Teacher Resource

Coal Explainer

Focus Questions

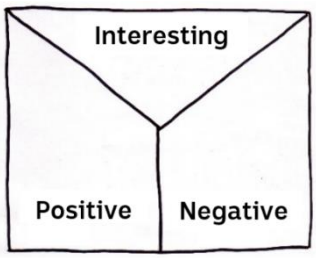
Discuss the BTN story as a class and record the main points of the discussion. Students will then respond to the following:

1. How does coal form?
2. Which greenhouse gas is produced when coal is burnt?
3. Where in Australia was coal first discovered? Find on a map.
4. At the recent COP26 climate summit, countries agreed to
    a. Phase up coal
    b. Phase down coal
    c. Phase out coal
5. What does Prime Minister Scott Morrison say is the future of coal in Australia?

Activity: Note taking

Students will practise their note-taking skills while watching the BTN Coal Explainer 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 information raised in the BTN Coal Explainer story. Ask students to record what they know about coal on a mind map. What questions do students have? Use the following questions to guide the discussion:

- What is coal made of and where is it found?
- How does coal generate electricity?
- Why is coal such a big issue?
- What impact does the burning of coal have on the environment?
- Do you think it is important that we phase out coal? Give reasons.

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KEY LEARNING
Students will develop a deeper knowledge of what coal is, how it forms, how it is used and how it impacts people and the environment.

CURRICULUM
Science – Year 4
Science knowledge helps people to understand the effect of their actions.

With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge.

Science – Year 5 and 6
Scientific knowledge is used to solve problems and inform personal and community decisions.

With guidance, pose clarifying questions and make predictions about scientific investigations.

Science – Year 7
Some of Earth's resources are renewable, including water that cycles through the environment, but others are non-renewable.

Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge.

Activity: KWLH

Hold a class discussion about the information raised in the BTN Coal Explainer story. What questions were raised in the discussion and what are the gaps in their knowledge? The following KWLH organiser provides students with a framework to explore their knowledge on this topic and consider what they would like to know and learn.

What do I know?	***What do I want to know?***	***What have I learnt?***	***How will I find out?***

Research questions for Inquiry

Students will start to think like a scientist and develop their own question/s for inquiry, collecting and recording information from a wide variety of sources. Students may develop their own question for inquiry or select one or more of the questions below.

- What is coal and how does it form? Include as many of the following terms in your explanation: sedimentary, carbon, fossil fuel, Carboniferous period, pressure, carbonisation, coal seam.
- When and where was coal first discovered in Australia? Investigate the history of coal and record your findings on a timeline.
- How do living things turn into fossil fuels?
- What is the carbon cycle? How long does it take for fossil fuels to form?
- How much of the world's electricity comes from coal? Look at other sources of electricity and compare and contrast to coal.
- What are fossil fuels and what are the issues with continuing fossil fuel use?
- Will we ever run out of coal? What is the difference between renewable and non-renewable energy? Record your responses on a Venn diagram.
- Do you think we should continue burning coal for power? Why or why not?

Activity: Persuasive text

Students will develop a persuasive text for or against one of the following statements (alternatively, students can develop their own statement):

"Coal power should be banned"
"100% renewable energy can power the world"
"The Australian government should support phasing out coal"
"Coal mining should be allowed in Australia"
"We can live without fossil fuels"

Students will explore one or more of the following questions as part of their research:

- How does burning coal affect the environment?

- How will banning coal power affect the economy?
- What are some alternatives to coal power?
- How can the government promote and support the use of renewable energies?
- Who and what will be at risk if we continue to burn fossil fuels?
- Why do you think some people don't want to ban coal power?

Terminology

Students will create their own class glossary of keywords and terms. Students can use illustrations and diagrams to help explain each keyword. Encourage students to use as many of the following key words and terms in their persuasive text as they can.

COAL MINING	SUSTAINABLE	FOSSIL FUELS
AIR POLLUTION	GREENHOUSE GAS EMISSIONS	CARBON DIOXIDE
NATURAL RESOURCE	ENERGY	ECONOMY

Persuasive text Structure

Encourage students to use a range of sources. Provide students with the following structure to follow when completing this activity.

Introduction

- What is the point you are trying to argue? Construct an introductory paragraph which states the issue or topic.
- Introduce the arguments that will be developed in the body of the text.

Body

- Construct arguments that support your point of view.
- Each paragraph starts with a topic sentence which introduces each point.
- The rest of the paragraph gives more reasons.
- Arguments can be ordered from strongest to weakest.

Conclusion

- Restate your position on the argument.
- Construct a concluding paragraph that provides a summary of your arguments and a call to action.

Tips

- Who is your audience? For example, are you directing your argument at kids, teachers or politicians?
- Explore how language choices can have a big impact on persuading your audience.
- Which language devices give the report credibility and authority?
- Which are designed to create an emotional response in the listener?
- Provide facts and evidence to support your argument.
- Write in the present tense.
- Check your spelling and punctuation.
- Use this Read Write Think persuasion map to organise your information.

Activity: Quiz

1. Coal is a naturally occurring rock.

A. True

B. False

2. What is coal made of?

A. Charcoal

B. Inorganic matter

C. The remains of living things

3. What type of rock is coal?

A. Igneous

B. Metamorphic

C. Sedimentary

4. Coal is a renewable resource.

A. True

B. False

5. When was coal first used to generate electricity for homes and factories?

A. 1780s

B. 1880s

C. 1980s

6. What happens when coal is burnt?

A. It makes heat and light energy

B. It turns into charcoal

C. It reverts into a living thing

7. What type of gas is released when coal is burnt?

A. Carbon Dioxide

B. Hydrogen

C. Krypton

8. What is NOT a fossil fuel?

A. Coal

B. Natural gas

C. Bio-diesel

9. What is the biggest contributor to climate change?

A. Burning coal

B. Cutting down forests

C. Increased livestock farming

10. At the COP26 climate summit countries agreed to…

A. Phase up coal

B. Phase down coal

C. Phase out coal

Quiz Answers: 1A, 2C, 3C, 4B, 5B, 6A, 7A, 8C, 9A, 10C.

Useful Websites

- Adani Coal Mine – BTN
- Clean Coal – BTN
- Zero Emissions – BTN
- Coal – National Geographic
- Coal – Geoscience Australia
- Why is coal such a big issue in climate change talks? – Newsround