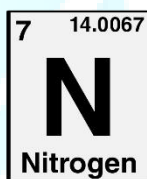
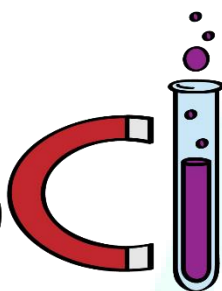
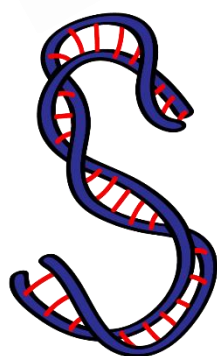


ASPIRE
INTERNATIONAL SCHOOL



Science Department

2023/2024

Year 4

Term 3, Week 1

ASPIRE

INTERNATIONAL SCHOOL

Name:

Class:

1 What is the difference between:

an electrical conductor and an electrical insulator?

2 Bow and Noon are making a circuit to test four different materials to see whether the materials conduct electricity or not. The steps they took in their investigation are written as sentences A–G. The steps are in the wrong order.

List A–G in the correct order.

- A To test their circuit they allowed the bare wires to touch to see whether the lamp came on.
- B They removed 1 cm of the plastic insulation at the ends of the wires.
- C They recorded their results.
- D They tested each material in turn by touching each end of the material with the bare wires.
- E They made a circuit with a battery, lamp in a lamp holder and connecting wire.
- F They took care to hold the wires where they had plastic insulation.
- G They observed to see whether the lamp came on. If the lamp came on, the material was an electrical conductor.

3 All metals conduct electricity. But not all metals conduct electricity equally well.

Copper is rated as 100.

Metals that conduct electricity better than copper have a rating over 100.

Metals that do not conduct electricity as well as copper have a rating below 100.

Here are the ratings for five metals:

Metal	Rating: How well does the metal conduct electricity?
Copper	100
Silver	105
Gold	70
Aluminium	60
Steel	10

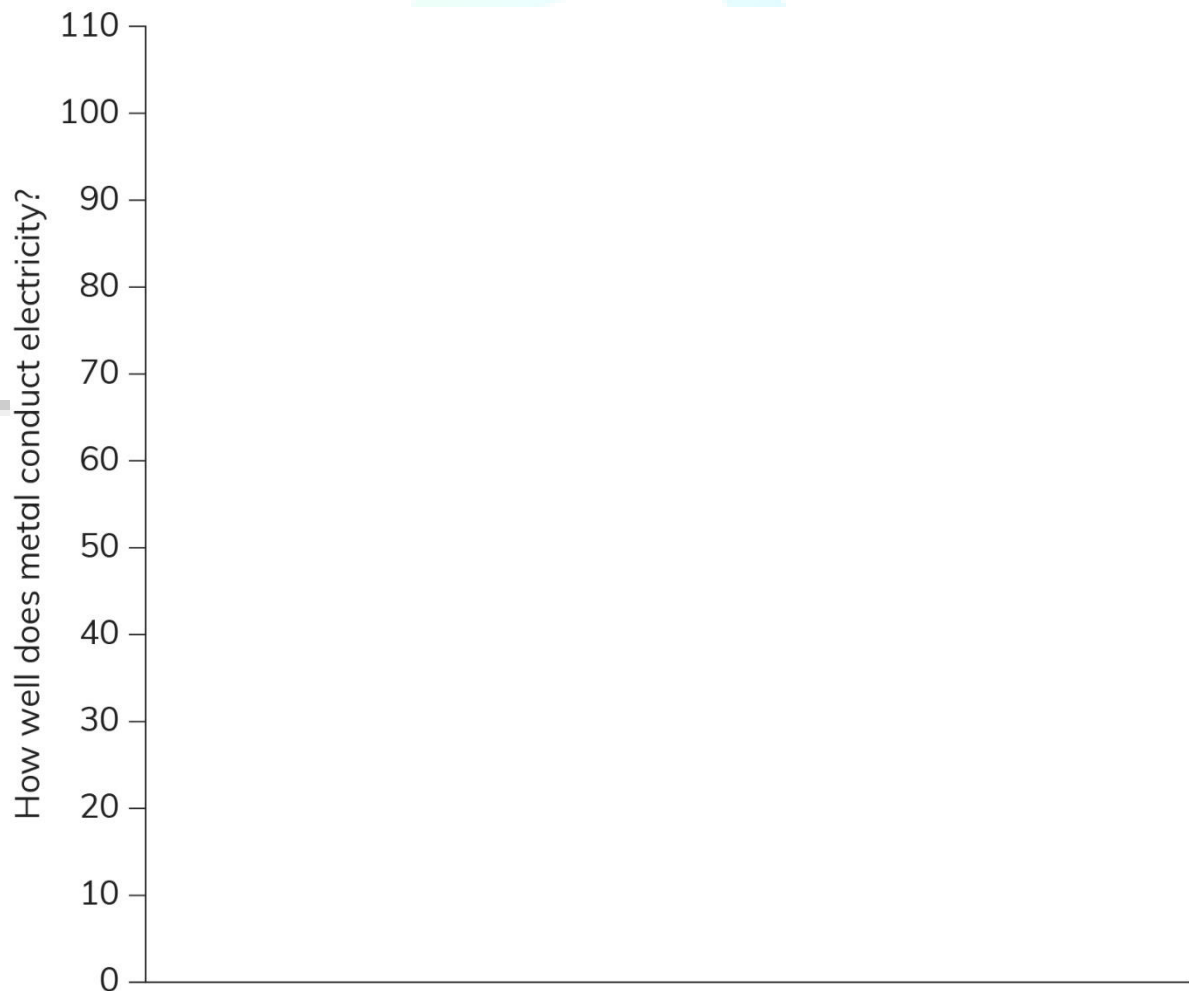
1 Which metals are the best and worst conductors of electricity?

2 Which metal is used for electrical wiring?

3 a Which metal conducts electricity better than the metal you answered in question 2?

b Why isn't this metal used for electrical wiring?

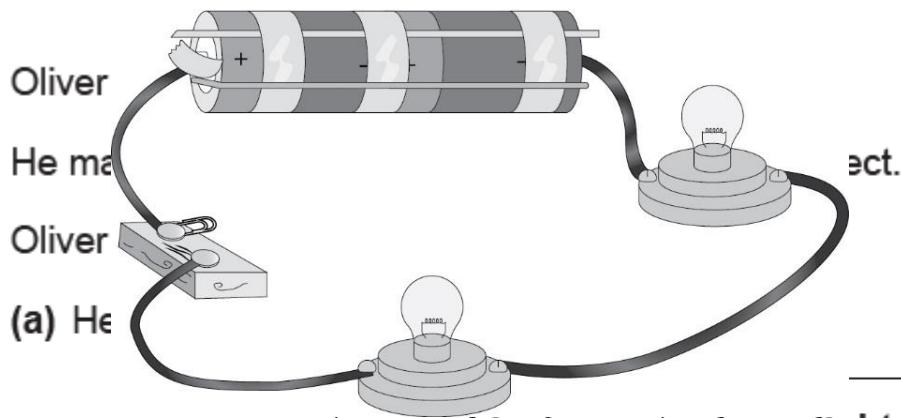
4 Use the data in the table to draw a bar graph.



5 Circle THREE of the following materials that are electrical insulators.

- | | | | | | |
|--------|-------|------|-------|-----------|---------|
| copper | glass | cork | steel | aluminium | plastic |
|--------|-------|------|-------|-----------|---------|

6

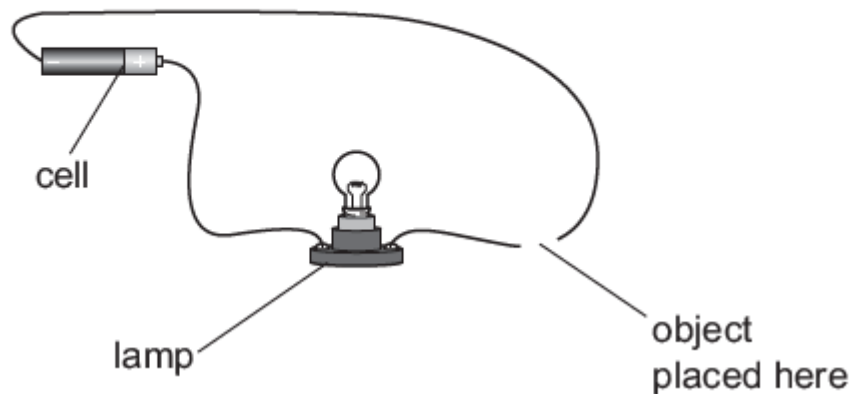


object	lamp lights?
A	yes
B	no
C	yes
D	yes
E	no

7

Oliver investigates electrical conductors and electrical insulators.

The diagram shows the equipment he uses.



Oliver places different objects between the wires.

He makes sure the ends of the wires touch the object.

Oliver records if the lamp lights.

(a) Here are his results.

object	lamp lights?
A	yes
B	no
C	yes
D	yes
E	no

Write down the letters of **all** the objects that are electrical insulators.

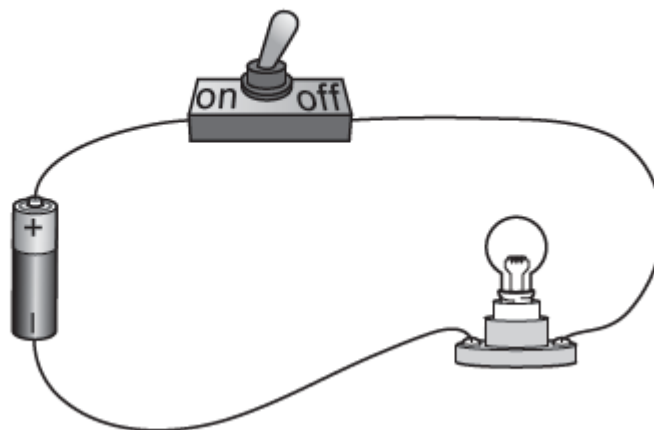
.....

(b) Oliver places a copper coin in the circuit. Predict what will happen to the lamp. Explain your answer.

The lamp will

This is because

8 Lily makes this electrical circuit.



(a) Explain why the lamp does **not** light.