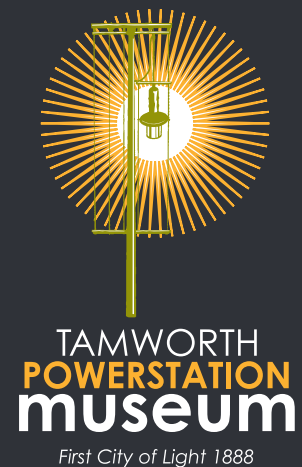


TAMWORTH POWERSTATION MUSEUM

EDUCATION KIT K-6

Version 1.1 (April 2017)



<http://tamworthpowerstationmuseum.com.au/>

How to use this kit

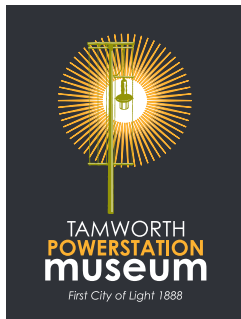
This resource has been developed to accompany a visit to Tamworth Powerstation Museum. It draws information from current teaching resources, the Museum's Collection, and online sources. It is developed to address the Science K-10 (incorporating Science and Technology K-6) and the History K-10 Syllabi. This kit was created to assist teachers in preparing a visit to Tamworth Powerstation Museum and also may be of use for secondary students, public program staff and the general public.

Museum volunteers are available to give guided tours. If you have a lesson focus, activity or experience in mind, please talk to us about how we can accommodate you, and your students' needs.

Please contact the education officer on (02) 6767 5227 or by emailing k.armstrong@tamworth.nsw.gov.au

A special date to keep in mind is 9 November, when the museum celebrates the anniversary of the switching on of the lights by running the steam engines and providing free entry to the museum. Otherwise, the rest of the year students are \$3 a head while teachers and accompanying adults are free.

<http://tamworthpowerstationmuseum.com.au/school-tours/>



Click to go directly to content:

SCIENCE & TECHNOLOGY – Early Stage 1

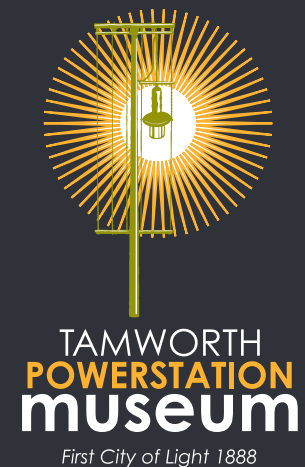
SCIENCE & TECHNOLOGY – Stage 1

SCIENCE & TECHNOLOGY – Stage 2

SCIENCE & TECHNOLOGY – Stage 3

HISTORY – Stage 1

HISTORY – Stage 2



SCIENCE & TECHNOLOGY

– Early Stage 1

VALUES AND OBJECTIVES:

- Students develop interest and positive, informed values and attitudes towards science and technology
- Students recognise the importance and relevance of science and technology in their lives now and for the future

SKILLS:

Students develop knowledge, understanding of and skills in applying the processes of Working Scientifically

- STe-4WS explores their immediate surroundings by questioning, observing using their senses and communicating to share their observations and ideas

Students develop knowledge, understanding of and skills in applying the processes of Working Technologically

- STe-5WT uses a simple design process to produce solutions with identified purposes

Students develop knowledge and understanding of the Made Environment through Built Environments, Information and Products

- STe-10ME recognises how familiar products, places and spaces are made to suit their purpose

STUDENTS PROCESS AND ANALYSE DATA AND/OR INFORMATION BY:

- organising objects or images of objects to display data and/or information
- engaging in discussions about observations and used drawing to represent ideas (AC SIS233)

STUDENTS COMMUNICATE BY:

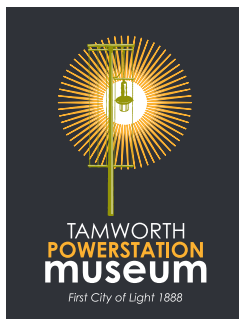
- using a range of methods to share observations and ideas, such as drawing, informal and guided discussion, role play, contributing to joint construction of short texts and/or using digital technologies (AC SIS012)



ELECTRICAL SAFETY:

For electrical safety resources including Early Stage 1 PDHPE outcomes and indicators see –

<https://www.essentialenergy.com.au/asset/cms/education/ElectricitySafetyLessonBookK-6.pdf>



Electricity in our homes!

TEACHER BACKGROUND KNOWLEDGE AND USEFUL LINKS:

<http://www.schoolatoz.nsw.edu.au/homework-and-study/other-subjects-and-projects/science/electricity-project>

<https://www.essentialenergy.com.au/content/school-resources>

'How do we use electricity in our lives?'

PRE-VISIT INVESTIGATION

WHOLE CLASS ORIENTATION:

Using the above guiding question ask students to sit in a circle, Teacher to present to the class an electric hairdryer, bar mix, radio, ipad/tablet and other electrical appliances and ask what makes these items work. Items are placed in the middle of the circle.

Teacher asks students: **What do we need to do to make these things work?**

Record the student's answers on the IWB using drawings and sentences.

This discussion will result in the conclusion that these items are plugged in and turned on, and are powered by electricity.

Ask students: **What are the other items in the home that you know use electricity to work?**

Record the student's answers on the IWB using drawings and sentences.

When students have exhausted their knowledge of electrical appliances in their home, show students the webpage with many items powered by electricity: <http://www.alliantenergykids.com/EnergyBasics/AllAboutElectricity/000417>

Ask students: **Are there any items that we didn't have in our list?**

INDEPENDENT DISCOVERY:

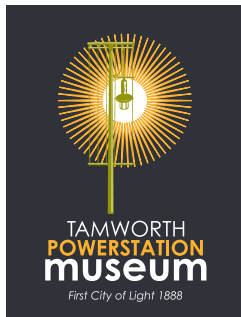
Activity: 'Past and Present' - resource on next slide.

Resources: 'Past and Present' - resource (one per student) and pencils

Using the proforma 'Past and Present' - students identify the electrical versions of everyday things from the past.

RESOLUTION/ EXTENSION:

Ask students to imagine how our lives would be different without electricity.



Name: _____ Date: _____

Past and Present

The pictures on the left show what people did in the past before we had electricity in our homes. Draw a picture in the box next to each item to show what people do now.

Then	Now
	
	
	
	

MUSEUM VISIT

A photograph of a museum visit. An older man with white hair, wearing a light blue sweater, is standing and demonstrating a scientific device to a group of children. The children, seen from behind, are wearing school uniforms. The device is a circular apparatus with a central vertical rod and a horizontal arm. The background shows a museum interior with framed portraits on the wall and a fire extinguisher on the floor.

The following are some of the activities available:

- Complete an electrical circuit in order to make the light come on. Then complete the circuit so that the motor comes on as well. Can you bypass the switch so the current goes directly to the light? This is a great learning game developed and made by one of the volunteers (ACSSU097).
- Produce static electricity and discharge with a replica Wimshurst Static Electricity Generator' (ACSSU097).
- Investigate the forces of attraction and repulsion between magnets (ACSSU076) and the creation of electro-magnetic fields with a variety of electrical generators, including a replica of Michael Faraday's first (1831) electro-magnetic generator. The machine has a coil and a magnet that can be moved relative to each other to produce a dramatic indication of the generated electro-motive force on a large voltmeter.
- Receive a small electric shock! Learn what is needed to produce electricity, and what materials conduct electricity and what can insulate against it (ACSSU097). There is an important electrical safety message here that humans are conductors of electricity.
- Hold a Crookes Radiometer up to a light source and observe that black absorbs light and silver reflects it – making the vane spin around (ACSSU080).

SCIENCE & TECHNOLOGY

– Stage 1

VALUES AND OBJECTIVES:

- Students develop interest and positive, informed values and attitudes towards science and technology
- Students recognise the importance and relevance of science and technology in their lives now and for the future

SKILLS:

Students develop knowledge, understanding of and skills in applying the processes of **Working Scientifically**

- ST1-4WS investigates questions and predictions by collecting and recording data, sharing and reflecting on their experiences and comparing what they and others know

STUDENTS QUESTION AND PREDICT BY:

- responding to and posing questions (AC SIS024, AC SIS037)
- making predictions about familiar objects and events and the outcomes of investigations (AC SIS024, AC SIS037, AC SHE021, AC SHE034)

KNOWLEDGE AND UNDERSTANDING:

Students develop knowledge, understanding of and skills in applying the processes of **Working Technologically**

- ST1-5WT uses a structured design process, everyday tools, materials, equipment and techniques to produce solutions that respond to identified needs and wants

Students develop knowledge and understanding of the **Made Environment** through Built Environments, Information and Products

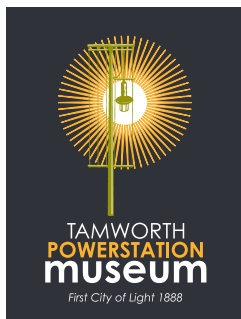
- ST1-15I describes a range of familiar information sources and technologies and how their purposes influence their design
- ST1-16P describes a range of manufactured products in the local environment and how their different purposes influence their design



ELECTRICAL SAFETY:

For electrical safety resources including Stage 1 PDHPE outcomes and indicators see –

<https://www.essentialenergy.com.au/asset/cms/education/ElectricitySafetyLessonBookK-6.pdf>



Electricity in our homes!

TEACHER BACKGROUND KNOWLEDGE AND USEFUL LINKS:

<http://www.schoolatoz.nsw.edu.au/homework-and-study/other-subjects-and-projects/science/electricity-project>

<https://www.essentialenergy.com.au/content/school-resources>

'How do we use electricity in our lives?'

PRE-VISIT INVESTIGATION

WHOLE CLASS ORIENTATION:

Using the above guiding question ask students to sit in a circle, Teacher to present to the class an electric hairdryer, bar mix, radio, ipad/tablet and other electrical appliances and ask what makes these items work. Items are placed in the middle of the circle.

Teacher asks students: **What do we need to do to make these things work?**

Record the student's answers on the IWB using drawings and sentences.

This discussion will result in the conclusion that these items are plugged in and turned on, and are powered by electricity.

Ask students: **What are the other items in the home that you know use electricity to work?**

Record the student's answers on the IWB using drawings and sentences.

When students have exhausted their knowledge of electrical appliances in their home, show students the webpage with many items powered by electricity: <http://www.alliantenergykids.com/EnergyBasics/AllAboutElectricity/000417>

Ask students: **Are there any items that we didn't have in our list?**

INDEPENDENT DISCOVERY:

Activity: 'Electricity in my bedroom' - resource on next slide.

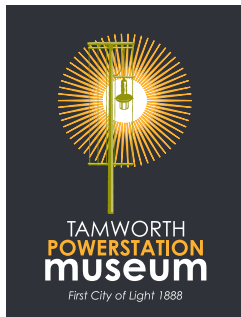
Resources: 'Electricity in my bedroom' - resource (one per student), scissors and glue sticks.

Using the proforma 'Electricity in my bedroom, students identify items powered by electricity in their bedroom at home.

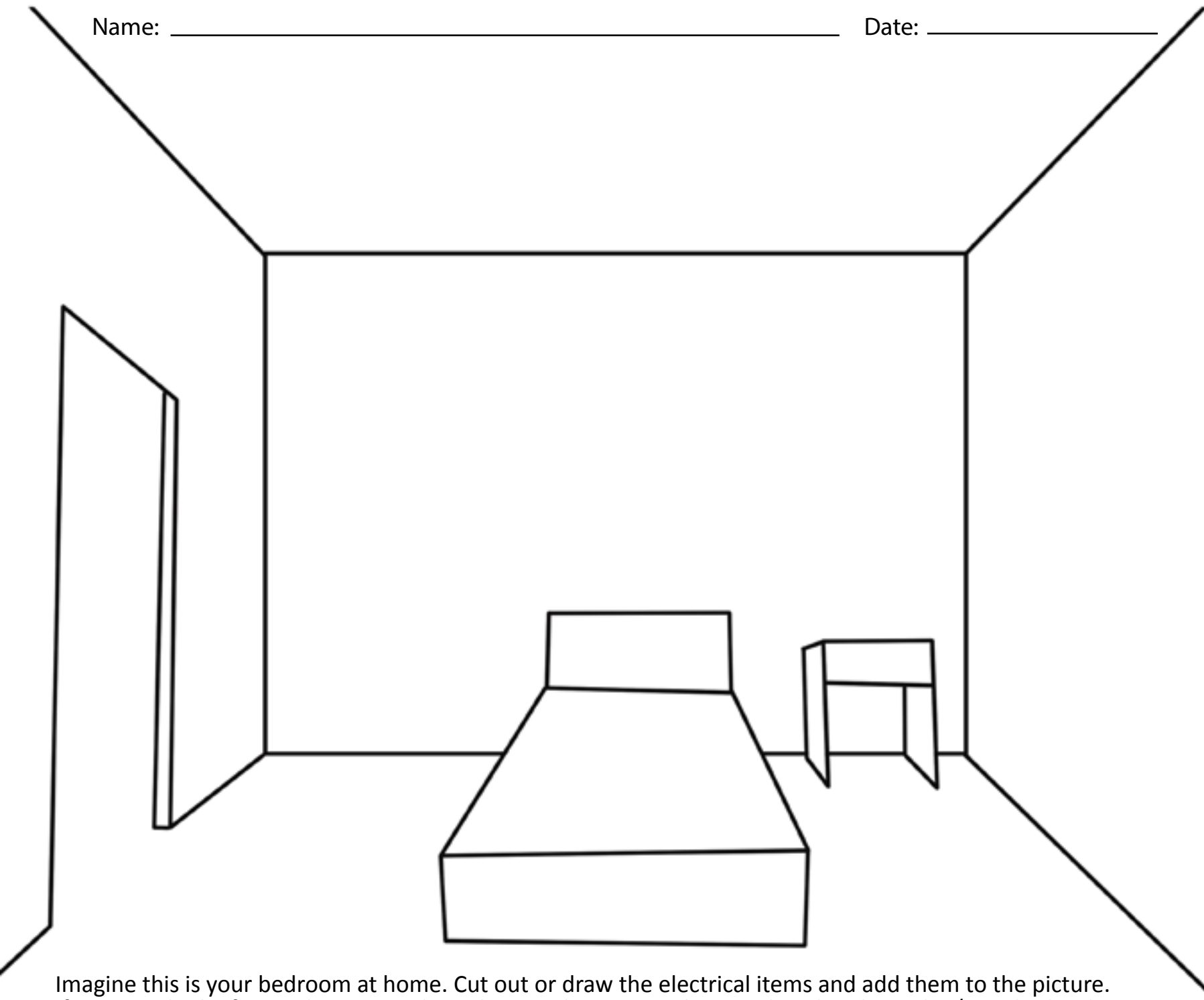
Using scissors and glue, students independently cut out and glue the items in their correct location in the drawing.

RESOLUTION/ EXTENSION:

Ask students to the floor to discuss and compare their worksheets. **How might our lives be different without electricity?**



Name: _____ Date: _____



TABLET



LIGHT
SWITCH



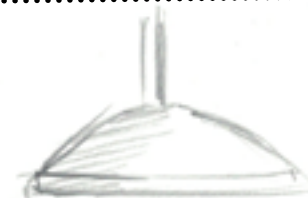
LAMP



FAN



STEREO



LIGHT



POWERPOINT

Imagine this is your bedroom at home. Cut out or draw the electrical items and add them to the picture. If you can think of any other items, draw them in the room. What needs to be plugged in/switched on?

MUSEUM VISIT

A photograph of a museum visit. An older man with white hair, wearing a light blue sweater, is standing and demonstrating a scientific device to a group of children. The children, seen from behind, are wearing school uniforms. The device is a circular apparatus with a central vertical rod and a horizontal arm. The background shows a museum interior with framed portraits on the wall and a fire extinguisher on the floor.

The following are some of the activities available:

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- Receive a small electric shock! Learn what is needed to produce electricity, and what materials conduct electricity and what can insulate against it (ACSSU097). There is an important electrical safety message here that humans are conductors of electricity.
- Hold a Crookes Radiometer up to a light source and observe that black absorbs light and silver reflects it – making the vane spin around (ACSSU080).

SCIENCE & TECHNOLOGY

– Stage 2

VALUES AND OBJECTIVES:

- Students develop interest and positive, informed values and attitudes towards science and technology
- Students recognise the importance and relevance of science and technology in their lives now and for the future

SKILLS:

Students develop knowledge, understanding of and skills in applying the processes of **Working Scientifically**

- ST2-4WS investigates their questions and predictions by analysing collected data, suggesting explanations for their findings, and communicating and reflecting on the processes undertaken

Students develop knowledge, understanding of and skills in applying the processes of **Working Technologically**

- ST2-5WT applies a design process and uses a range of tools, equipment, materials and techniques to produce solutions that address specific design criteria

KNOWLEDGE AND UNDERSTANDING:

Students develop knowledge of the **Natural Environment** through understanding about the Physical World, Earth and Space, and Living World

- ST2-7PW describes everyday interactions between objects that result from contact and noncontact forces

Students develop knowledge and understanding of the **Made Environment** through Built Environments, Information and Products

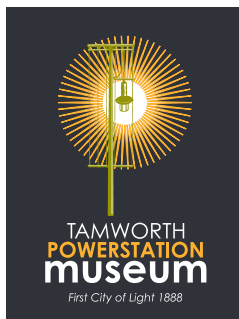
- ST2-16P describes how products are designed and produced, and the ways people use them



ELECTRICAL SAFETY:

For electrical safety resources including Stage 2 PDHPE outcomes and indicators see –

<https://www.essentialenergy.com.au/asset/cms/education/ElectricitySafetyLessonBookK-6.pdf>



Electricity in our homes!

TEACHER BACKGROUND KNOWLEDGE AND USEFUL LINKS:

<http://www.schoolatoz.nsw.edu.au/homework-and-study/other-subjects-and-projects/science/electricity-project>

<https://www.essentialenergy.com.au/content/school-resources>

'How do we use electricity in our lives?'

PRE-VISIT INVESTIGATION

WHOLE CLASS ORIENTATION:

Using the above guiding question ask students to sit in a circle, Teacher to present to the class an electric hairdryer, bar mix, radio, ipad/tablet and other electrical appliances and ask what makes these items work. Items are placed in the middle of the circle.

Teacher asks students: **What do we need to do to make these things work?**

Record the student's answers on the IWB using drawings and sentences.

This discussion will result in the conclusion that these items are plugged in and turned on, and are powered by electricity.

Ask students: **What are the other items in the home that you know use electricity to work?**

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When students have exhausted their knowledge of electrical appliances in their home, show students the webpage with many items powered by electricity: <http://www.alliantenergykids.com/EnergyBasics/AllAboutElectricity/000417>

Ask students: **Are there any items that we didn't have in our list?**

INDEPENDENT DISCOVERY:

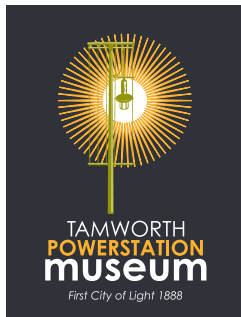
Activity: 'Electricity in my home!' - resource on next slide.

Resources: 'Electricity in my home!' - resource (one per student) and pencils.

Using the answers from the IWB and the proforma 'Electricity in my home!', students classify different electrical appliances from the list according to their use. Students independently use drawing and writing to record their observations.

RESOLUTION/ EXTENSION:

How would might our lives be different without electricity?

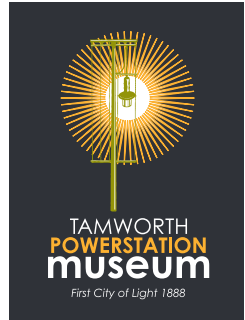


Name: _____

Date: _____

Electricity in my home!

Now break the items on the IWB into groups depending on what they are used for.
Some objects might belong in more than one box.



COOKING	KEEPING COOL	PRESERVING FOOD	LIGHTING
STAYING WARM	COMMUNICATION	ENTERTAINMENT	CLEANING

SCIENCE & TECHNOLOGY

– Stage 3

VALUES AND OBJECTIVES:

- Students develop interest and positive, informed values and attitudes towards science and technology
- Students recognise the importance and relevance of science and technology in their lives now and for the future

SKILLS:

Students develop knowledge, understanding of and skills in applying the processes of **Working Scientifically**

- ST3-4WS investigates by posing questions, including testable questions, making predictions and gathering data to draw evidence based conclusions and develop explanations

Students develop knowledge, understanding of and skills in applying the processes of **Working Technologically**

- ST3-5WT plans and implements a design process, selecting a range of tools, equipment, materials and techniques to produce solutions that address the design criteria and identified constraints

KNOWLEDGE AND UNDERSTANDING:

Students develop knowledge of the **Natural Environment** through understanding about the **Physical World**, Earth and Space, and Living World

- ST3-6PW describes how scientific understanding about the sources, transfer and transformation of electricity is related to making decisions about its use

Students develop knowledge and understanding of the **Made Environment** through Built Environments, Information and Products

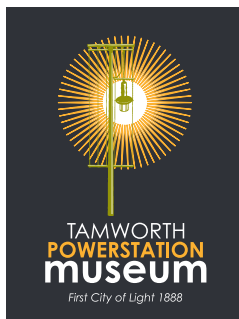
- ST3-15I describes how social influences impact on the design and use of information and communication systems
- ST3-16P describes systems used to produce or manufacture products, and the social and environmental influences on product design



ELECTRICAL SAFETY:

For electrical safety resources including Stage 3 PDHPE outcomes and indicators see – Essential Energy – 'Be a Safety Star' Electricity and Safety Book for Stage 3

<https://www.essentialenergy.com.au/asset/cms/education/lesson-book.pdf>



STAGE 3 FOCUS

- ELECTRICAL CIRCUITS

OUTCOMES:

A student describes how scientific understanding about the sources, transfer and transformation of electricity is related to making decisions about its use ST3-6PW

CONTENT:

Electrical circuits provide a means of transferring and transforming electricity. (ACSSU097)

Students:

- identify potential risks and demonstrate safe use when using electrical circuits and devices
- demonstrate the need for a circuit to be complete to allow the transfer (flow) of electricity
- construct simple circuits incorporating devices, eg switches and light globes
- observe and describe how some devices transform (change) electricity to heat energy, light, sound or movement, eg hair dryers, light globes, bells and fans

SUPPORT MATERIAL:

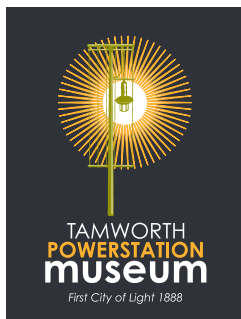
Primary Connections: It's electrifying, Year 6 Physical Sciences, Lesson 1 - 'What makes it go?', Lesson 2 - 'Light up my life' and Lesson 7 - 'Switched on'. Or see their new alternative unit: Circuit & Switches, Year 6 Physical Sciences.

<https://www.essentialenergy.com.au/asset/cms/education/lesson-book.pdf>

<http://www.electrickids.com.au/wps/wcm/connect/ElectricKids/ElectricKids/Home/Lesson3>

ALTERNATIVE OR EXTENSION LESSON PLAN AND FOCUS:

Primary Connections: Essential Energy, Year 6 Physical Sciences, Lesson 7 - 'Full of potential', students plan and conduct an investigation of how to generate electricity using simple household items.



Investigate how electrical circuits work (ACSSU097)

TEACHER BACKGROUND KNOWLEDGE :

We use electrical circuits every day- when we flick on a light switch, turn on a heater or a fan, even toy circuits when we cook our toast in the morning! Electricity is one of the most important forms of energy or power that we use but is only useful though when it can be harnessed. Circuits make it useable in our every day lives.

In this lesson students will learn more about how circuits work, and develop a greater understanding into the ways that they are used in our daily lives. They will also be given the opportunity to create a virtual circuit. This will help you prepare for your visit to Tamworth Powerstation Museum where students will have the opportunity to complete an electrical circuit and to watch a light come on.

PRE-VISIT INVESTIGATION

WHOLE CLASS ORIENTATION:

Introduce students to the metalanguage to be used in this lesson: closed circuits, open circuits, terminals, series circuit and voltage.

Ask students: **What do you already know about circuits?**

Access prior knowledge by asking students what they know about circuits already. Perhaps they have used Lego, Little Bits, or construction blocks such as Meccano at home to create a circuit without being aware of it. Make students aware that this lesson will be an introduction to their experience at Tamworth Powerstation Museum on their excursion. As a whole class, brainstorm all the ways in which students may have used an appliance that utilised a circuit in their day today. Use a scribe to record students' answers on the IWB.

INDEPENDENT DISCOVERY:

Materials required: computers, ipad or tablet. A copy of the Circuit Cloze (one per student).

As a whole class, students view the content and online clip on the next slide or use the URL:

<http://www.electrickids.com.au/wps/wcm/connect/electrickids/electrickids/home/lesson3/video1>

Students to complete the Circuit Cloze based on the information from the clip.

On a computer or tablet, students complete the task

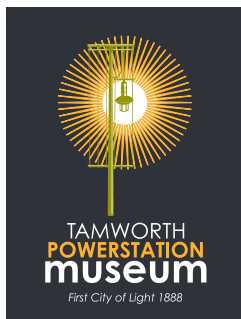
<http://www.electrickids.com.au/wps/wcm/connect/electrickids/electrickids/home/lesson3/flash2>

EXTENSION: Students to complete slide 16 from lesson 3, Essential Energy: which circuits will work?

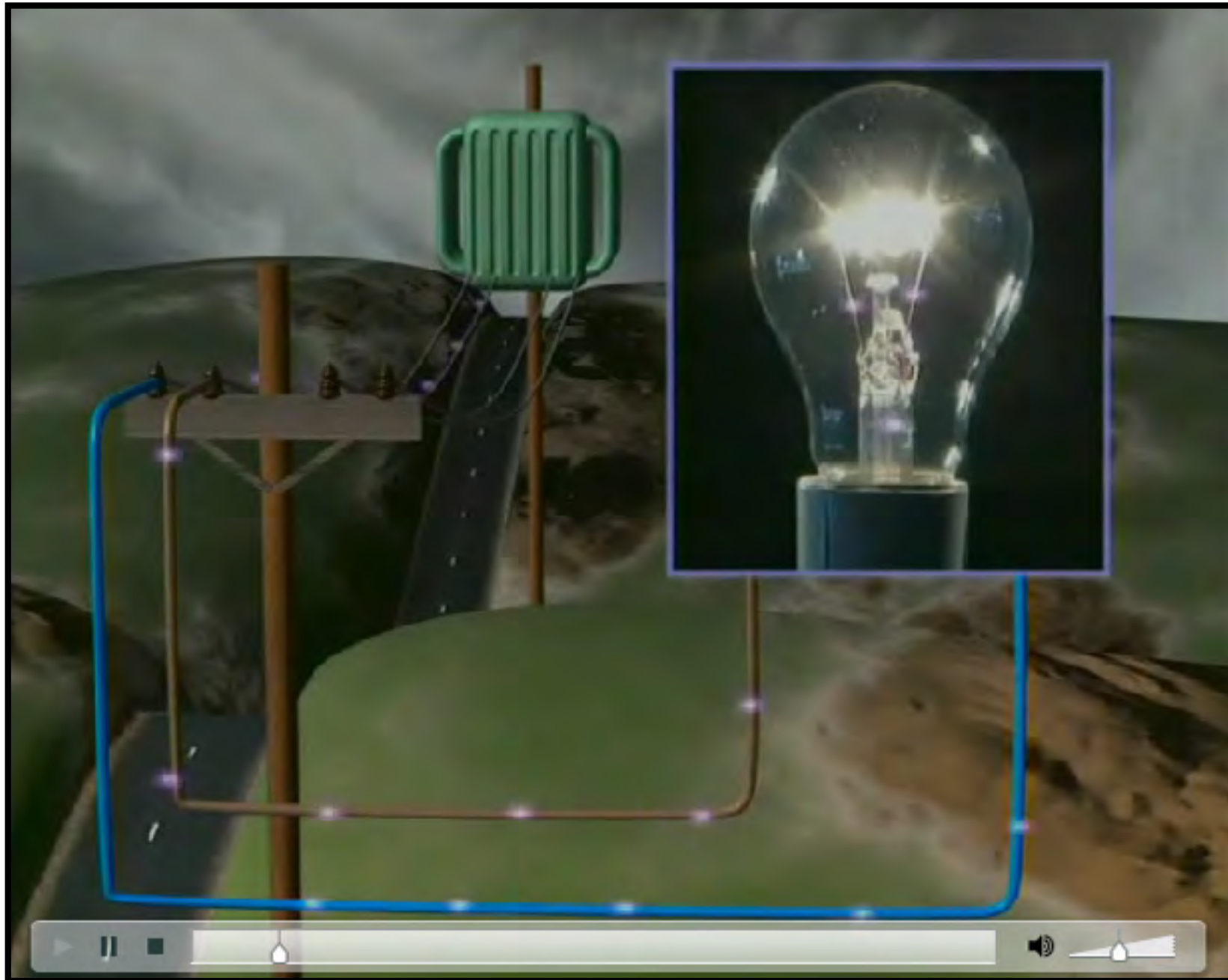
CONSOLIDATION: Bring students back to a larger group. Were they successful in creating a circuit? What were the challenges?

Ask students: **Which of the extension activities circuits from slide 16 from Lesson 3 worked?**

Students are invited to explain why they think these circuits may/may not have been successful.



Investigate how electrical circuits work (ACSSU097)



<http://www.electrickids.com.au/wps/wcm/connect/electrickids/electrickids/home/lesson3/video1>

Name: _____

Date: _____

CIRCUIT CLOZE

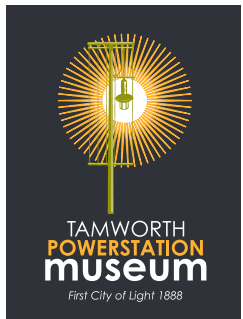
The electrons in electricity travel in a circuit, or _ _ _ _.

To make the appliance work, the electricity must go in,
through wiring, do its job, then travel
back to the _ _ _ _ _.

There must be a continuous _ _ _ _ _ for the electricity
to travel through.

The idea of a switch is to _ _ _ _ _ a circuit.

Missing words: source, loop, break, circuit



Investigate how electrical circuits work (ACSSU097)



<http://www.electrickids.com.au/wps/wcm/connect/electrickids/electrickids/home/lesson3/flash2>

Test your electrical knowledge!

Which of these circuits will work and which will not? Why won't they work?

(A)



(B)



(C)



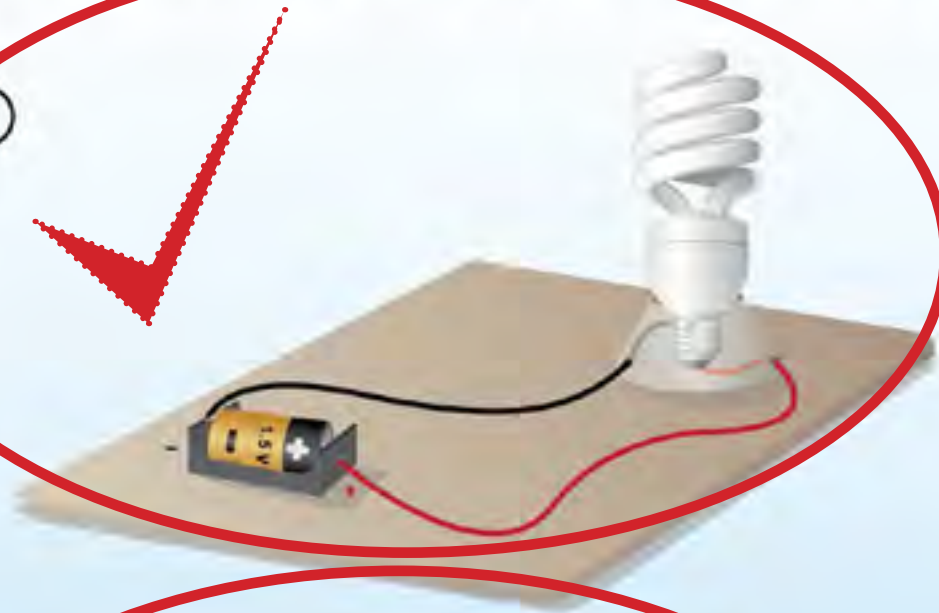
(D)



Test your electrical knowledge!

Which of these circuits will work and which will not? Why won't they work?

(A)



(B)



(C)



(D)



MUSEUM VISIT

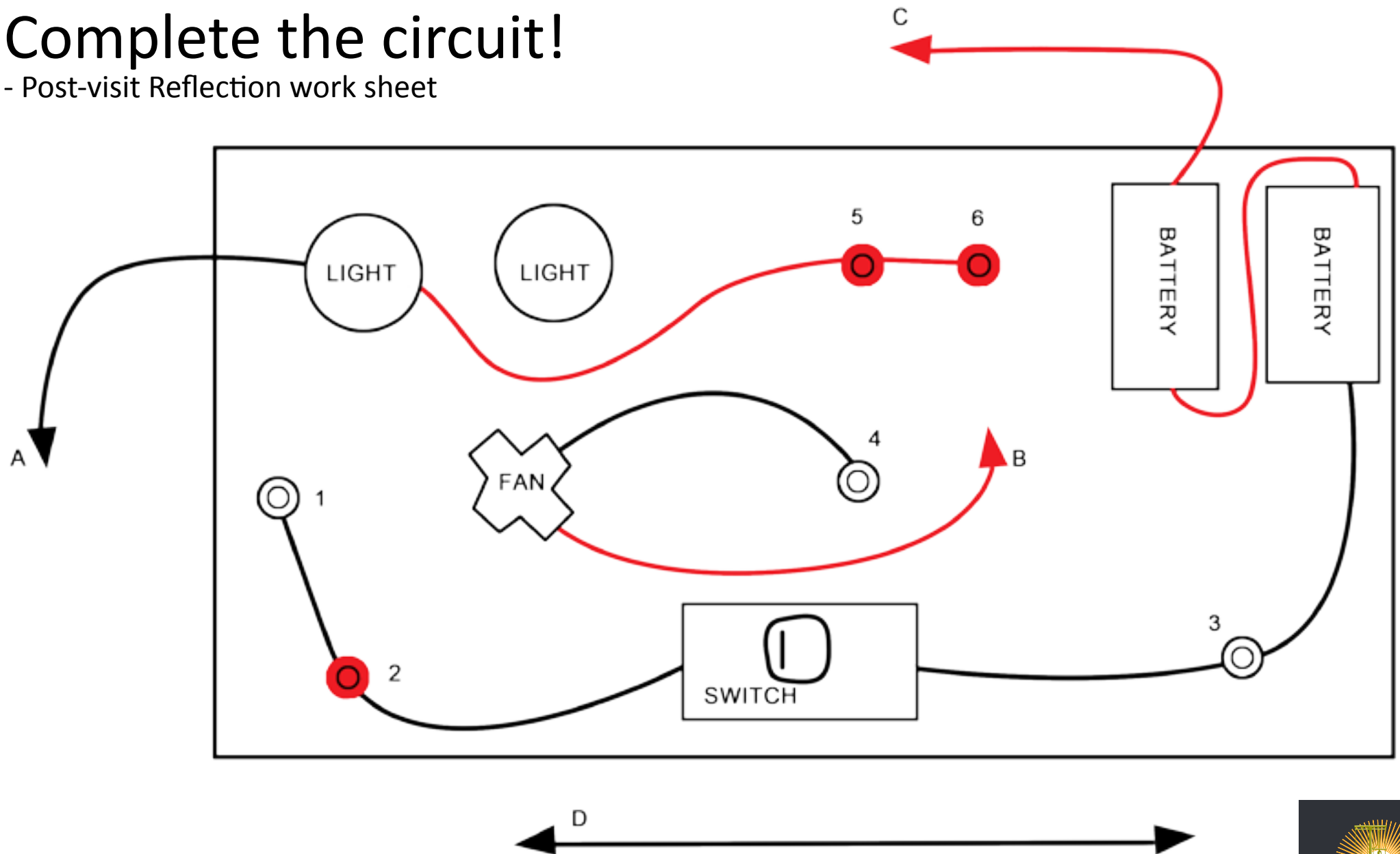
A photograph of a museum visit. An older man with white hair, wearing a light blue sweater, is standing and demonstrating a scientific device to a group of children. The children, seen from behind, are wearing school uniforms. The device is a circular apparatus with a central vertical rod and a horizontal arm. The background shows a museum interior with framed portraits on the wall and a fire extinguisher on the floor.

The following are some of the activities available:

- Complete an electrical circuit in order to make the light come on. Then complete the circuit so that the motor comes on as well. Can you bypass the switch so the current goes directly to the light? This is a great learning game developed and made by one of the volunteers (ACSSU097).
- Produce static electricity and discharge with a replica Wimshurst Static Electricity Generator' (ACSSU097).
- Investigate the forces of attraction and repulsion between magnets (ACSSU076) and the creation of electro-magnetic fields with a variety of electrical generators, including a replica of Michael Faraday's first (1831) electro-magnetic generator. The machine has a coil and a magnet that can be moved relative to each other to produce a dramatic indication of the generated electro-motive force on a large voltmeter.
- Receive a small electric shock! Learn what is needed to produce electricity, and what materials conduct electricity and what can insulate against it (ACSSU097). There is an important electrical safety message here that humans are conductors of electricity.
- Hold a Crookes Radiometer up to a light source and observe that black absorbs light and silver reflects it – making the vane spin around (ACSSU080).

Complete the circuit!

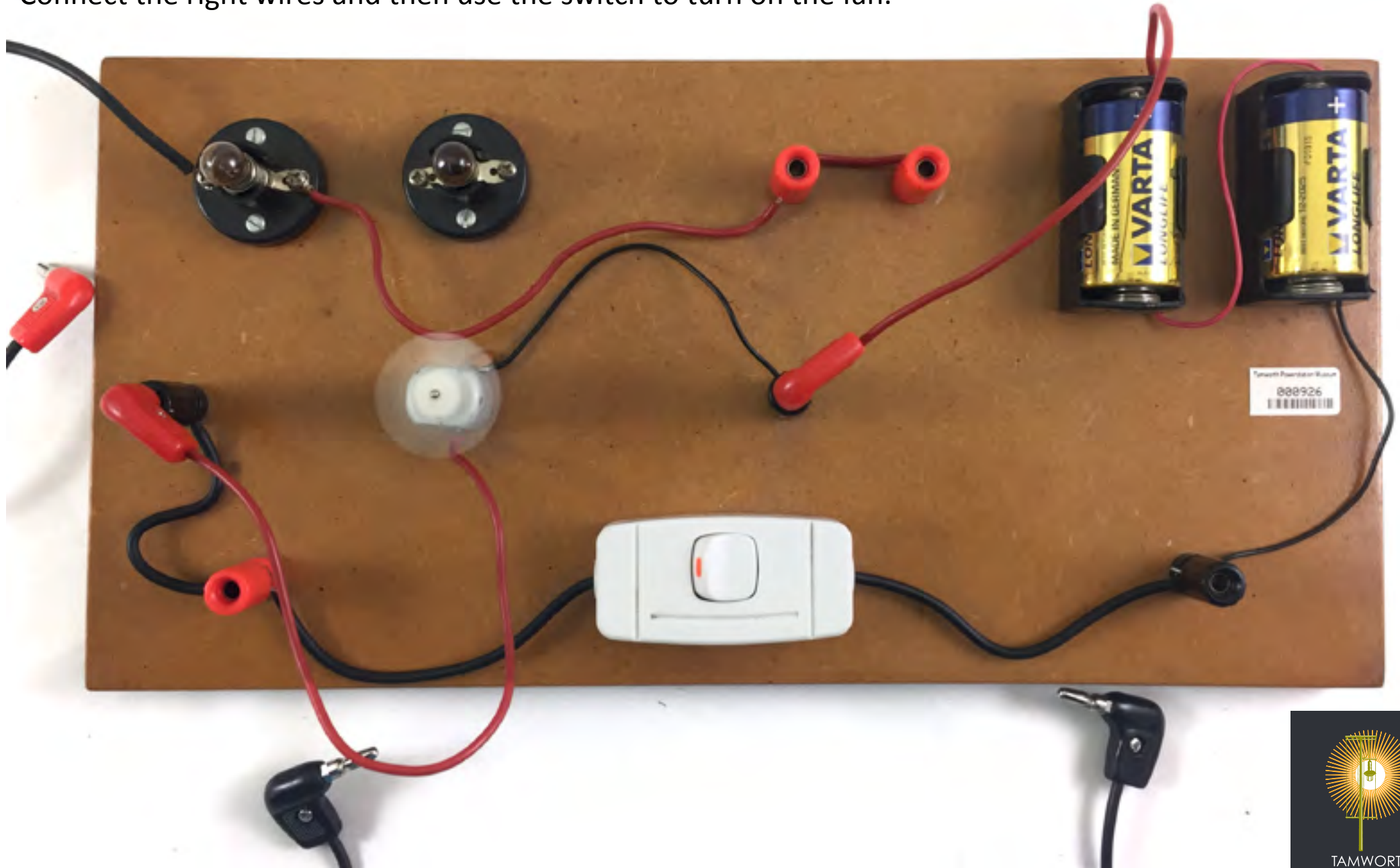
- Post-visit Reflection work sheet



- Connect the right wires and then use the switch to turn on the light.
- Connect the right wires and then use the switch to turn on the fan.

Complete the circuit!

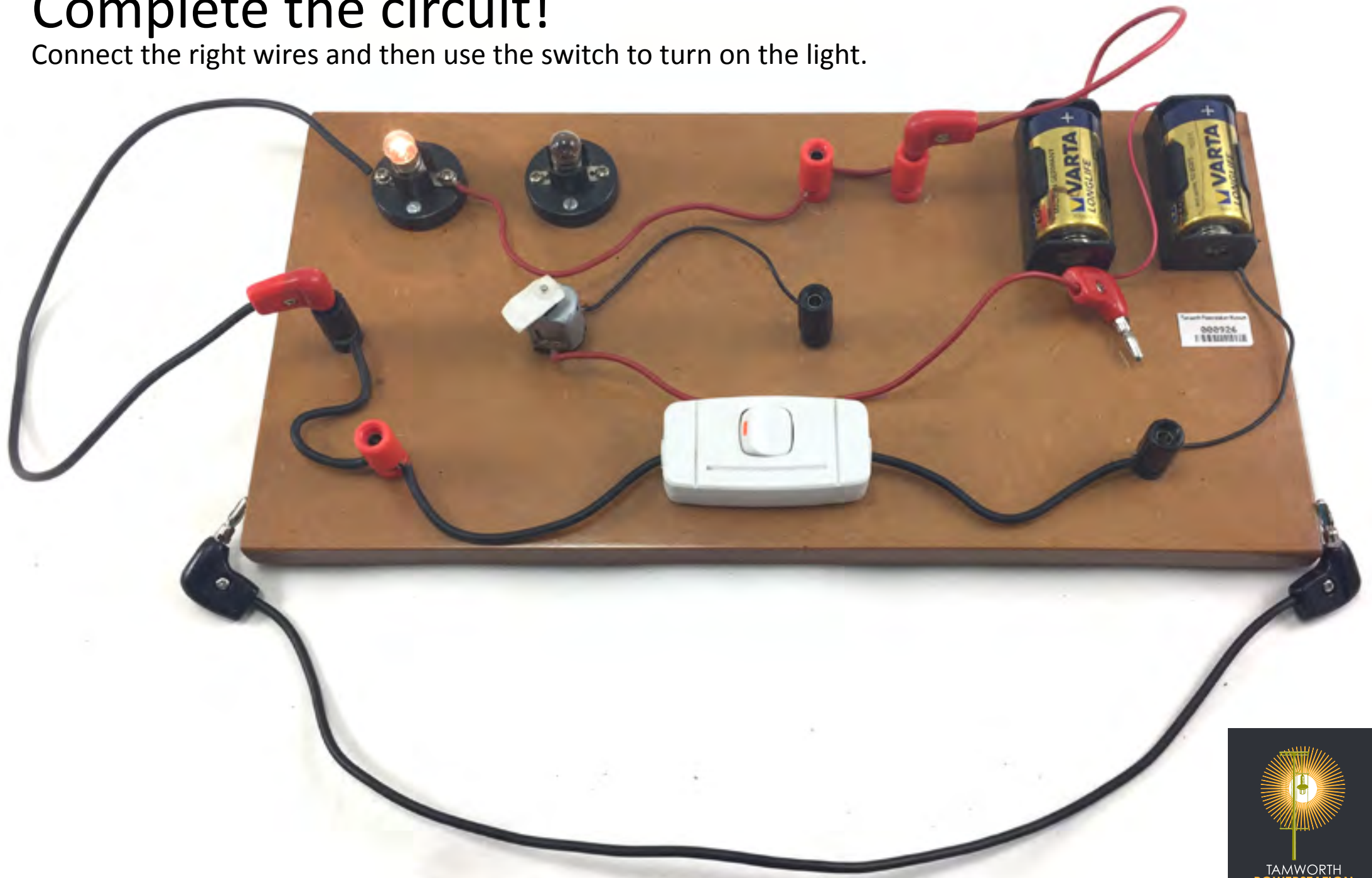
Connect the right wires and then use the switch to turn on the fan.



ANSWER: Connect Wire B to Plug 1 and Wire C to Plug 4

Complete the circuit!

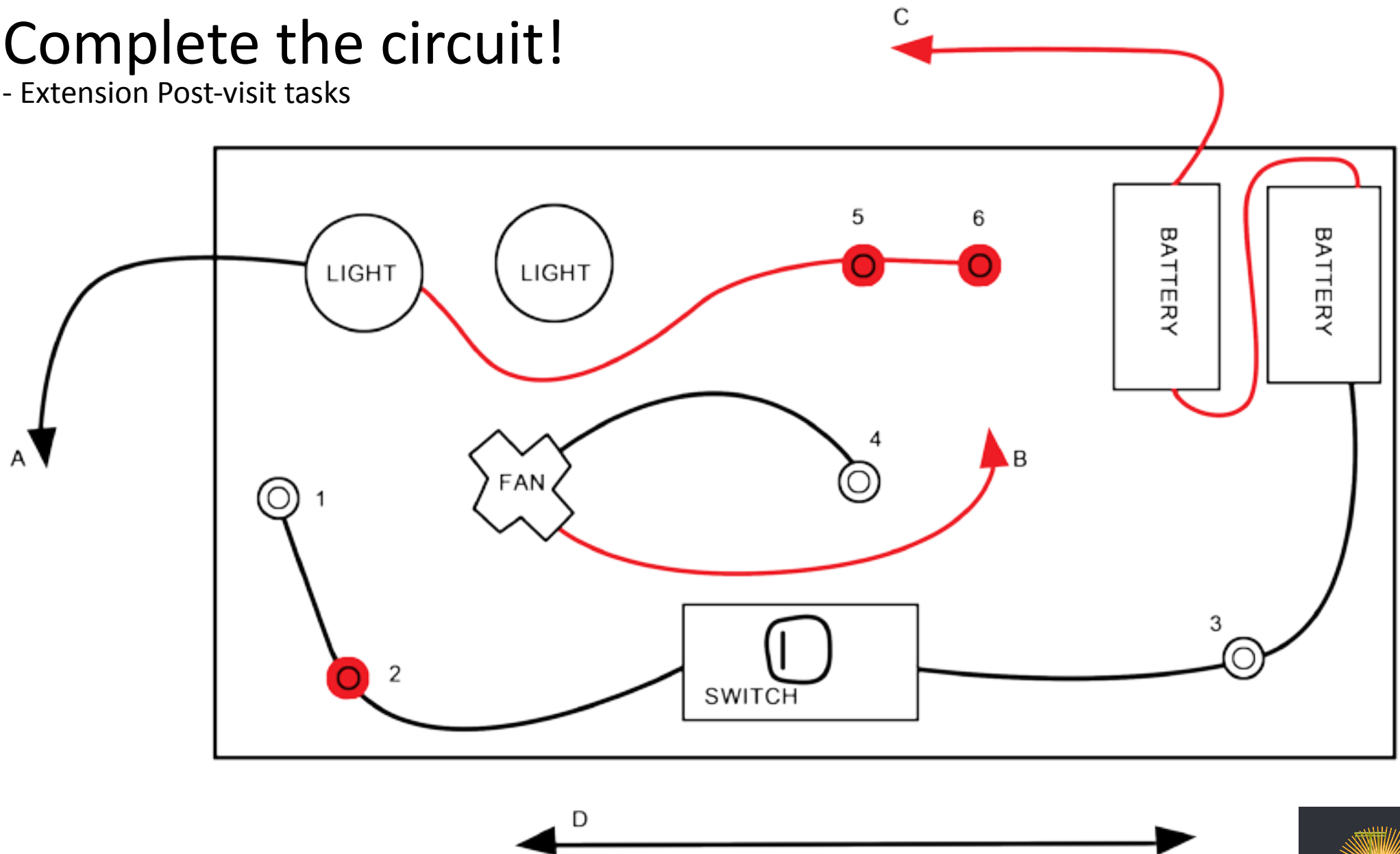
Connect the right wires and then use the switch to turn on the light.



ANSWER: Connect Wire A to Plug 1 and Wire C to Plug 6.

Complete the circuit!

- Extension Post-visit tasks

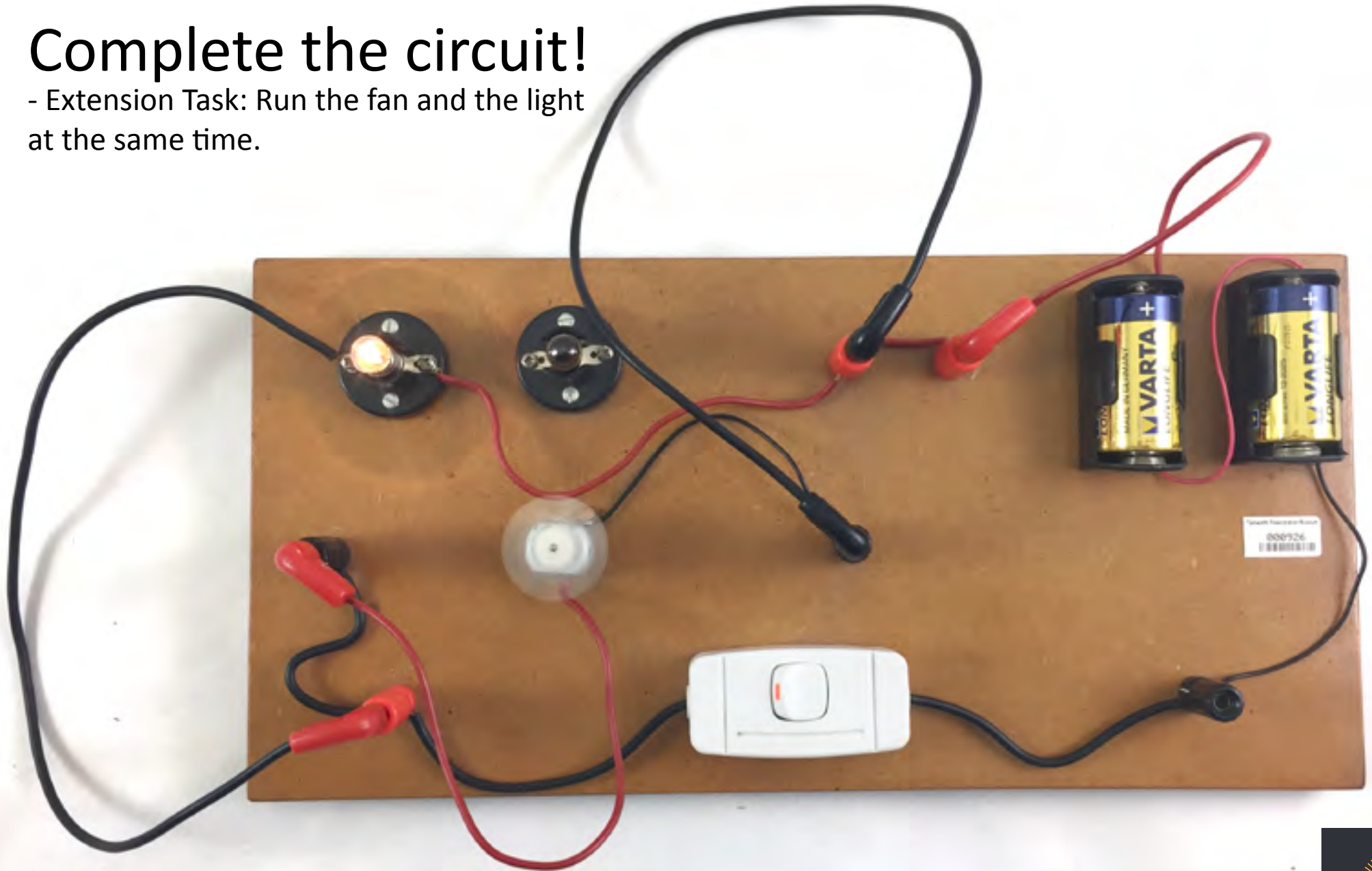


Extension:

- Run the fan and the light at the same time.
- Turn the switch off and turn use Wire D to bypass the the switch.

Complete the circuit!

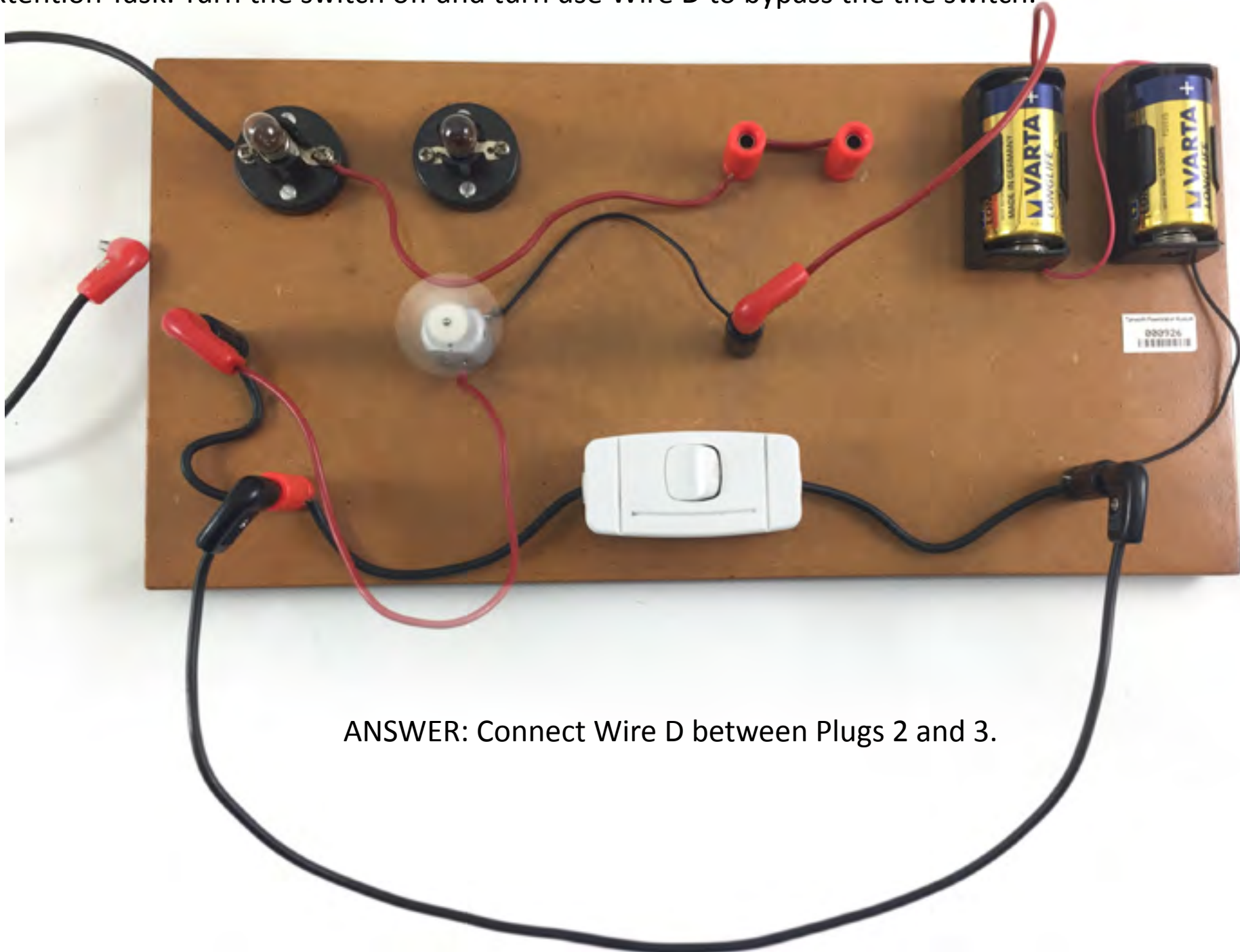
- Extension Task: Run the fan and the light at the same time.



ANSWER: Connect Wire B to Plug 1 and Wire C to Plug 6 with Wire D between Plugs 4 and 5.

Complete the circuit!

- Extension Task: Turn the switch off and turn use Wire D to bypass the the switch.



ANSWER: Connect Wire D between Plugs 2 and 3.

HISTORY – Stage 1

The Past in the Present

A student:

- HT1-3 describes the effects of changing technology on people's lives over time
- HT1-4 demonstrates skills of historical inquiry and communication

KEY INQUIRY QUESTIONS:

- What aspects of the past can you see today?
- What do they tell us?
- What remains of the past are important to the local community? Why?
- How have changes in technology shaped our daily life?

CONTENT

The impact of changing technology on people's lives (ACHHK046)

Students:

- identify examples of changing technologies in their home or community
- discuss the similarities and differences of technology from the past through a range of sources and sequence them over time
- use a range of communication forms to explain how one example of changing technology affected people's lives

The Past in the Present

PRE-VISIT INVESTIGATION

WHOLE CLASS ORIENTATION:

Ask students: **What do you know about the past? How was it different to our lives today?**

Using a tablet or ipad and the image on the back of 'Tamworth Powerstation Museum's School Visit Experience' and the 'APositive' app, students use the interactive AR image to address these questions:

- What about the scene in this APositive image is familiar to you?
- Can you identify any buildings in this scene?
- What about this scene is different to how these buildings look today?

INDEPENDENT DISCOVERY:

Resources: Now and Then activity sheet, pencils, ipads/tablets with the APositive app installed.

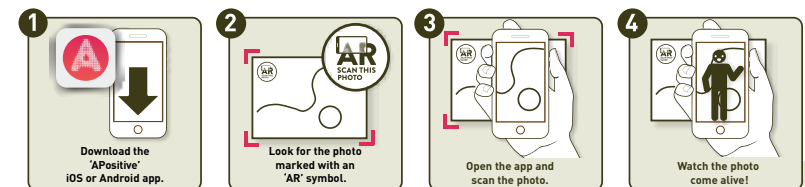
Independently, students are given a copy of the activity sheet 'Now and Then' on the next slide and asked to complete the T chart with the modern electric equivalent of the object on the left. Students are also asked to label the image.

EXTENSION:

Students can search for other images of Tamworth in the past and compare it to how these buildings look now at <http://www.northerndailyleader.com.au/story/1588257/gallery-tamworth-then-and-now/#slide=2>

CONSOLIDATION:


As a whole group view <http://www.northerndailyleader.com.au/story/1588257/gallery-tamworth-then-and-now/#slide=2> on the IWB discussing each of the two images with and comparing and contrasting the scenes.



Name: _____ Date: _____

Past and Present

The pictures on the left show what people used in the past before we had electricity in our homes. Draw a diagram next to each item to show what we use now. Label your drawing.

Then	Now
	
	
	
	

A special date to keep in mind is **9 November**, when the museum celebrates the anniversary of the switching on of the lights by running the steam engines and providing **free entry to the museum**.

MUSEUM VISIT



HISTORY – Stage 2

Community and Remembrance

A student:

- HT2-2 describes and explains how significant individuals, groups and events contributed to changes in the local community over time
- Students will sequence familiar people and events. (ACHHS065, ACHHS081)

KEY INQUIRY QUESTIONS:

- How has our community changed? What features have been lost and what features have been retained?
- What is the nature of the contribution made by different groups and individuals in the community?
- How and why do people choose to remember significant events of the past?

CONTENT:

ONE important example of change and ONE important example of continuity over time in the local community, region or state/territory (ACHHK061)

Students:

- using a range of sources, describe and explain how and why ONE area, eg transport, work, education, entertainment and daily life, has changed or ONE that has remained the same in the local area, region or state/territory since colonial times

Community and Remembrance

TEACHER BACKGROUND KNOWLEDGE:

Tamworth was the first place in the Southern Hemisphere to have municipally funded electrical street lighting.

During a visit to Tamworth Powerstation Museum, students will learn about:

- That Tamworth was the first place in the Southern Hemisphere to have municipally funded electric street lighting
- Who was instrumental in this event.
- How the lighting was originally switched on
- See the ceremonial key
- Develop a greater understanding of the significant individuals who were instrumental in making Tamworth the first place in the southern hemisphere and identify familiar streets and buildings in Tamworth named after these individuals
- The effects that this event had on Tamworth as a community
- The contribution of local community members in this story of national and international significance

PRE-VISIT INVESTIGATION

WHOLE CLASS ORIENTATION:

Individually, or as a group students investigate Tamworth Powerstation Museum's website:

<http://tamworthpowerstationmuseum.com.au/>

INDEPENDENT DISCOVERY:

Using the proforma on the next slide, students review and sequence the history of electricity in society, with a local focus, by completing the timeline with missing words provided. Answers on the next slide.

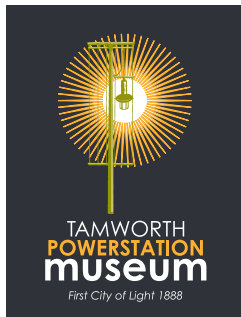
EXTENSION:

Students can search for other images of Tamworth in the past and compare it to how these buildings look now at

<http://www.northerndailyleader.com.au/story/1588257/gallery-tamworth-then-and-now/#slide=2>

CONSOLIDATION:

As a whole class, review student answers to the completed timelines. A more detailed timeline is also available at <http://tamworthpowerstationmuseum.com.au/timeline/>



Name: _____ Date: _____

1808 FIRST HUMAN PRODUCED ELECTRIC <input type="text"/>	1819 LINK BETWEEN ELECTRICITY AND MAGNETISM DISCOVERED
1837 FIRST ELECTRIC TELEGRAPH	1861 ELECTRIC <input type="text"/> COMES TO TAMWORTH
1863 FIRST ELECTRIC LIGHT IN AUSTRALIA	1876 TAMWORTH GETS ITS FIRST OIL STREET LIGHT
1877 WORLD'S FIRST ELECTRIC STREET LIGHTS – PARIS	1878 FIRST INCANDESCENT LIGHT BULB
1879 THOMAS EDISON LIGHT BULB	1881 FIRST ELECTRIC STREET LIGHTS IN THE UK
1882 TAMWORTH GETS GAS STREET LIGHTS	1888 TAMWORTH GETS <input type="text"/> MUNICIPAL ELECTRIC STREET LIGHTS IN AUSTRALIA
1900 <input type="text"/> TAMWORTH GETS A <input type="text"/> EXCHANGE	1904 <input type="text"/> CATCHES UP AND GETS ELECTRIC STREET LIGHTS
1907 TAMWORTH'S HOMES AND BUSINESSES GET ELECTRICITY	1922 TAMWORTH GETS A NEW POWERSTATION
1938 MEMORIAL OBELISK ERECTED	1946 TAMWORTH PROCLAIMED A CITY
1988 <input type="text"/> POWERSTATION MUSEUM OPENS	

REPLACE
THE MISSING
WORDS:

TAMWORTH


TELEPHONE

FIRST

LIGHT

SYDNEY

TIMELINE:

- 
- 1808**
FIRST HUMAN PRODUCED
ELECTRIC LIGHT
 - 1837**
FIRST ELECTRIC TELEGRAPH
 - 1863**
FIRST ELECTRIC LIGHT IN
AUSTRALIA
 - 1877**
WORLD'S FIRST ELECTRIC
STREET LIGHTS – PARIS
 - 1879**
THOMAS EDISON LIGHT
BULB
 - 1882**
TAMWORTH GETS GAS
STREET LIGHTS
 - 1900**
TAMWORTH GETS A
TELEPHONE EXCHANGE
 - 1907**
TAMWORTH'S HOMES AND
BUSINESSES GET ELECTRICITY
 - 1938**
MEMORIAL OBELISK
ERECTED
 - 1988**
TAMWORTH POWERSTATION
MUSEUM OPENS
 - 1819**
LINK BETWEEN ELECTRICITY AND
MAGNETISM DISCOVERED
 - 1861**
ELECTRIC TELEGRAPH COMES TO
TAMWORTH
 - 1876**
TAMWORTH GETS ITS FIRST OIL
STREET LIGHT
 - 1878**
FIRST INCANDESCENT LIGHT
BULB
 - 1881**
FIRST ELECTRIC STREET LIGHTS
IN THE UK
 - 1888**
TAMWORTH GETS FIRST
MUNICIPAL ELECTRIC STREET
LIGHTS IN AUSTRALIA
 - 1904**
SYDNEY CATCHES UP AND GETS
ELECTRIC STREET LIGHTS
 - 1922**
TAMWORTH GETS A NEW
POWERSTATION
 - 1946**
TAMWORTH PROCLAIMED A CITY

Sequencing historical people and events (ACHHS098, ACHHS117)

Electricity in our daily lives

CONTENT:

ONE important example of change and ONE important example of continuity over time in the local community, region or state/territory (ACHHK061)

Students use a range of sources, describe and explain how and why ONE area, eg transport, work, education, entertainment and daily life, has changed or ONE that has remained the same in the local area, region or state/territory since colonial times

TEACHER BACKGROUND:

A visit to Tamworth Powerstation Museum for Stage 2 students is a chance to see historical inquiry in action. Students are given opportunities to learn directly from the world around them in an interactive Museum experience.

This occurs through:

- Hearing the volunteers tell stories first hand about past and present
- Experience the volunteer guides' lived experience of life in the past and present and the changes that have happened over their lifetime
- Seeing objects from the past in action
- Hands-on experiences with appliances and items and their modern equivalents
- Seeing artifacts from the past in first person
- Active engagement with the Museum's extensive Collection
- Meeting individuals who have made significant contributions to the local community

PRE-VISIT INVESTIGATION

ORIENTATION:

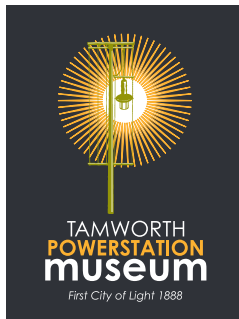
In small groups students are given 3 minutes to record all the ways in which they have utilised electricity in their day so far. Bring students together and as a whole class, brainstorm record students' findings, with a scribe listing answers on the IWB.

GROUP DISCOVERY:

As a whole class, view Tamworth Powerstation Museum's website <http://tamworthpowerstationmuseum.com.au/our-collection/> and add any other items that may have been missed. Listed items then can be sorted into the following categories based on the Museum's Collection categories on the next slide.

CONSOLIDATION:

As a group, devise questions to be asked of the Museum volunteer guide who will conduct the class tour of the Museum. As many of these volunteers have valuable insight into the changes electricity had brought to our daily lives, you may consider asking about their lived experience.



'How has electricity changed the way we live?'

- Cleaning
- Communication
- Cooking
- Electrical Technology

- Entertainment
- Heating and Cooling
- Kettles and Jugs
- Kitchen
- Laundry and Ironing
- Lighting
- Medical and Personal Care

A special date to keep in mind is **9 November**, when the museum celebrates the anniversary of the switching on of the lights by running the steam engines and providing **free entry to the museum**.

MUSEUM VISIT



Electricity in our daily lives

POST-VISIT ACTIVITY:

Students in this lesson will focus on an electrical appliance that has changed our daily lives. Following their Museum experience, they will develop a deeper understanding of a particular item they viewed during the excursion. Students will research this item through the museum's website and catalogue.

INDEPENDENT DISCOVERY:

Ask students to record their answers to the following inquiry questions based on the information recorded in the Museum's Collection webpages and the following side. This activity will give students an insight into the ways in which daily life has been changed as a result of the use of electricity in our home.

- Whose object was this?
- Where did it come from?
- Why is it important?
- What does it tell us?
- How would it have been used in the past?
- What does it mean to us?
- How significant is it and why?
- What is the equivalent object we use today for this purpose?
- How has this kind of object changed over time?

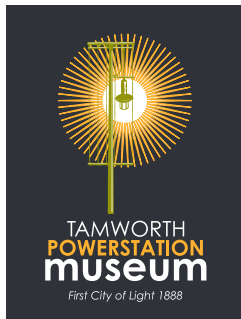
RESOLUTION/ EXTENSION:

As a group, bring students together to discuss their answers.

In a Think, Pair, Share activity, students consider the other ways in which the use of electricity and technology might have changed the ways in which we live our daily lives. As a whole group discuss and share findings.

Pose the question to students:

Electricity is often referred to as 'the all pervasive servant'. What do you think this statement might mean?



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POWERED MANUFACTURERS OF ELECTRICAL REFRIGERATION

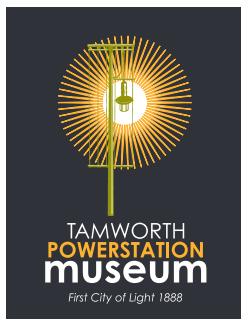
Tamworth Powerstation Museum
CONCEPT AND DESIGN: MIRANDA HECKENBERG, MODEL AND CLOTHES: KATHYRN ARMSTRONG, PHOTOS: LOU FARINA

CASESTUDY:

This Kelvinator Fridge is still working in the museum showroom. See education officer Kate Armstrong with the fridge in the picture to the left.

Click on the closed picture of the fridge to go to our online catalogue and find out about its history and the Tamworth family that used to own it!

Why do we keep food in a refrigerator? What did people use before electricity to keep food cool?



Museum opening hours: School groups by appointment.
Museum volunteers are available to provide guided tours.

Address: 216 Peel Street Tamworth NSW 2340.

Admission price (students): \$3

Phone: (02) 6766 8324

Website: tamworthpowerstationmuseum.com.au

