

EXPLORATION TO RECLAMATION: HOW DO WE MINE?

The life cycle of a mine project.

You will need to watch the video "How do we mine"

a) Cut out each of the Mine Project Processes from the worksheet and place them on the timeline in the order that they would most likely happen. Stick them on once you are happy with the sequence you have worked out.

b) Highlight each of the processes where geologists would be involved. Label these boxes with the geological disciplines that are employed at each highlighted stage. Annotate these processes to explain what they would do at each stage.

c) In a different colour draw a vertical line to show the point where a mine might start to be profitable.

**IDEA/
GEOLOGICAL
RECONNAISS
ANCE**

Checking if a
location may
have valuable

TIME



**↑
PRODUCTION**

Extracting and
refining ore
minerals

DIGGING DEEPER

d) In a different colour, annotate your timeline with some of the risks that might stop the project at different stages.

e) Estimate how long each of these processes might last for.

MINE PROJECT PROCESSES

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Cut out each of these boxes to place on the timeline of the Life Cycle of a Mine

<p>CLOSURE & DECOMMISSIONING</p> <p>Closing the mine and removing all the buildings</p> <p>↓</p>	<p>DETAILED EXPLORATION</p> <p>Detailed mapping and drilling of the ore body</p> <p>↓</p>	<p>FEASIBILITY STUDY</p> <p>Study how the orebody could be mined, processed & shipped</p> <p>↓</p>
<p>↑</p> <p>FINANCING</p> <p>Raising money from banks and investors to set up the mine</p>	<p>↑</p> <p>LICENCE AQUISITION</p> <p>Getting permission from government to explore for minerals</p>	<p>↑</p> <p>MINE CONSTRUCTION</p> <p>Building the roads, processing plants & other structures</p>
<p>MINERAL RESOURCE ESTIMATE</p> <p>Estimating the volume and grade of the ore body</p> <p>↓</p>	<p>PRELIMINARY EXPLORATION</p> <p>Remote sensing used to work out the area's geology</p> <p>↓</p>	<p>REHABILITATION & MONITORING</p> <p>Restoring the area and making checks on water & environment quality</p> <p>↓</p>
<p>↑</p> <p>SCOPING STUDY</p> <p>Testing basic concepts of mining the ore body</p>	<p>↑</p> <p>TRIAL PROCESSING</p> <p>First test of refining ore mineral into metal</p>	

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