

## Student sheet: Electrical Circuits – Current & Voltage in Series Circuits.

### Objectives:

By the end of the session you will understand the basic principles of series circuits and the relationship between current and voltage.

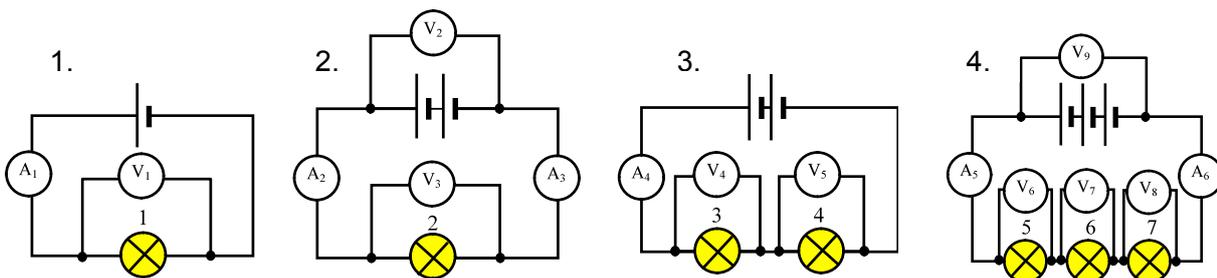
### Resources required:

Circuit board; Bulbs (3); Batteries (3); Multimeters (2) & Leads. The meters can be moved round within any of the circuits.

### Activity:

Working in pairs undertake the following tasks:

- Set up the circuit shown in the diagram 1 and record meter readings.
- Set up the circuit shown in the diagram 2 and record meter readings.
- Set up the circuit shown in the diagram 3 and record meter readings.



Record the current (A) and voltage (V) results on the table in the Worksheet.

Explain the readings that you have got.

Answer questions in the Worksheet.

### Further work:

- Set up the circuit shown in the diagram 4 and record meter readings.
- Review notes and quiz on electrical circuits at [www.Twothirtyvolts.org](http://www.Twothirtyvolts.org):

### Linked Resources

[www.twothirtyvolts.org](http://www.twothirtyvolts.org):

Electrical Circuits 11-14 Student Revision Notes  
Electrical Circuits 11-14 Revision Quiz

**Worksheet: Electrical Circuits –  
Current & Voltage in Series Circuits.****Measurements:**

Ammeter	Reading (A)	Voltmeter	Reading (V)
<b>A<sub>1</sub></b>		<b>V<sub>1</sub></b>	
<b>A<sub>2</sub></b>		<b>V<sub>2</sub></b>	
<b>A<sub>3</sub></b>		<b>V<sub>3</sub></b>	
<b>A<sub>4</sub></b>		<b>V<sub>4</sub></b>	
<b>A<sub>5</sub></b>		<b>V<sub>5</sub></b>	
<b>A<sub>6</sub></b>		<b>V<sub>6</sub></b>	
		<b>V<sub>7</sub></b>	
		<b>V<sub>8</sub></b>	
		<b>V<sub>9</sub></b>	

**Explanation of Readings:****Questions:**

1. What will be the reading on voltmeter 5 if bulb 4 blows?
2. What will be the reading on voltmeter 8 if bulb 5 blows?
3. What will be the reading on ammeter 3 if bulb 2 blows?
4. What will be the reading on ammeter 4 if bulb 4 blows?
5. What will be the reading on ammeter 5 if bulb 7 blows?