

# DIY Activities to Celebrate Mining Week

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A DIY resource package to help celebrate Mining Week with activities that can be done at home or online. Online resources can be found at [MiningMatters.ca/MiningWeek](http://MiningMatters.ca/MiningWeek)

Student Investigation File

**Building Mineral  
Literacy through  
STEM Education**



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# Creating Mineral Mates

Look carefully at your three-dimensional shape as well as the two others that your friends have made and answer the following questions.

- a) What two-dimensional shape (polygon) makes up an octahedron?

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- b) How many faces are there on an octahedron?

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- c) What two-dimensional shape (polygon) makes up a cube?

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- d) How many faces are there on a cube?

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- e) What two-dimensional shapes (polygons) make up a hexagonal prism?

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- f) How many faces in all are there on a hexagonal prism?

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# The Importance of Rocks and Minerals in Our Everyday Life

Describe how a house would look if it were built without using mined rocks and minerals.

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# Rock Story Drama

Make a drawing to show what your group will do to demonstrate your knowledge of your chosen rock group.



# Rock and Mineral Concentration

After playing the card game **Rock and Mineral Concentration** three times, write out three words and their definitions.

Word \_\_\_\_\_

Definition \_\_\_\_\_  
\_\_\_\_\_

Word \_\_\_\_\_

Definition \_\_\_\_\_  
\_\_\_\_\_

Word \_\_\_\_\_

Definition \_\_\_\_\_  
\_\_\_\_\_



# Introduction to Mining

1. Read the **Information Bulletin: Let's Explore Mining** to learn about mining, the process that extracts valuable minerals and rocks from the Earth. Make point-form notes about one stage of the mining process.

Stage

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Important points

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2. Look at the two posters that show you what an underground mine and a surface mine (open pit mine) look like. List three ways in which the mines are different.

a)

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b)

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c)

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# Underground Mining Methods

1. As you watch the animations take note of the following:

| Mining Method: Room and Pillar              |  |
|---|--|
| (a) heavy equipment and machinery:          |  |
| (b) location of where the operation begins: |  |
| (c) presence of tunnels:                    |  |
| (d) the direction of the tunnels:           |  |
| (e) explosives and blasting:                |  |
| Mining Method: Sublevel Stopping            |  |
| (a) heavy equipment and machinery:          |  |
| (b) location of where the operation begins: |  |
| (c) presence of tunnels:                    |  |
| (d) the direction of the tunnels:           |  |
| (e) explosives and blasting:                |  |
| Mining Method: Cut and Fill Stopping        |  |
| (a) heavy equipment and machinery:          |  |
| (b) location of where the operation begins: |  |
| (c) presence of tunnels:                    |  |
| (d) the direction of the tunnels:           |  |
| (e) explosives and blasting:                |  |
| Mining Method: Sublevel Caving              |  |
| (a) heavy equipment and machinery:          |  |
| (b) location of where the operation begins: |  |
| (c) presence of tunnels:                    |  |
| (d) the direction of the tunnels:           |  |
| (e) explosives and blasting:                |  |





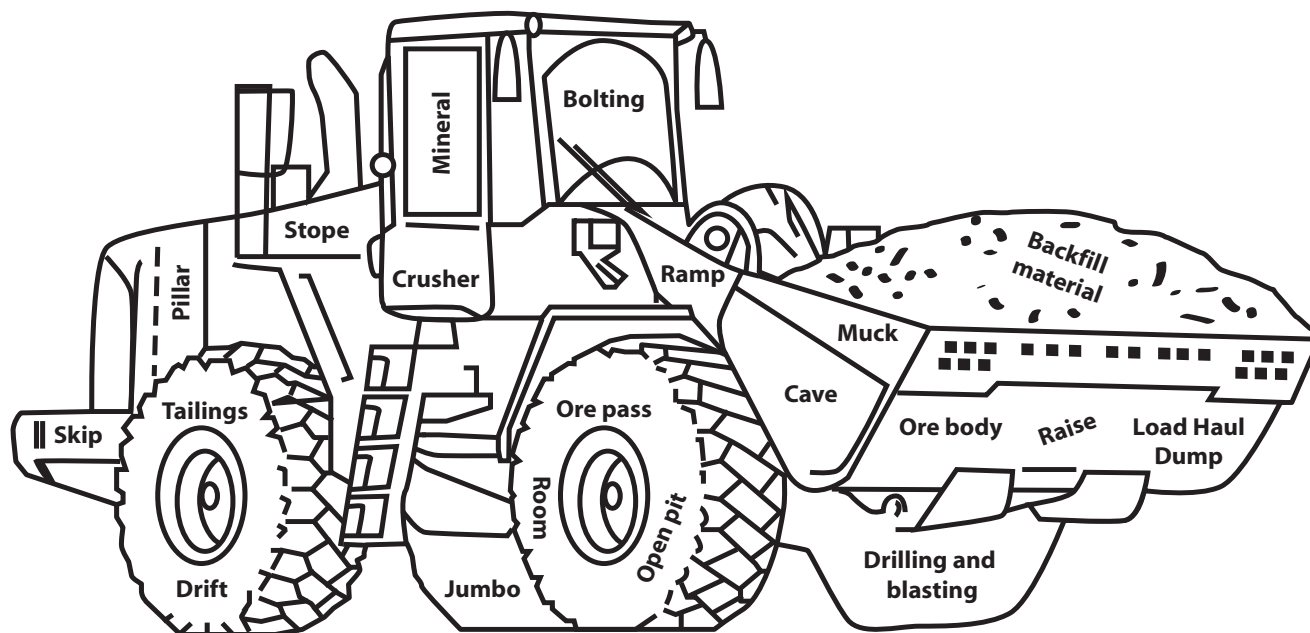
**Underground Mining Methods**

2. Place a check mark in the box to identify the method your group has been assigned.

Watch the animation a second time and reflect back on the mining method description you just read.

- Room and Pillar
- Sublevel Stopping
- Cut and Fill Stopping
- Sublevel Caving

In the illustration below, circle the words that apply to the mining method.

**Underground Mining Methods Sequence Chart**

3. There are many new terms and concepts related with underground mining methods. To demonstrate your understanding of the basic concepts, create a **Sequence Chain** outlining the steps that occur in the method assigned to your group. There are six steps presented in the Blackline Master titled, **Assigned Underground Mining Method** (next page). Not all of the steps need to be filled in in order to successfully complete the task. Most of the **Sequence Chains** can be completed in five steps.



Assigned Underground Mining Method: \_\_\_\_\_

Two large, empty, arrow-shaped boxes pointing to the right, designed for handwritten notes.

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# Operating a Surface Mine

1. Draw a picture of your model before any mining starts.



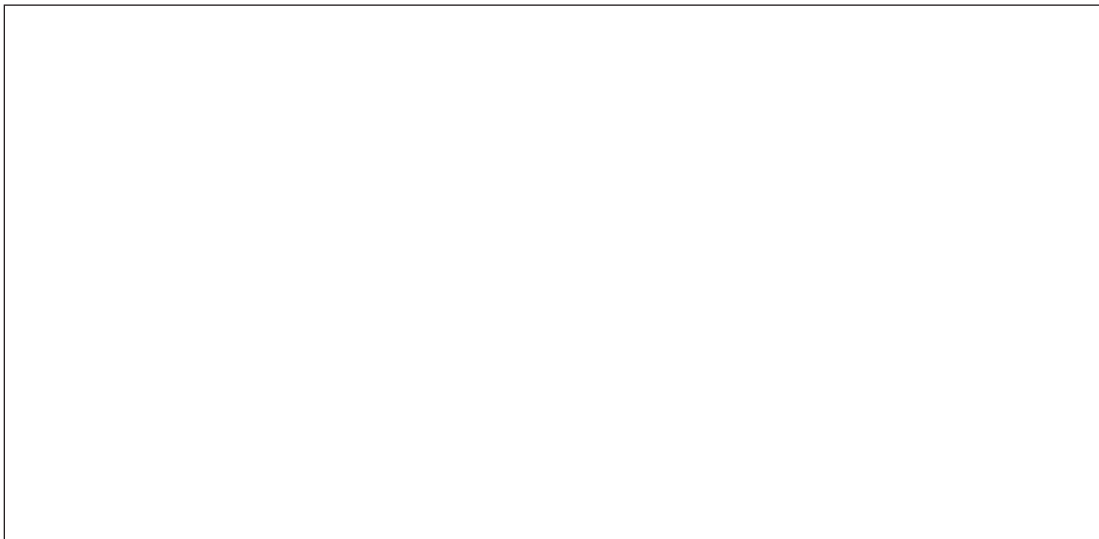
2. Make a list of the steps that you will follow to mine and reclaim your surface mine.

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3. Draw a picture of what your surface mine looks like during mining.



4. Examine your surface mine model and answer the following questions:

How has mining changed the land?

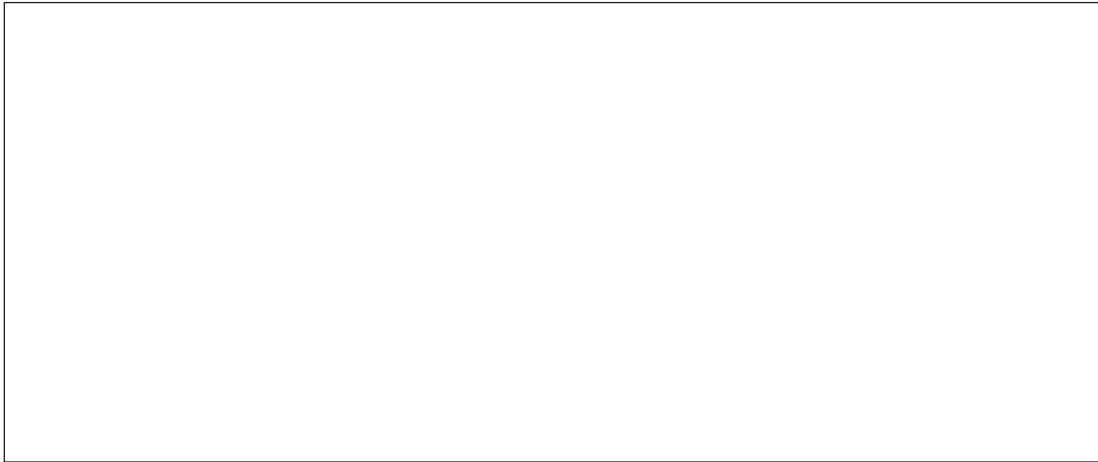
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How could we use the pile of mined-out rock that you took from your surface mine?

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5. Reclaim your mine. As much as possible, make the model look the way it did before mining, but without the minerals. Draw a picture of the land after mining.



6. Look at the Mine Site Reclamation photographs of mine sites during mining and the land after it has been reclaimed. Write three things that have been done to reclaim the land used for mining.

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# Mining Crushed Stone, Sand and Gravel

Paste your **Crushed Stone, Sand and Gravel Matching Game** Card in the correct box. Use words and pictures to illustrate your group members' cards.

| <b>Crushed Stone, Sand, and Gravel Activity</b> | <b>A Concern</b> | <b>A Possible Solution</b> |
|---|------------------|----------------------------|
|   |                  |                            |



# Recycling Rocks and Minerals

## Product Destination

Draw a line to connect each product to the correct destination when it is no longer useful. Use different coloured pencils or pens for Reuse, Recycle, and Landfill.

The diagram consists of a large light gray circle. Inside the circle, there are three ovals in the center, labeled 'Recycle', 'Landfill', and 'Reuse' from top to bottom. Surrounding these ovals are various products listed in two columns. The products are: AAA battery, Jewellery, Asphalt, Kitchen sink, Candy bar wrapper, Lamp, Car battery, Laser printer cartridge, Cardboard box, Magazine, CD and DVD, Nail/Screw, Coins, Phone, Computer, Plastic CD packing, Concrete, Plastic water bottle, Empty aerosol can, Pop can, Empty paint can and lid, Running shoes, Glass juice jar, Soup can, Glasses (spectacles), and Styrofoam container.



## Mining Comes to Ogimokwe

### Thought Bubble Organizer

Using the Thought Bubble Organizer, identify the unique perspectives each character has towards mining on their traditional territories, and the evidence presented in the script.

|  |  |
|--|--|
| <p><b>Rita Toulouse or “Nokomis”:</b><br/>The Grandmother, who is also a community Elder</p> | <p><b>Perspective:</b></p> <p><b>Evidence:</b></p> |
| <p><b>Sarah Solomon:</b><br/>Rita’s daughter, who is also a Band Council employee</p>        | <p><b>Perspective:</b></p> <p><b>Evidence:</b></p> |



|   |  |
|---|--|
| <p><b>Joe Solomon:</b><br/>Rita's son who lives and works in Toronto as a salesman for a large industrial company</p> | <p><b>Perspective:</b></p> <p><b>Evidence:</b></p> |
| <p><b>Catherine Morriseau:</b><br/>Sarah's friend who is a single mother of three and currently out of work</p>       | <p><b>Perspective:</b></p> <p><b>Evidence:</b></p> |





|   |   |
|---|---|
| <p><b>Andrew Solomon:</b><br/>Sarah's teenage son</p> | <p><b>Perspective:</b></p><br><br><br><br><br><p><b>Evidence:</b></p> |
| <p><b>Jake Beaucage:</b><br/>Andrew's best friend</p> | <p><b>Perspective:</b></p><br><br><br><br><br><p><b>Evidence:</b></p> |



Andrew was undecided about the mining project at the end of the script. Using the letter-writing template below, organize your thoughts and write a letter from Andrew’s perspective, expressing your opinion on the mining project.

|   |      |
|---|------|
| Date  |      |
| Salutation  | Dear |
| <b>Introduction</b><br>Say who you are and why you are writing.   |      |
| <b>Introduce the Evidence</b><br>Review the different perspectives raised at the dinner table.            |      |
| <b>Make a Commitment</b><br>Now that you have heard all the sides, where do you stand and why?            |      |
| <b>Conclusion</b><br>Restate the purpose of the letter and your perspective/ thank reader for their time. |      |
| <b>Closing</b><br>Yours sincerely, etc.   |      |
| Signature   |      |



# Creating a Mining CD

## Part A: Writing a Mining Song

1. Brainstorm with your group to come up with words and ideas that you could include in a mining song about rocks, minerals, metals, mining, and the environment.

Write your ideas below. Use your **Investigation File**, science textbook, or the **Word Wall** for help.

| Rocks  | Minerals and Metals |
|--------|---------------------|
|        |                     |
| Mining | The Environment     |
|        |                     |

2. Review your list with your group. Circle the ideas and words your group would like to include in your song.



Our Mining Song

Group Members:

Sung to the tune of:

Lyrics:



### Part B: Designing a Mining Song CD Jacket

Devise a group name, a title for your CD, and a list of the songs that will appear on your recording. Illustrate your CD cover here. Everything on your CD cover must relate to rocks, minerals, metals, mining, and the environment.



# Product Life Cycle Research

## 1. Product Life Cycle Research Plan

a) What products are made from rocks or minerals?

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b) Which minerals or rocks are used in these products?

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c) What type of presentation will you use to publish your research?

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d) What is the Topic for your research?

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e) What is the Purpose of your research?

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f) Who is the Audience for your published research?

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g) What must be included in your presentation?

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h) Where will you look for information? Try to have a variety of resources.

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**2. Research your product's life cycle and find out the answers to the following questions:**

a) What rocks, minerals, or metals are used to make the product?

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b) How is the product made?

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c) What environmental impacts may have occurred during the manufacturing of the product?

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d) Who benefits from the use of the product, and how do they use it?

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e) What choices are there for what happens to the product at the end of its life?

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**3. Choose one rock or mineral that is used to make your product. Research your choice and find out the answers to the following questions:**

a) What are its composition and characteristics?

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b) Where is it mined?

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c) How is it extracted or processed?

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d) Are there any environmental impacts during the mining and extraction process?

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e) How is the rock or mineral used in the product?

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**4. Publication Check List**

**Language**

My writing or printing is clear and easy to read.

I have checked the spelling.

I have used scientific vocabulary.

**Illustrations**

I have used pictures, graphs, or maps.

The illustrations are clearly labelled.

**Publishing and Design**

I have used headings and subheadings.

I have suitably used different colours.

I have suitably used different font sizes and styles.

The content of my publication is organized into sequence.

The layout of my publication is clear and organized.

**Content**

I have answered all the questions about my product.

I have answered all questions about one mineral or rock used in my product.

I have explained what I as a consumer could do to reduce the environmental impact.

**Resources**

These are the resources I have used:

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# Personal Reflection on Mining

Reflect on what you have studied during **Topic 3: Mining Responsibly**, and complete the sentences below:

- The most interesting part was...

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because....

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- In this topic, I have learned....

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- This topic is important to me and my life because....

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- When I compare the costs of mining to the benefits of mining, I see that....

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- From what I know about mining and rocks and minerals, I will change....

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3. Nick finds out from Nicole how an underground mine works. When he gets back to the Tunlin Commune, he finds that he has mixed up his notes. Help him put them in the right order. Write the stages in the correct sequence on the following flow chart.

