To show the physical properties of metals and non metals.

Equipment

Small container with samples of zinc strip, lead, copper, aluminium, wool, plastic, sulphur, wood and rubber

250 ml beaker, 1AA battery, 1 lamp, 3 wires

Procedure

Part A: Can you bend the metal samples.

Yes or No?

If you can bend the metal it is said to be malleable.

Part B: Can you stretch the metal samples?

Yes or No?

If you can stretch the metal it is said to ductile.

Part C: Set up the experiment as shown.

Test each sample and note if the lamp glows.

battery

lamp

wire

Sample being tested

If the lamp glows it is an electrical conductor

If it doesn’t glow it is an electrical insulator.

Part D: Add all the samples to a beaker of hot water

Leave the samples for 10 minutes.

250ml beaker

Hot water

Samples

Remove each sample and note whether it is hot or cold.

If the sample is hot it is a heat conductor.

If the sample is cold it is not a heat conductor and is called an insulator.

Observations

Record all your results in the table.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Name of sample | Is the sample shiny?  √ or X | Is it bendy  (malleable)?  √ or X | Is it stretchy  (ductile)?  √ or X | Does the lamp glow?  √ or X | Is it a conductor of electricity?  √ or X | Is the sample hot?  √ or X | Is it a conductor of heat?  √ or X |
| Wood |  |  |  |  |  |  |  |
| Plastic |  |  |  |  |  |  |  |
| Copper |  |  |  |  |  |  |  |
| Rubber |  |  |  |  |  |  |  |
| Zinc |  |  |  |  |  |  |  |
| Aluminium |  |  |  |  |  |  |  |
| Wool |  |  |  |  |  |  |  |
| Lead |  |  |  |  |  |  |  |
| Sulphur |  |  |  |  |  |  |  |

Conclusions

All metals are \_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_ .

All metals conduct both \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Non metals are not \_\_\_\_\_\_\_\_\_,\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Non metals do not conduct \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. They are known as insulators.

**Vocabulary**

|  |  |
| --- | --- |
| **English** | **Arabic** |
| **Malleable** | **طروق** |
| **Ductile** | **قنية** |
| **Conductor** | **موصل** |
| **Electricity** | **كهرباء** |
| **Insulator** | **عازل** |
| **Glow** | **توهج** |
|  |  |