**Physical and Chemical Properties – Physical and Chemical Changes**

**Physical Properties**

* are features of matter which can observed or measured without changing the composition
* are used to observe or describe matter

**McRae physical properties--how I look!**

**Examples of Properties of Matter**

|  |  |  |  |
| --- | --- | --- | --- |
| **Property** | **Info/Examples** | **Property** | **Info/Examples** |
| State of matter |  | Density |  |
| Colour |  | Malleability |  |
| Smell |  | Ductility |  |
| Taste |  | Solubility |  |
| Texture |  | Conductivity |  |
| Melting point |  | Boiling point |  |
| Ferro-magnetism |  |  |  |

**Physical Changes**

* a physical change takes place without any changes in molecular composition
* the same element or compound is present before and after the change
* physical changes are related to physical properties since some measurements require that changes be made
* the appearance may change but you still have the same substance as before
* can be easily reversed

**Examples of Physical Changes**

**1)** Change of state

**S ↔ L ↔ G**

e.g. Ice melting

e.g. Dry ice subliming

**2)** Dissolving

**3)** Trauma

**Characteristic Physical Properties**

* a feature of matter that is specific to the substance--can be used to

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**McRae characteristic physical properties**

e.g.

**Chemical Properties**

* how one chemical reacts with another chemical
* you have to see the chemical "in action" to determine

**McRae chemical properties--how I behave!**

|  |  |  |  |
| --- | --- | --- | --- |
| **Property** | **Info/Examples** | **Property** | **Info/Examples** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Characteristic Chemical Properties**

* a feature of matter that is specific to the substance--can be used to

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**McRae characteristic chemical properties**

e.g.

**Chemical Changes**

* always result in new substances--completely different that the substance you started with
* the physical appearance changes and you have different substances than what you had before
* both physical and chemical properties may change
* the atoms rearrange and form new substances
* **some** chemical changes are difficult if not impossible to reverse

**Signs of Chemical Change**