

6 Different materials have different properties.

Look at the table.

It shows some properties of six materials.

material	hardness (1 = soft and 10 = hard)	melting point (1 = low and 10 = high)	solubility in water	strength (1 = weak and 10 = strong)
A	9	10	soluble	9
B	4	10	insoluble	1
C	3	9	insoluble	10
D	10	10	insoluble	10
E	4	4	insoluble	6
F	9	9	insoluble	9

(a) Which material in the table **dissolves** in water?

.....

[1]

(b) It is **not** possible to tell which of material **C** or material **D** is the stronger.

Explain why.

.....

..... [1]

(c) Mike sorts the materials into two groups.

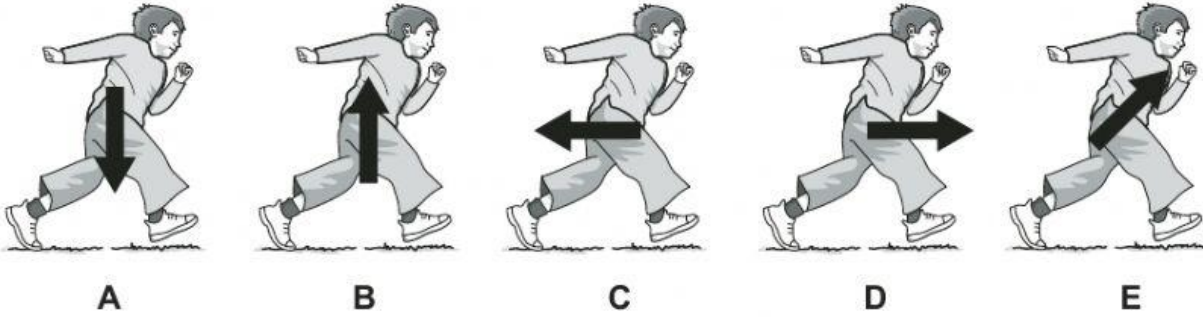
Group 1 – materials **A**, **D** and **F**

Group 2 – materials **B**, **C** and **E**

Which property did Mike use to sort the materials?

..... [1]

7 Pierre has five pictures showing him running.



He draws arrows on the pictures.

(a) Which picture shows the direction of the force of gravity?

Circle the correct answer.

A **B** **C** **D** **E** [1]

(b) Air resistance slows him down.

Which picture shows the direction of air resistance?

Circle the correct answer.

A **B** **C** **D** **E** [1]

8 Oliver investigates what happens to materials when they are heated.

Here are his results.

material	before heating	after heating
A	silver solid	white solid
B	green solid	black solid
C	colourless liquid	gas
D	white solid	white solid
E	white solid	colourless liquid

(a) Which material does **not** change when Oliver heats it?

.....

[1]

(b) Which material **boils** when Oliver heats it?

.....

[1]

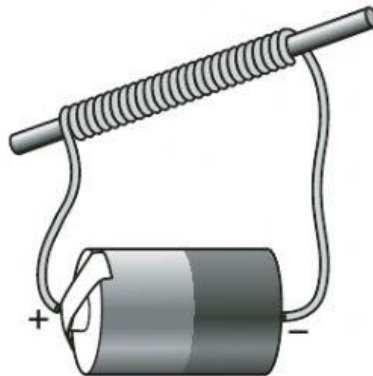
(c) Which material **melts** when Oliver heats it?

.....

[1]


9 An electromagnet attracts magnetic objects.

Look at the picture of an electromagnet.



Which objects does the electromagnet attract?

Tick (✓) the correct objects.

object	
 aluminium spoon	
 copper wire	
 iron key	
 plastic toy	
 steel nail	
 wooden ruler	

[2]

10 Lily counts the number of different organs in a human body.

How many lungs do humans have?

.....

How many kidneys do humans have?

.....

How many livers do humans have?

.....

How many stomachs do humans have?

.....

[1]

11 This question is about forces.

Decide if each statement is true or false.

Tick (✓) the correct box.

	true	false
forces make objects change speed	<input type="checkbox"/>	<input type="checkbox"/>
friction is a force	<input type="checkbox"/>	<input type="checkbox"/>
pitch is a force	<input type="checkbox"/>	<input type="checkbox"/>
weight is a force	<input type="checkbox"/>	<input type="checkbox"/>

[2]

12 Safia makes a musical instrument.

She pulls a rubber balloon over the top of a cup.



Safia pinches the rubber balloon with her fingers and then lets the rubber go.

A sound is made.

(a) Why does the rubber balloon make a sound?

..... [1]

(b) Describe how Safia can increase the **volume** of the sound.

.....
 [1]

(c) Describe how Safia can increase the **pitch** of the sound.

.....
 [1]