

# Lesson 2 - Chemical and Electrical Effects

Science - Physics - Key Stage 3

Light and Space

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# Recap on variables

1. What is an **independent** variable?
2. What is the **dependent** variable?
3. What are **control** variables?



# **Hypothesis: 'The surface area of a solar cell affects the size of the voltage produced'**

Identify the:

Independent variable:

Dependent variable:

Control variables:



# Recap on writing a method

List the features of a good method:



# Recap on drawing tables

What is the criteria for drawing a good table?



# Task - draw a table for the results

You need to make sure your results are **repeatable**, so include columns in your table for this.



# Example results

Surface area of solar cell (cm <sup>2</sup> )	Voltage produced by the solar cell (V)			Mean voltage produced (V)
	Test 1	Test 2	Test 3	
15	2.1	2.6	1.9	
30	3.7	4.3	6.7	
45	6.8	6.5	7.1	
60	8.2	8.9	8.5	

Looking at the repeated results, are they similar?

Do we have any anomalies?

How can we calculate a mean?



# Conclusion - The surface area of a solar cell affects the size of the voltage produced

Can you see a pattern in your results?

Which results support the pattern that you can see?

Can you explain why you see this pattern?

Were your result repeatable? How can you tell?

Surface area of solar cell (cm <sup>2</sup> )	Voltage produced by the solar cell (V)			Mean voltage produced (V)
	Test 1	Test 2	Test 3	
15	2.1	2.6	1.9	2.2
30	3.7	4.3	6.7	4
45	6.8	6.5	7.1	6.8
60	8.2	8.9	8.5	8.5





**Identify the variables for this experiment and errors in the following method for investigating how the colour of the bulb will affect the voltage produced in the solar cell.**

1. Red bulb goes into lamp and put around arms length away from the solar cell.
2. Turn on the bulb.
3. Measure voltage of solar cell.
4. Repeat with blue and green bulb.

The independent variable for this experiment is...

The method does not include...

