CHANGES IN CHEMISTRY

A physical change...

Expansion...

Contraction...

Examples:

Dissolving...

Examples:

Mixing...

Examples:

Changes of state...

Deposition...

Heat is:

Sublimation...

Heat is:

Freezing...

Heat is:

Melting...

Heat is:

Evaporation...

Heat is:

Condensation...

Heat is:

A chemical change...

Colour changes...

Examples:

But...

A gas is produced...

Examples:

But...

A precipitate forms...

Examples:

Energy is produced or absorbed...

Examples:

But...

Exothermic reactions...

Endothermic reactions...

CHANGES IN CHEMISTRY

A physical change…
No new substances are produced during the change

Expansion… Heat increased – solids, liquids and gases
expand and take up more space (Volume increases but mass stays the same) Density decreases

Contraction… Heat decreased-solids, liquids and gases
contract and take up less space (volume decreases but mass stays the same)

Examples: T… not a…

Changes of state…

Deposition…
gas to a solid
Heat is: **removed**

Sublimation…
Solid to a gas
Heat is: **added**

Freezing…
solidification
Liquid to a solid
Heat is: **removed**

Melting…
Liquid to a solid
Heat is: **removed**

Evaporation…
Liquid to a gas
Heat is: **added**

Condensation…
Gas to a liquid
Heat is: **removed**

Dissolving…
Solute (solid) Solvent (liquid)
Solute + Solvent = solution
Examples: **salt in water – no new substance is formed- salt can be recovered- crystallisation**

Mixing…
Mixing of two substances- no new substance is formed
Examples: **sand & water**
Coloured balls, paint

A chemical change…
A new substance is produced

Colour changes…
New substances produced often indicated by colour change
Examples: rust, burning. Ripening fruit,
But… snow (white) to liquid water (clear), mixing paint

A gas is produced…
Gas produced during a reaction usually seen as bubbles, new smell, smoke
Examples: rotten eggs,
But… boiling is not chemical change

A precipitate forms…
New solid produced when two solutions are mixed. Solid falls out of solution
Examples: carbon dioxide bubbled through lime water, kidney stones, scale or lime in pipes

Energy is produced or absorbed…
Change in energy – heat, (produced or absorbed) light or both
Examples: glow sticks, fireworks, sparklers, explosions
But…steam burns
Sweating to produce
Cooling –physical not che…ical

Exothermic reactions…
Heat is produced – **acid plus …metal**

Endothermic reactions…
Heat is absorbed – chemical ice packs in first aid kits