

Y6 Cells Voltage

KS2 Y6 Science · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

What is the total voltage of three 1.5 V cells joined in a row, all facing the same way?

Step 1 · Each cell

1.5 V

Step 2 · Add them

$1.5 + 1.5 + 1.5 = 4.5$

Answer: 4.5 V.

Check: This only works if the cells face the same way (+ to -).

2. Now try one with the steps

Explain why adding a second cell makes a lamp brighter.

Step 1 · What does a cell do?

Step 2 · Two cells together

Step 3 · Effect on the lamp

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. What is the voltage, in volts, of a standard AA cell?

2. What is the unit of voltage?

3. What happens to a lamp's brightness when you add more cells?

4. What happens to a buzzer's volume when you use fewer cells?

5. What is the total voltage, in volts, of two 1.5 V cells facing the same way?

6. What is the total voltage, in volts, of four 1.5 V cells facing the same way?

7. What happens to a motor's speed when you add another cell?

8. Two 1.5 V cells face opposite ways in a circuit. What is the total voltage, in volts?

9. A lamp is rated 3 V. How many 1.5 V cells should you use?

10. What might happen if you connect a 3 V lamp to a 9 V battery?

11. Explain why a torch gets dimmer cells get old.

12. Why are higher-voltage cells and batteries used in more powerful devices?

13. Name one variable to keep the same when testing how the number of cells affects brightness.

14. Why must you never experiment with mains electricity from sockets?

4. Before you hand it in

Thinking more cells is always better.

Match the voltage of the cells to the component's rating.

Putting cells in facing different ways.

Join cells + to –, all facing the same way.

Saying 'double the cells, double the brightness'.

Say 'the more cells, the brighter'.

Thinking a bigger cell always has a higher voltage.

Check the voltage printed on the cell.