
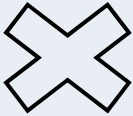
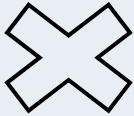

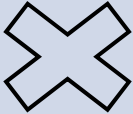
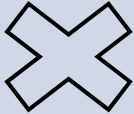

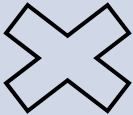
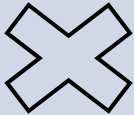




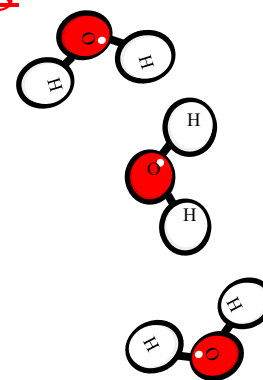
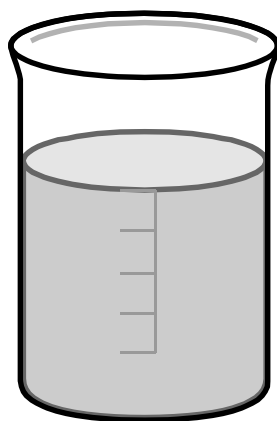
Property	Metal	Nonmetal	Metalloid
Lustre	shiny	dull	shiny*
Malleable			 *
Ductile			 *
State (Rm Tp)	solid*	solid / gas*	solid
Conduct heat			 *
Conduct electricity			<i>semi</i>

(*) – there are exceptions to these properties

Physical Change

- A change in **shape** or **state** of a substance
- *No evidence of a new material forming*
- *Examples*

- crushing, melting, boiling, cutting...



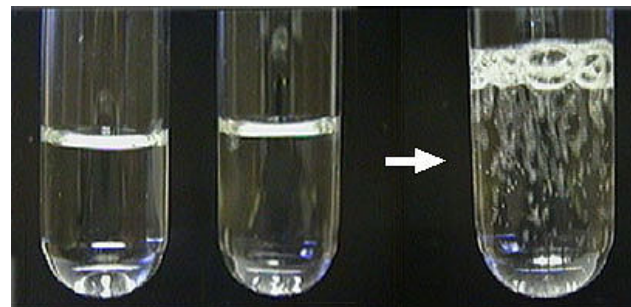
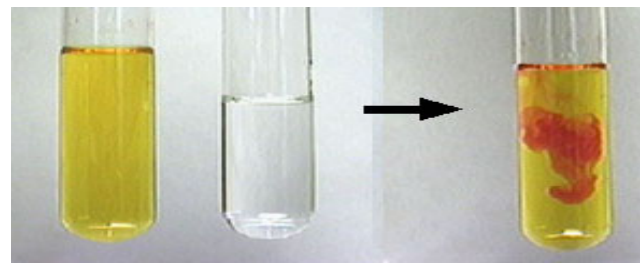
Anything that changes what it "**looks** like"
NOT "what it **is**"

Chemical change

- A change in chemical properties of a substance
- **Means a new substance is formed
– *a chemical reaction has happened!*

Evidence of a chemical reaction (*and chemical change*):

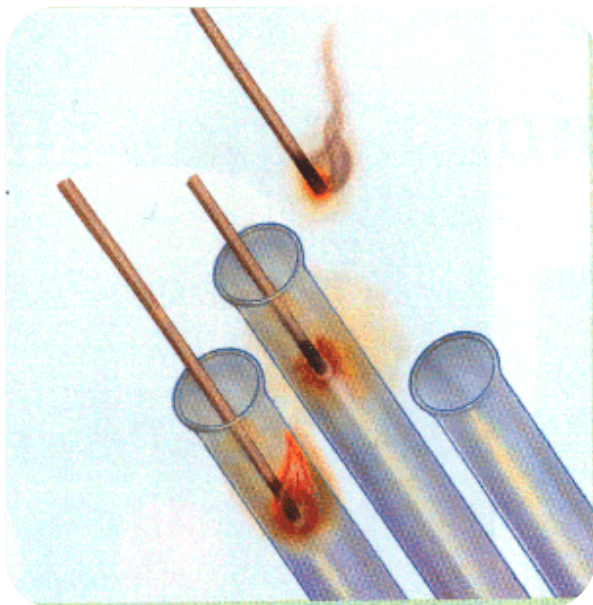
1. A *change* in colour
2. A *change* in smell
3. Fizzing or bubbling
(*new gas being made*)



Testing for Gases

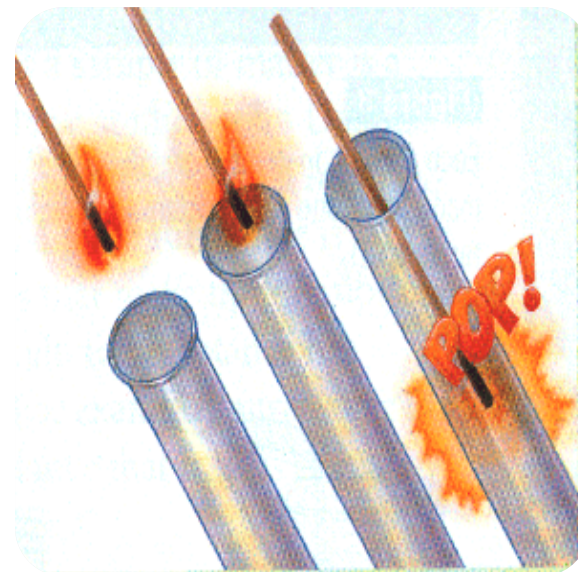
Oxygen

- flame re-ignites or glows brighter



Hydrogen

- gas explodes with a “pop”



4. A **new solid forms** from a mixture of liquids or the mixture goes cloudy
- *This new solid is called a **precipitate***



5. A *change* in **energy**
- “Energy” could be **light, heat, sound** – think of the most obvious change in energy reaction – an **EXPLOSION!**



5 Signs of a Chemical Change:

1. Change in COLOUR

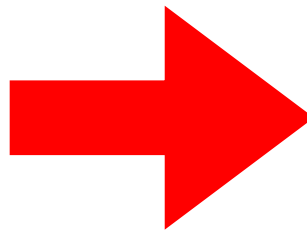
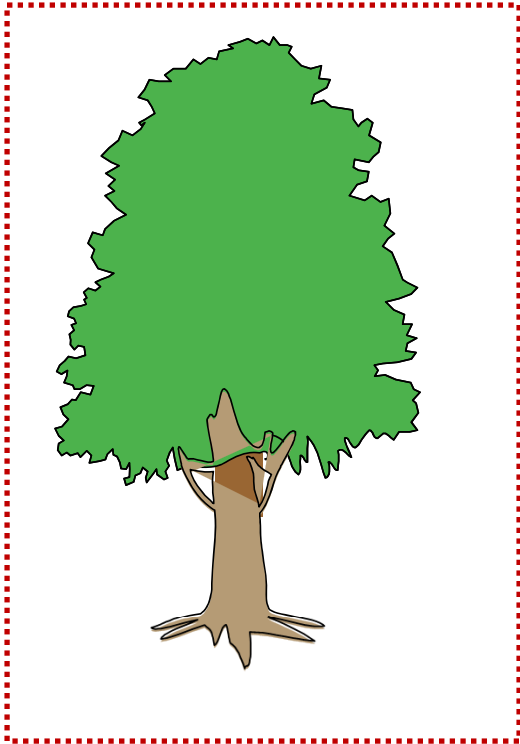
2. Change in SMELL

3. New GAS formed
(*bubbles or fizzing*)

4. New SOLID formed
(called *precipitate*)

5. Change in ENERGY
(*hot or cold*)





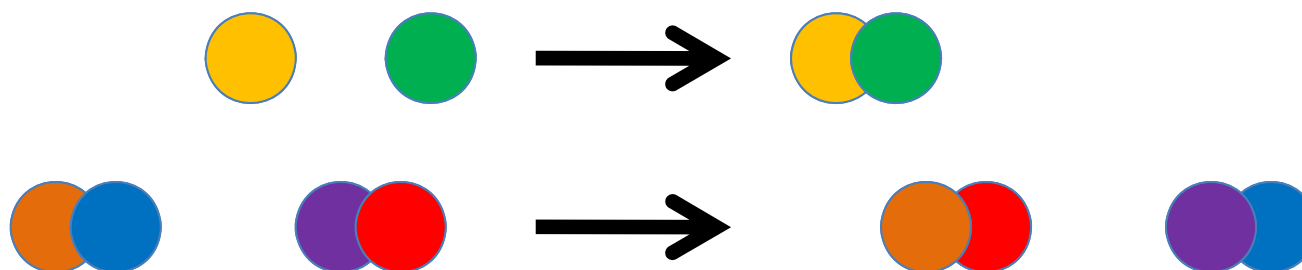
 **1000 kg**

1000 kg

Would the tree and the by-products weigh the same?

Law of Conservation of Matter:

In any chemical reaction matter cannot be created or destroyed.



Atoms will *rearrange* to form *new* compounds – with *new* properties, but the *number and type* of atoms will *not change* during the reaction