NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE DUE: \_\_\_\_\_\_\_\_\_\_\_\_

TEACHER: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**/28**

**Year 8 Term 1 – Chemistry**

**HOMEWORK SHEET No. 4 – LG 3**

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| /4 | **1.** Write a definition and list an example for:(a) Physical Change – **a change in the shape or appearance of a substance which can be reversed. An example is a phase change like melting, or a shape change like tearingor cutting paper.**(b) Chemical change – **a change where a new substance is formed and is NOT reversible. An example is any chemical reaction like rusting of a metal, cooking, or combustion (burning)** |
| /4 | **2.** List the four common indications that a chemical change (chemical reaction) has occurred:* **Colour change**
* **Temperature change**
* **Precipitate (solid) formed**
* **Gas is given off (bubbling)**
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| /8 | **3.** For each of the following examples, categorise it as a chemical reaction or a physical change has occurred. In each instance state why you made that decision.

|  |  |  |
| --- | --- | --- |
| Example | Chemical reactionorPhysical Change | Why you made that decision |
| Frying an egg | **Chemical** | **Frying and egg is cooking which cause changes in food which are NOT reversible** |
| Iron rusting | **Chemical** | **The rust formed is a new substance which cannot be reversed to remake the iron.** |
| Butter melting on toast | **Physical** | **The butter melts into the toast but melting is a reversible change** |
| Toasting Bread | **Chemical** | **Toasting causes irreversible changes to the bread** |
| Erasing a pencil mark | **Physical** | **Erasing a pecil marks just transfers the pencil mark onto the eraser. There has been no permanent or reversible change to the pencil mark other than where it is.** |

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| /4 | **4.** Explain how a burning candle can be used as an example of both physical change and chemical reaction **See the source imageThe chemical change in the candle is the combustion (burning). This is a non-reversible change to the candle wax, which is changed into carbon dioxide and water.** **The physical change to the candle is the melting of the wax around the edges of the candle. This wax has simply changed its shape but is still the same wax, and this change is reversible.** |
| /8 | **5.** Substances are used in certain situations because they have certain physical and chemical properties. For example – Lead metal is often used a sinkers in fishing because Lead is a metal which is dense, easily shaped, and not soluble in water.For each of the following substance explain the properties which make this substance suited to it purpose.

|  |  |  |
| --- | --- | --- |
| Substance | Purpose | Explanation based on properties |
| Lead metal | Sinker in fishing | Dense – weights down the hook so it sinks in waterEasily shaped – easy to make into shapes to thread a fishing line throughNot soluble in water – does not dissolve and disappear in water |
| Copper metal | Electrical wiring | **Malleable (flexible) – copper is easily bent into shapes such a wires which can wrap around objects****Conducts electricity – copper is an excellent conductor of electricity si it makes very good electrical wires.****Copper is not reactive – copper does not rust so it stays a good conductor for a very long time** |
| polystyrene | Esky / Coolers / packaging | **Low density – it can be used without creating a very heavy esky****Poor conductor of heat – it does not conduct heat very well so it stops the heat transfer into and out of eskies** |
| Blue tac | Stick posters on wall | **“Sticky” – it sticks (adheres) well to almost all surfaces so is useful sticking two materials together****Flexible – it can be shaped easily so it can be used in a range of different situations** |
| Coal | Fuel for burning in power station, or barbeque, or fire | **Reactive – coal reacts quite easily with oxygen in the air so it burns well****Low density – so it is relatively easy to transport****High energy density – contains a lot of chemical energy which means that it can release a great deal of heat energy.** |

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