## Science Teaching Alive workshops

## Electric circuit concepts

## Student worksheet

This is not a complete worksheet - it is a suggestion that your teacher group can build on. You have probably found worksheets that were not right for your classes. Well, now you can change this one until it is right for your classes.

## Start to Question 1

Figure 1.


The bulbs in this Figure are all of the same power rating. Ask three questions about this circuit.

## Start to Question 2

Figure 2.


Ask a question about this circuit.

Figure 3


Figure 4 A 100 watt globe is normally brighter than a 40 watt globe.


## Start to Question 5

Question 5.1 Now the two bulbs in Figure 4 are connected in series with 220 volts across both of them. What will you see?
A. The 40 watt globe will burn out.
B. Both globes will be dim.
C. The 100 watt globe will be dim but the 40 watt globe will be almost as bright as normal.
D. The 100 watt globe will be almost as bright as normal but the 40 watt globe will be dim.

Question 5.2 Ask another question about these globes.

## Start to Question 6

Three resistors are connected as you see in Figure 5.

- Work out the voltage across each resistor. Use two methods.

The first method is to calculate the equivalent resistance and then work out the current through each parallel branch. This will allow you to calculate the voltages.
The second method is to look at how the voltage splits up across the resistors.

- Which method is the least work?

Figure 5 .


- Which method has the bigger risk of a calculation mistake?

