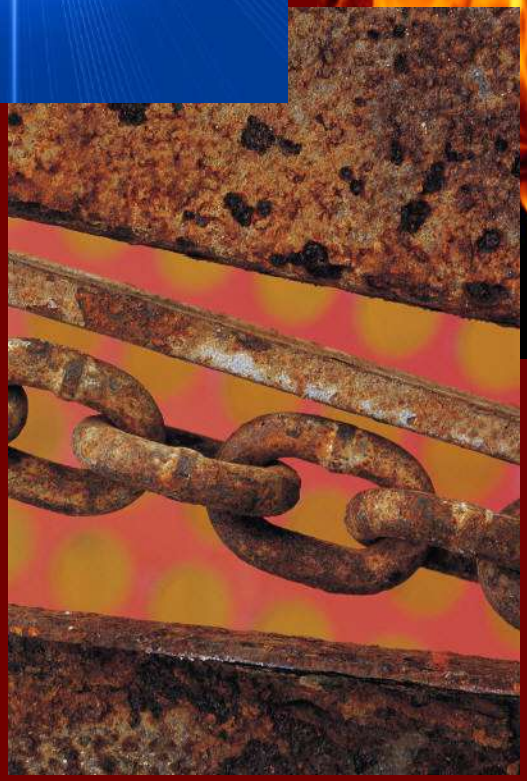
Chemical Properties

- Chemical properties can only be observed when 2 or more substances combine and something NEW is made.

$$Na_2O_2 + H_2O =$$

Examples

- Reactivity
- Ability to
  - Burn
  - Rust
  - React to light
  - React with acids
- Any more?

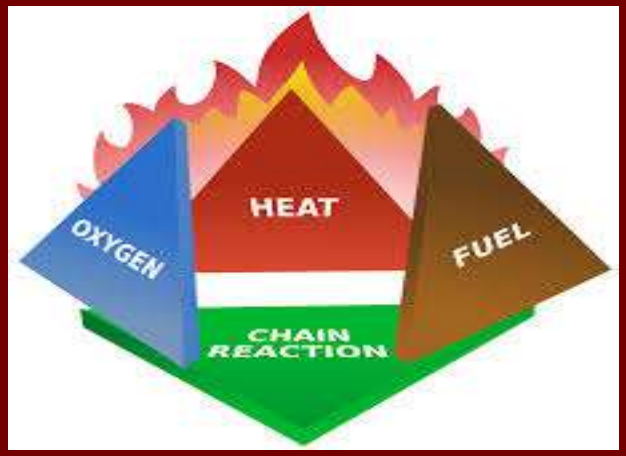


Reactivity

- How likely an element is to form bonds with other elements.
- Examples:
  - Gun powder is more reactive than baby powder
  - Vinegar is more reactive than water

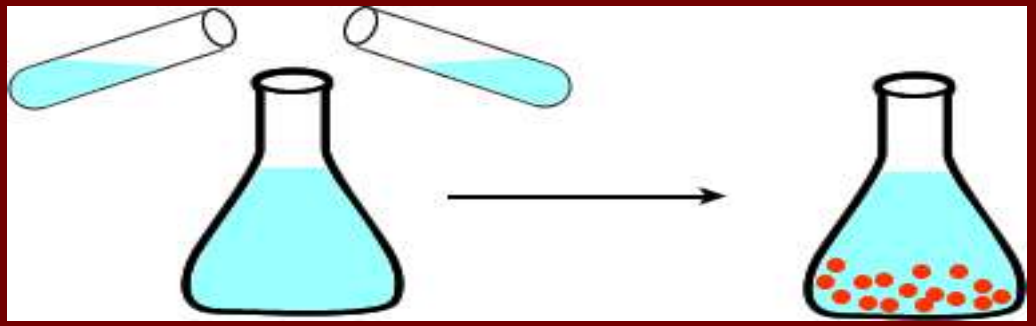
Combustibility / Flammability

- How likely an element is to burn or catch fire.
- Example
  - Wood is more combustible than plastic
  - paper is more combustible than metal



Precipitate

- When a solid is formed in a solution as a result of a chemical reaction.
- Example
  - Sour milk - over time bacteria in milk build up and produce acid. Acid turns milk sour. Clumps form then form.



Oxidation

- Occurs when a substance loses some of its electrons.
- Electrons are negative charges on elements
- Usually occurs when substances combine with oxygen
- Examples
  - Rust - oxygen and iron combine
  - Sliced apple turns brown
  - Tarnished silver

Law of Conservation of Matter

- The Law of Conservation of Matter States - Matter cannot be created or destroyed only transformed.