

## Checkpoint Task

### Resistance and Electrical Circuits

#### Instructions and answers for teachers

These instructions should accompany the OCR resource 'Checkpoint' activity which supports OCR A Level Physics A

**A LEVEL  
PHYSICS A**

Checkpoint Task

Resistance and Electrical Circuits

1. When a lithium ion cell no longer makes a device work it has run out of charge.	2. When a lithium ion cell no longer makes a device work it needs to be re-charged.
3. When a lithium ion cell is connected in the circuit the charge moves instantly through the wires.	4. When a lithium ion cell no longer makes a device work all the charge has been transferred and used by the device.

Task 1  
Read each of the four statements above. Write down a statement in agreement and another statement giving a contrary opinion for each of the statements.

	Agree	Disagree
1		
2		
3		
4		

Version 2



#### The Activity:



This activity offers an opportunity for English skills development.



This activity offers an opportunity for maths skills development.

#### Associated materials:

'Checkpoint' learner activity sheet.

*This resource is an exemplar of the types of materials that will be provided to assist in the teaching of the new qualifications being developed for first teaching in 2015. It can be used to teach existing qualifications but may be updated in the future to reflect changes in the new qualifications. Please check the OCR website for updates and additional resources being released. We would welcome your feedback so please get in touch.*



# A LEVEL PHYSICS A

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# A LEVEL PHYSICS A

## Task 2

Decide which of the statements are correct. Write a single paragraph that supports the statement you have chosen.

### For Teachers:

(Checkpoint Task 1, Internal Resistance of Cells, is a follow up experiment to reinforce learning)

**Note:** Each of the concepts are not correct, they are common misconceptions and the reason for getting the wrong idea is because the makers of electrical cells call lithium-ion cells, 'rechargeable'. Thus giving rise to the idea that charge moves around the circuit and is passed on to the components and then 'used up'. The cells do not get more charge; it is a reversible reaction which allows the charge carriers to pass energy along the circuit. Students with a high grasp of the wrong idea may suggest that the charges would become very large and heavy due to relativistic effects.

This can also lead into a discussion on energy conservation in that many people throw away cells long before the energy is completely dissipated. Few students recognise that the cell may be able to supply energy to other devices with lower energy needs and thus use the energy to the full extent.



# A LEVEL *PHYSICS A*

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