

Conductors and Insulators

In this unit you are going to learn about

- conductors
- insulating materials



Activity 1

What are these objects made of? Fill in each blank with one of the metals below.

copper

gold

aluminium

silver





Why did the train conductor call an electrician?
He couldn't see the light at the end of the tunnel!!



aluminium

copper

allow easy flow of electricity.

silver

gold

allow free movement of electrons.

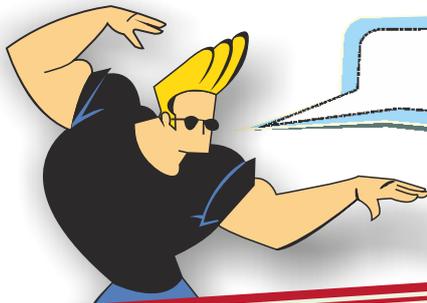
Do you know that these metals are good **conductors** of electricity?

Activity 2

Look at the pictures on the right. These are examples of good conductors made of different metals. First tick the names you see. Then write the missing picture.

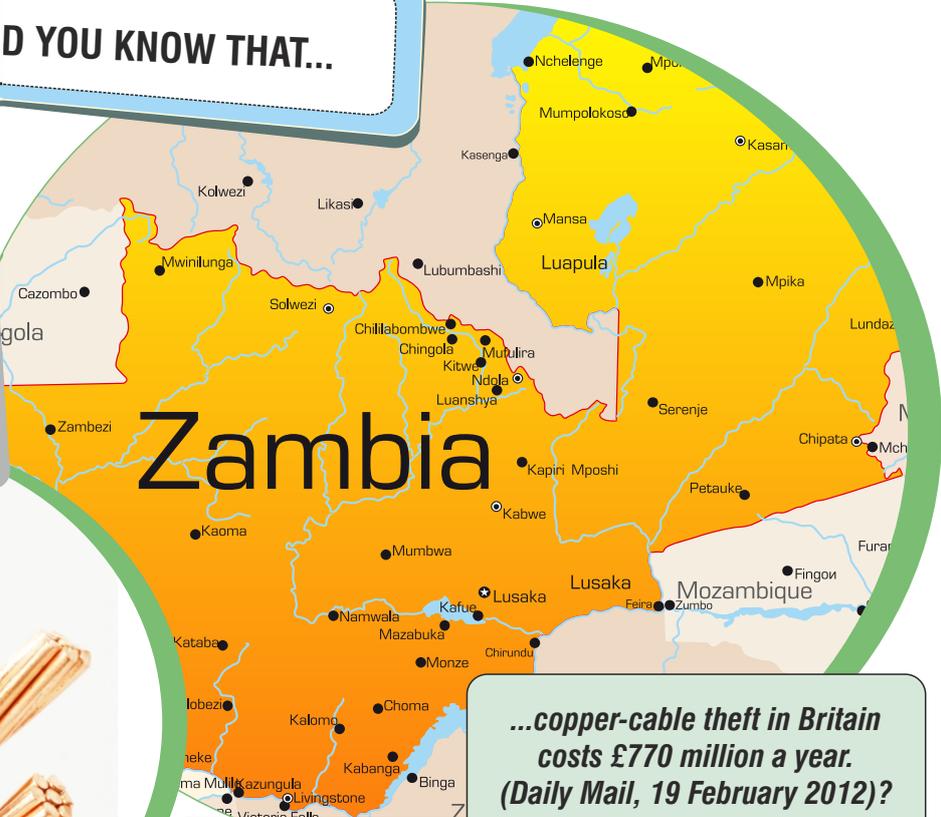
The picture of a _____ is missing.

- copper vase
- gold bracelet
- copper bracelet
- copper medal
- gold medal
- silver vase
- silver bracelet
- copper kettle
- aluminium door handle



DID YOU KNOW THAT...

...Zambia is one of the world's biggest copper producers?



...copper-cable theft in Britain costs £770 million a year. (Daily Mail, 19 February 2012)?

...copper is still commonly used for wires because it is a very good conductor of electrical current?



HOMEWORK

Find out how much copper costs.



Why is copper so expensive?



Activity 3

Look at the following insulating materials. Write their names in the blanks.



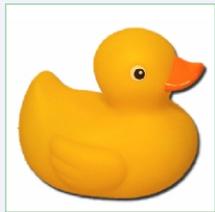
DID YOU KNOW THAT...



...**INSULATORS** do not let electrons flow very easily from one atom to another. Therefore they oppose the electrical current. In this way, they protect us from the dangerous effects of electricity?

Activity 4

Look at the pictures below. One of the objects in each set is made of a different material. Find the odd one out in each group. Then write your reason for your answer.

a	b	c	d	ODD ONE OUT <input style="width: 50px; height: 30px; border: 1px solid green;" type="text"/>
				

because it's made of _____, not of _____.

a	b	c	d	<input style="width: 50px; height: 30px; border: 1px solid green;" type="text"/>
				

because it's made of _____, not of _____.

a	b	c	d	<input style="width: 50px; height: 30px; border: 1px solid green;" type="text"/>
				

because it's made of _____, not of _____.

Activity 5

First read the four sentences below. Then fill in the blank spaces with the words in the bubble.

insulators — rubber — conductors
gold — poor — silver — glass

- 1 - _____ conduct electrical current very easily because of their free electrons.
- 2 - _____ oppose electrical current and make _____ conductors.
- 3 - Some common conductors are copper, aluminium, _____ and _____.
- 4 - Some common insulating materials are _____, plastic, _____ and wood.

Activity 6a

Select your answers (1-4) to the following questions(a-d).

a).....

Will an insulator make a light bulb light? Why or why not?

b).....

Will a conductor make a light bulb light? Why or why not?

c).....

Why are insulators useful?

d).....

Why are conductors useful to us?

1)

No, because it does not conduct electricity. It protects the wires

2)

Yes, because it conducts electricity. It helps make smooth flow of electricity

3)

They help protect wires from getting messed up, and they help us from getting hurt.

4)

They help make things work

Activity 6b

Do you agree with these answers. Discuss in pairs.

HOMEWORK



Remember that most metals are good conductors. Common insulating materials are wood, air, glass and rubber. Find examples of conductors and insulators around you and bring them to the next lesson.

I liked: _____

I did not like: _____

I learnt: _____

I learnt the following new words/phrases: _____

CHECK WHAT YOU REMEMBER

Complete the following diagram

