

# It's electrifying

## Level 3 and 4 investigating outcomes

Student	Stage	Key Learning Area	Date
		Science	

<b>Task</b>	Students investigate conductors and insulators.
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	Investigating unit outcomes	Beginning	Developing	Achieving
<b>Level 3</b>	Formulate a question for investigation and make a prediction.	Students can make a prediction.	Students can use their predictions and discuss what they would like to investigate.	Students can use their predictions and what they would like to investigate to formulate a question for investigation.
	Plan for the investigation showing awareness of the need for fair testing.	Students can identify what makes a test unfair.	Students describe what a fair test is.	Students describe what a fair test is and explain the importance of a fair test.
	Summarise and explain observations made during an investigation.	Students can make observations during an investigation.	Students can make and explain their observations made during an investigation.	Students can make, explain and summarise their observations made during an investigation.

	Investigating unit outcomes	Beginning	Developing	Achieving
<b>Level 4</b>	Change one factor at a time when modifying circuits to test predictions about possible conductors and insulators and test sufficient samples to make reliable conclusions.	Students can make predictions about possible conductors and insulators.	Students can make predictions and can modify circuits to test their predictions.	Students can make predictions, modify and test circuits and make conclusions based on observations.
	Formulate generalisations based on observations made during an investigation.	Students can make observations during an investigation.	Students can identify patterns in observations made during an investigation.	Students can identify patterns and generalise observations made during an investigation.
	Make suggestions for improving the investigation.	Students can observe an investigation.	Students can observe and suggest some ways of improving an investigation.	Students can observe and suggest some ways of improving an investigation, discussing how it will improve the investigation.

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## Level 3 and 4 conceptual outcomes

Student	Stage	Key Learning Area	Date
		Science	

<b>Task</b>	Students reflect on their learning and represent what they know about electric circuits.
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	Conceptual unit outcomes	Beginning	Developing	Achieving
<b>Level 3</b>	Describe a circuit in terms of components that form a continuous path for the flow of electrons.	Students can identify things that have a circuit.	Students can identify the components of a circuit.	Students can identify the components of a circuit and explain how electrons flow in a continuous path around the circuit.
	Describe how energy is stored and transferred within an electric circuit.	Students can identify an electric circuit.	Students can identify how energy is stored in an electric circuit.	Students can identify how energy is stored and transferred in an electric circuit.
	Explain the characteristics of conductors and insulators in terms of categories of materials.	Students can identify things that conduct electrical energy.	Students can identify things that insulate and slow electrical energy.	Students can categorise conductors and insulators according to their materials and explain their characteristics.

	Conceptual unit outcomes	Beginning	Developing	Achieving
<b>Level 4</b>	Explain energy transfer within a circuit in terms of a flow of electrons.	Students can identify a circuit.	Students can identify a circuit, explaining than electrons flow through the circuit.	Students can identify a circuit and explain how electrons flow through the circuit in terms of energy transfer.
	Explain that electrical energy is changed into other forms of energy in a circuit and is not used up—that is, energy is transformed and not destroyed.	Students can identify things which have electrical energy and circuits.	Students can explain how electrical energy moves through a circuit.	Students can explain how electrical energy is transformed into other forms of energy as it moves through a circuit – that it is not destroyed.
	Explain differences between conductors and insulators in terms of electron flow through these materials.	Students can identify conductors and insulators.	Students can discuss the differences between conductors and insulators.	Students can explain the difference between conductors and insulators, describing how electrons flow/do not flow through these materials.