

CHANGES IN MATTER



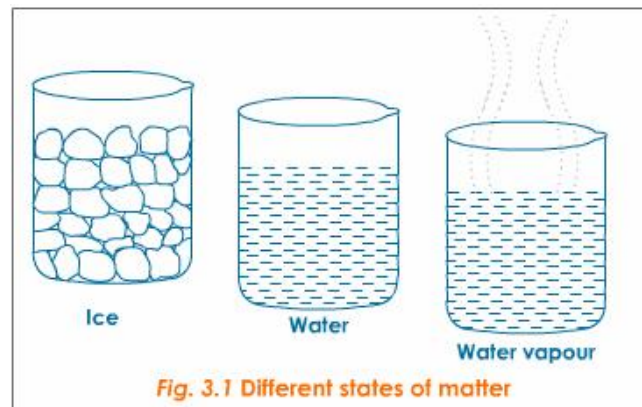
Physical Changes in Matter

- Change in the appearance or form of an object
- Composition of the object does not change



Examples of Physical Changes

- Chewing – breaking food into smaller pieces
- Changing from one state of matter into another (solid, liquid, gas)
- Weathering
- Breaking a bottle



Chemical Changes in Matter

- Change in the composition of an object
- For example, sodium and chlorine combine to create NaCl or salt.
- Difficult to reverse



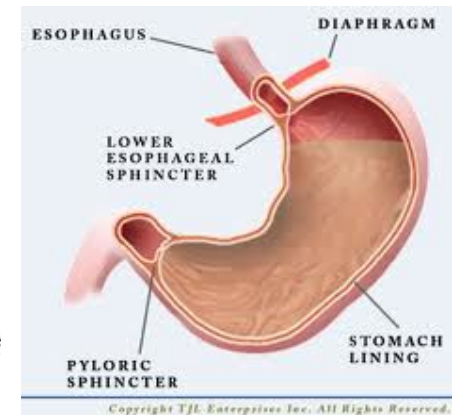
Detecting Chemical Changes

- Release or gain of energy by the substance, this can be in the form of heat or light
- Change in odor
- Change in color
- Production of gases or solids



Examples of Chemical Changes

- Rusting – iron reacts with oxygen
- Burning – Oxygen combines with carbon
- Cooking – adding heat changes ingredients
- Digesting food – chemicals in the body change the nature of the food



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Mixtures

- A combination of substances in which the individual substances do not change but are mixed together
- Mixtures can be separated using physical or mechanical means



Examples of Mixtures

- Salad dressing (oil and vinegar)
- Soil (mixture of inorganic and organic material)
- Salt water
- Air (different gases)



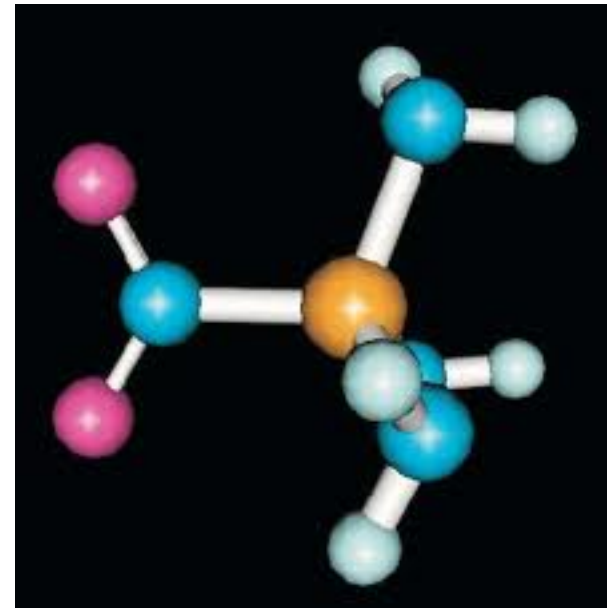
Soluble

- When a substance is able to dissolve in another substance
- Example: sugar, salt, and vitamins are soluble in water
- This is a physical change because the dissolved substance can be separated by drying



Compounds

- Matter that is made up of two or more substances and has properties different from each of the substances that produced it.
- A chemical change takes place.



Examples of Compounds

- H_2O (water)
- NaCl (salt)
- CO (Carbon Monoxide)
- H_2O_2 (Hydrogen Peroxide)

