Grade 9 Natural Sciences Worksheet

Measuring the current strength in a series circuit

Investigative question

What is the current strength of the various points in a series circuit?

Aim

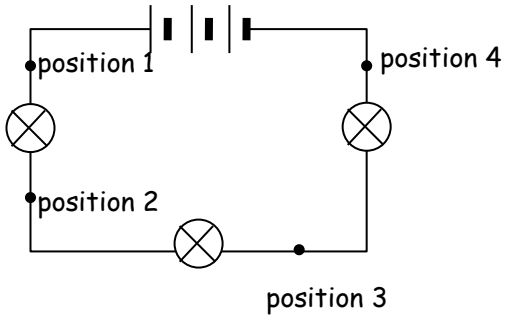
To investigate the strength of electric current at various points in a series circuit using an ammeter.

Apparatus

Circuit board and components, 3 torch cells, an ammeter.

Method

1. Set up a circuit containing three cells, three light bulbs and an ammeter (position 1) connected in series. Take the reading on the ammeter.
2. Move the ammeter to position 2 and take down the reading.
3. Move the ammeter to position 3 and take down the reading.
4. Move the ammeter to position 4 and take down the reading.
5. Complete the table below.



Results

Position of ammeter	Ammeter reading (A)
Position 1	
Position 2	
Position 3	
Position 4	

[2]

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Discussion

Select the most appropriate word or term to make each statement correct: [8]

1. An ammeter is connected in (series/parallel) in a circuit.
2. The larger the reading on the ammeter, the (stronger/weaker) the current strength.
3. When more than one light bulb is connected in series the light bulbs shine (with different intensities/equally bright).
4. The ammeter readings at various points in a series circuit (remain the same/differ).

Conclusion

The current strength (differs/is the same) at any point in a series circuit.
[2]

Rubric to assess practical work

Category	Levels of Achievement			
	4	**3**	**2**	**1**
Handling apparatus	Learner can manipulate apparatus and helps others in the group/sets up apparatus entirely unassisted. [8 marks]	Learner is confident and can set up the circuit with minimal assistance. [6 marks]	Learner is unsure of what to do, but attempts to set up the circuit with prompting. [4 marks]	Clumsy, not confident, little basic understanding of circuits. [2 marks]

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Suggested Solutions

Question number	Possible marks	Solution
Results	2	All readings are the same.
Discussion	8	1. An ammeter is connected in series in a circuit. 2. The larger the reading on the ammeter, the stronger the current strength. 3. When more than one light bulb is connected in series the light bulbs shine equally bright. 4. The ammeter readings at various points in a series circuit remain the same.
Conclusion	2	The current strength is the same at any point in a series circuit.
Practical work	8	See rubric in Appendix of Assessment Tools.

Rubric to assess practical work

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	4	**3**	**2**	**1**
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