



MINE LAND REHABILITATION AUTHORITY

Learn about mine rehabilitation in the Latrobe Valley

Why mine rehabilitation?

The power industry has been a significant part of the Latrobe Valley's history now for a century. But as the remaining power stations are set to close over the next 30 years, what will happen to the brown coal mines that feed the power stations, and what opportunities may this bring to our community and the region?

For teachers and students

From brown coal mining, to groundwater and surface water use and availability and landform design, our lesson plans explore mine rehabilitation to help students understand the concept of transitioning mined land to safe, stable and sustainable post-mining landforms in a local geographical context. Featuring a large 3D timber model of the Latrobe Valley, students participate in interactive discussions, hands-on demonstrations, role play, and group activities.

About us

The Mine Land Rehabilitation Authority is an independent body working with community, industry and government in planning for the rehabilitation of declared mine land in Victoria to ensure transition to safe, stable and sustainable post-mining landforms.

The creation of the authority was recommended by the Hazelwood Mine Fire Inquiry. Our role replaced the Latrobe Valley Mine Rehabilitation Commissioner who monitored mine rehabilitation in the Latrobe Valley from June 2017 to 30 June 2020.

We will oversee the implementation of the Victorian government's Latrobe Valley Regional Rehabilitation Strategy. This strategy sets guidelines for the rehabilitation of the three Latrobe Valley brown coal mines. We'll ensure locals continue to be informed and involved in mine rehabilitation, and also monitor, maintain and manage and own registered mined land post closure if required.

Education program



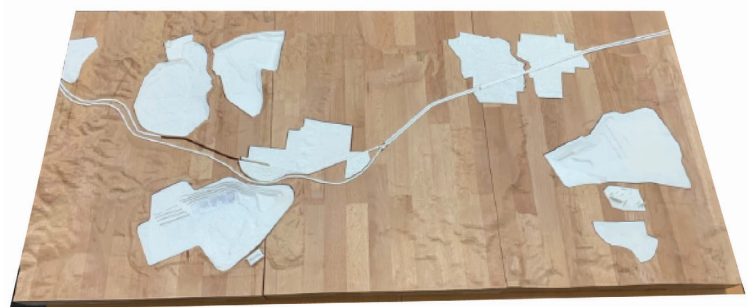
Curriculum

Lesson plans are suitable for Foundation to Year 10 students developed to meet the Victorian Curriculum, and are free to schools in the Latrobe Valley.



Exploratory questions

- What is brown coal?
- What is mine rehabilitation and why is it important?
- How should the Latrobe Valley brown coal mines be rehabilitated?
- What does this mean for our region?
- What skills are needed in planning for rehabilitation?
- What does mine rehabilitation look like elsewhere?



**To book an incursion or to arrange
a teacher information session,
please contact us:**

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mineland.vic.gov.au/education

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MINE LAND REHABILITATION AUTHORITY

FOUNDATION - LEVEL 2

LEVEL 3-4

LEVEL 5-6

Learning outcomes

Students learn about brown coal in the Latrobe Valley, where it comes from and what it is used for. They learn that mined land needs to be returned to a safe, stable and sustainable landform for future use. Students learn what causes a brown coal mine to become unstable and what could be done to help make it safe for the environment and the community.

Duration

45 minutes to one hour

Objective

Students participate in an interactive discussion and hands-on demonstrations to learn about the properties of brown coal, the geography of the Latrobe Valley coal mines and towns, the need to rehabilitate the land to a safe, stable and sustainable form and how, referring to examples of existing and proposed future land uses.

RESOURCES SUPPLIED

- PowerPoint presentation and video
- Sample of coal
- Bucket filled with water
- Diorama of a coal mine - clear container filled with sand, gravel, paper, and a half-filled balloon
- Small hand shovel
- Costume - hi-vis vest, hat and glasses
- 1.5 x 7m 3D model of the Latrobe Valley towns and mines
- Place markers for the model
- Template of a coal mine

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- Place markers for the model
- Template of a coal mine

Overview of activities

Elements of brown coal

A sample of brown coal is presented to discuss its properties and to conduct an experiment using a bucket filled with water.

Floor heave

Using a diorama of a coal mine, students become 'miners', and dig out coal from the mine pit to observe and discuss what happens to the coal and material underneath.

Block sliding

In groups of three, each student is assigned a role: coal wall (batter), coal, and mine pit to demonstrate what happens when a coal wall collapses into the mine.

Observing the Valley

Using markers provided, students are asked to mark areas on the 3D model and discuss the areas of the map.

REFLECTION

Using a template provided, students create a picture of a full pit lake. Students are asked to think about what the land and water could be used for and draw it if they can.

Using a template provided, students choose to either create a picture of a full pit lake or an empty pit. As a group, students compare their drawings and discuss.

Using a template provided, students choose to either create a picture of a full pit lake or an empty pit and draw what they think the land could be used for in either scenario. As a group, students compare their drawings and discuss.

Further learning

- Visit PowerWorks Morwell and/or a public viewpoint overlooking a Latrobe Valley coal mine.
- Explore the history of power generation in the Latrobe Valley.
- Find out more about the water sources (surface water from Latrobe River and groundwater) used by the mine operators.

LEVEL 7-8

LEVEL 9-10

Learning outcomes

Students learn about what brown coal is, how it is used and extracted as a natural resource. They begin to understand that coal mining can be planned in ways that can minimise the impact on the environment. Students gain an understanding of mine rehabilitation concepts, stability issues in the Latrobe Valley, and examples of mine rehabilitation elsewhere.

Duration

45 minutes to one hour

Objective

Students participate in an interactive discussion and hands-on demonstrations to learn about the properties of brown coal, the geography of the Latrobe Valley coal mines and towns, the need to rehabilitate the land to a safe, stable and sustainable form and how, referring to examples of existing and proposed future land uses.

Resources supplied

- PowerPoint presentation and video
- Sample of coal
- Bucket filled with water
- Diorama of a coal mine - clear container filled with sand, gravel, paper, and a half-filled balloon
- Small hand shovel
- 1.5 x 7m 3D model of the Latrobe Valley towns and mines
- Place markers for the model
- Butchers' paper and whiteboard markers

Overview of activities

Elements of brown coal

A sample of brown coal is presented to discuss its properties and to conduct an experiment using a bucket filled with water.

Floor heave

Using a diorama of a coal mine, students become 'miners' with the option to role-play in costume, and dig out coal from the mine pit to observe and discuss what happens to the coal and material underneath.

Block sliding

In groups of three, each student is assigned a role: coal wall (batter), coal, and mine pit to demonstrate what happens when a coal wall collapses into the mine.

Observing the Valley

Using markers provided, students are asked to mark areas on the 3D model and discuss the areas of the map.

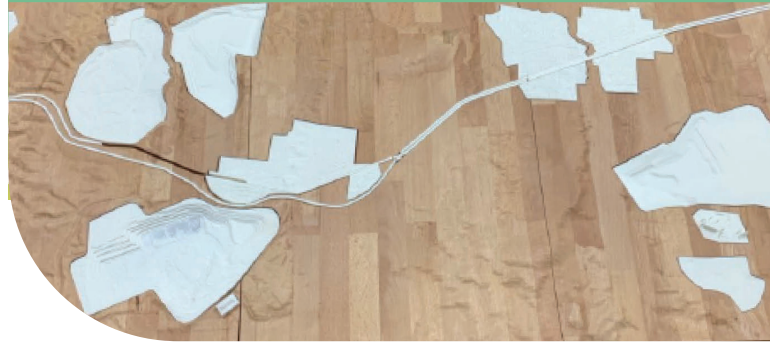
REFLECTION

Students are split into groups and are given a topic: 'full pit lake' and 'empty pit'. In their groups, students list the advantages and disadvantages for each on butchers' paper. The groups present their findings and discuss which option would meet the mine rehabilitation objectives explored and why/why not.

Students are split into groups and are given a topic: 'full pit lake' and 'empty pit'. In their groups, students list the advantages and disadvantages for each on butchers' paper. Each group presents their findings and discuss which option would meet the mine rehabilitation objectives explored. Students discuss which option they prefer and why.

Further learning

- Visit PowerWorks Morwell and/or a public viewpoint overlooking a Latrobe Valley coal mine.
- Explore the history of power generation in the Latrobe Valley.
- Find out more about the water sources (surface water from Latrobe River and groundwater) used by the mine operators.



Victorian Curriculum focus areas

FOUNDATION-2	LEVEL 3-4	LEVEL 5-6	LEVEL 7-8	LEVEL 9-10
SCIENCE				
<p>Science Inquiry Skills <i>Planning and conducting</i> Participate in guided investigations, including making observations using the senses, to explore and answer questions (VCSIS051)</p>	<p>Science Understanding <i>Chemical sciences</i> Natural and processed materials have a range of physical properties; these properties can influence their use (VCSSU060)</p>	<p>Science Inquiry Skills <i>Questioning and predicting</i> With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be based on previous experiences or general rules (VCSIS082)</p>	<p>Science Inquiry Skills <i>Questioning and predicting</i> Identify questions, problems and claims that can be investigated scientifically and make predictions based on scientific knowledge (VCSIS107)</p>	<p>Science Understanding <i>Physical sciences</i> The description and explanation of the motion of objects involves the interaction of forces and the exchange of energy and can be described and predicted using the laws of physics (VCSSU133)</p>
HUMANITIES - GEOGRAPHY				
<p>Geographical Knowledge <i>Places and our connections to them</i> Natural, managed and constructed features of places, their location and how they change (VCGGK068)</p>	<p>Geographical Concepts and Skills <i>Place, space and interconnection</i> Identify and describe the characteristics of places in different locations at a range of scales (VCGGC071)</p>	<p>Geographical Knowledge <i>Factors that shape places and influence interconnections</i> Environmental and human influences on the location and characteristics of places and the management of spaces within them (VCGGK096)</p>	<p>Geographical Knowledge <i>Landform and landscapes</i> Different types of landscapes and their distinctive landform features (VCGGK116)</p>	<p>Geographical Knowledge <i>Environmental change and management</i> Environmental, economic and technological factors that influence environmental change and human responses to its management (VCGGK145)</p>
HUMANITIES - HISTORY				
<p>Historical Knowledge <i>Community Histories</i> The effect of changing technology on people's lives and their perspectives on the significance of that change (VCHHK065)</p>	<p>Historical Knowledge <i>Community, remembrance and celebrations</i> A significant example of change and a significant example of continuity over time in the local community, region or state/territory (VCHHK073)</p>	<p>Historical Knowledge <i>The Australian colonies</i> The effects of a significant development or event on a colony (VCHHK090)</p>	<p>Historical Concepts and Skills <i>Historical sources as evidence</i> Identify and explain patterns of continuity and change in society to the way of life (VCHHC102)</p>	<p>Historical Concepts and Skills <i>Continuity and change</i> Identify and evaluate patterns of continuity and change in the development of the modern world and Australia (VCHHC126)</p>