**Class 5 – Homework – Lumley & Raby - 26.9.22**

**Q1.**

**Grouping materials**

(a)  Patrick collects some objects made of different materials.

The photograph below shows what he collects.

Patrick groups his materials in a diagram to help him sort them by their properties.

Write **cotton wool** and **steel** in the correct places on the diagram below.



1 mark

(b)  The shoes below are used for different activities. They are made out of different materials.

The table below gives a property of steel and explains why this property is useful for tap dancing shoes.

Complete the table below to explain why it is useful for wellington boots to be impermeable.



|  |  |  |  |
| --- | --- | --- | --- |
| **Material** | **Shoe** | **Property** | **Why the property is useful** |
| steel | tap dancing shoe | **hard** | it makes a noise when hit |
| plastic | wellington boot | **impermeable** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1 mark

(c)  This tea towel is made of a soft material.

Name **TWO** other properties of the soft material that make it good to use for a tea towel.

  **1.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2 marks

**Q2.**

**Lighthouse**

|  |  |  |
| --- | --- | --- |
| (a)   | George makes a model lighthouse using a cardboard tube and a yoghurt pot.He makes a circuit to make his lighthouse light up.The yoghurt pot lets some light through. |  |

What is the name given to a material that lets only some light through?

  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1 mark

(b)  George wants to make his lighthouse have a brighter light.

Tick **ONE** box to show what George could use instead of a yoghurt pot to make the lighthouse appear brighter.



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | plastic cup |  |  | tin can |  |
|  | china egg cup |  |  | part of cardboard egg box |  |

1 mark

(c)  George uses one bulb, one cell (battery) and two wires to make the circuit for his lighthouse.

Draw the circuit diagram using the correct symbols for the lighthouse.



|  |
| --- |
|   |

2 marks

(d)  Write **true** or **false** next to each sentence about the circuit.

|  |  |  |
| --- | --- | --- |
|  | George’s circuit will only work if... | **True** or **False**? |
|   | the cell is connected to the bulb. | \_\_\_\_\_\_\_\_\_\_\_\_ |
|   | there are gaps in the circuit. | \_\_\_\_\_\_\_\_\_\_\_\_ |
|   | he uses wires of the same length. | \_\_\_\_\_\_\_\_\_\_\_\_ |
|   | the wires are connected to the same end of the cell. | \_\_\_\_\_\_\_\_\_\_\_\_ |

2 marks

(e)  What component should George add to his circuit to make the light brighter?

  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1 mark