



Teacher Resource

Battery Recycling

Focus Questions

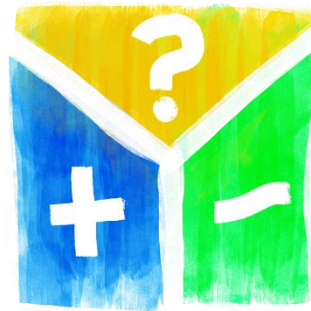
Discuss the BTN story as a class and record the main points of the discussion. Students will then respond to the following:

1. Complete the following sentence. When a battery is connected _____ flow out of the negative terminal.
2. Why shouldn't batteries be put in landfill?
3. Why is the demand for battery recycling increasing?
4. How many batteries were recycled in Australia in 2018?
 - a. 10%
 - b. 50%
 - c. 70%
5. How can you safely recycle batteries?

Activity: Note taking

Students will practise their note-taking skills while watching the BTN Battery Recycling story. After watching the story, ask students to reflect on and organise the information into three categories. What information in the story was...?

- Positive
- Negative or
- Interesting



Activity: Class Discussion

Discuss the BTN Battery Recycling story as a class and record the main points on a mind map. Students will then respond to the following and share their ideas as a class.

- What did you learn from this story?
- What does this story make you wonder?
- What are some items that use batteries?
- Does your school recycle its batteries? Discuss the recycling programs your school currently has in place.
- Think of three questions you would like to ask about the story.
- What does recycling mean to you?

EPISODE 4

22nd February 2022

KEY LEARNING

Students will learn how batteries work and why it is important to recycle them safely.

CURRICULUM

Science – Year 5

Scientific knowledge is used to solve problems and inform personal and community decisions.

Science – Year 6

Electrical energy can be transferred and transformed in electrical circuits and can be generated from a range of sources.

Scientific knowledge is used to solve problems and inform personal and community decisions.

Science – Year 7

Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations.

Design & Technologies – Years 5 & 6

Investigate how electrical energy can control movement, sound or light in a designed product or system.

Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions.

Activity: Glossary

Students will brainstorm a list of key words that relate to the BTN Battery Recycling story. Students may want to use pictures and diagrams to illustrate the meaning and create their own glossary. Here are some words to get students started.

BATTERY	ELECTRIC CURRENT	TERMINALS
ELECTROLYTE	ELECTRONS	VOLT

Activity: Research project

Discuss the information raised in the BTN Battery Recycling story. What questions were raised in the discussion and what are the gaps in students' knowledge? The following KWLH organiser provides students with a framework to explore their knowledge on this topic.

What do I <u>k</u> now?	What do I <u>w</u> ant to know?	What have I <u>l</u> earnt?	<u>H</u> ow will I find out?

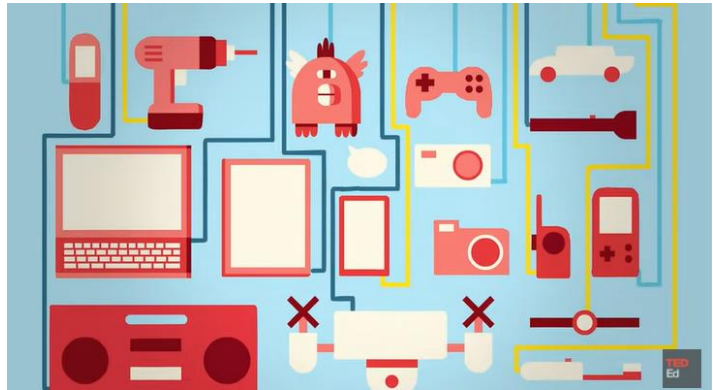
Students will develop their own question/s to research or choose one or more of the questions below.

- Who invented the first battery? Create a biography.
- What is the history of the battery? Explore the history and development of batteries and plot your findings on a timeline.
- How do batteries work? Explain using your own words.
- What is inside a battery that helps produce current electricity?
- What are the components of a battery? Choose one battery to research in more detail and label each part of the battery.
- What can happen if batteries are placed in landfill? What problems can it cause?
- How can you recycle your batteries responsibly?
- What is the difference between disposable batteries and rechargeable batteries? Create a Venn diagram.
- Should there be incentives for people who reduce, reuse and recycle? What do you think the incentives should be?

Activity – How batteries work

As a class, watch this TedEd video [How batteries work](#) and then students will respond to the following questions.

1. What animal helped scientists create the first battery?
2. What two chemicals did Alessandro Volta use in his experiment to test his idea? Describe his experiment.
3. Why is our standard unit of electrical potential called the volt?
4. What happens when most of the metal in a battery oxidises?
5. How are rechargeable batteries different to standard batteries?



Activity – Choose a project

Individually or in small groups, students will choose one of the following projects to work on and then present their findings to the class.

Eco-activity

Design and build your own battery collection box to safely store flat batteries. Find a place to keep the box at school and promote your new recycling initiative.

Test your classmates

Brainstorm the different types of waste produced at your school. Do you know where they can be recycled? Create a quiz to test your classmate's knowledge about recycling.

Take action

Set up a battery recycling initiative in your school. Educate your school community about your new initiative and get them involved!

Campaign

Design and run a campaign educating others in your community about how they can recycle their flat batteries.

Activity – Interactive Game

Which is the right bin? This [interactive game](#) helps students to understand the correct way to dispose of household items. Students make their way through six rooms and look for flashing stars that indicate which items need to go in the bin. They decide which items need to go in landfill, can be recycled, placed in an organics bin or require special collection. Ask students to think of other things at their home that need to be disposed of. Which bin do they go in? Do the bins in this game match the ones they have at home?



[Teacher Guide](#)

Useful Websites

- [How batteries work](#) – TedEd
- [How a battery works](#) – Australian Academy of Science
- [Battery Recycling](#) – B - cycle
- [Australia's first national recycling scheme for household batteries launches](#) – ABC News
- [War on e-waste](#) – BTN