

Worksheet

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 Stoping	
(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 Stoping	
(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:	

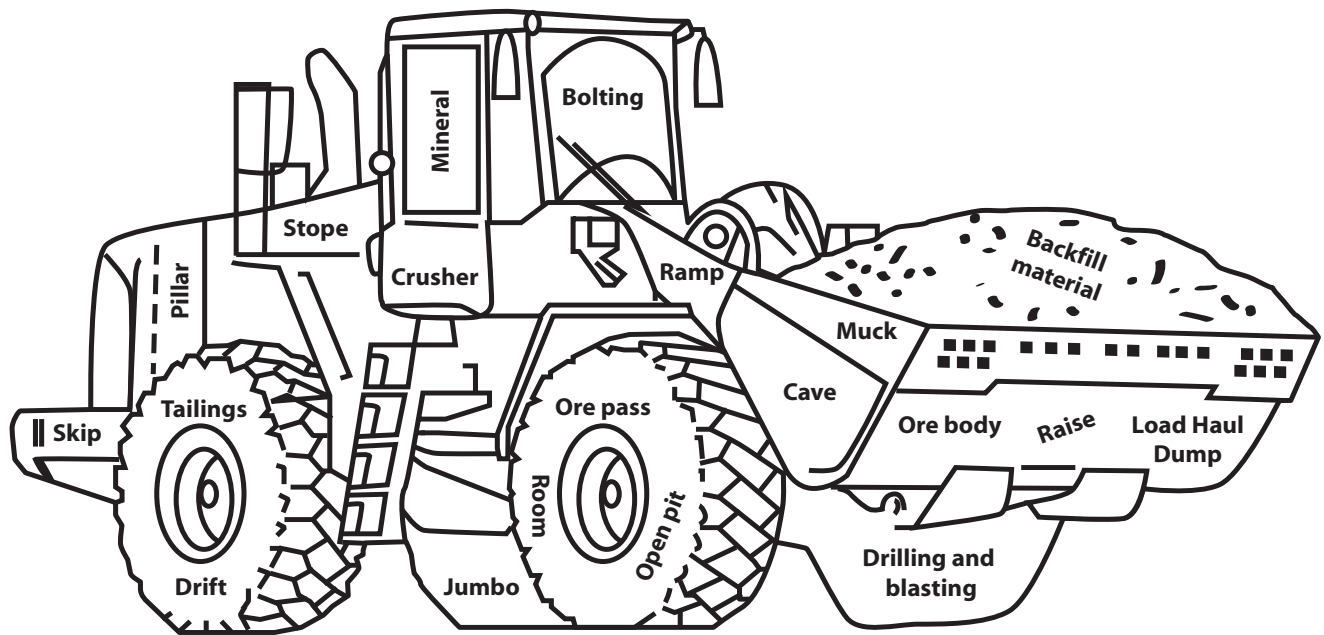
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2. Place a check mark in the box to identify the method you would like to focus on for this activity.

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 you selected. There are six steps presented on the 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.

Worksheet

Underground Mining Method: _____

Underground Mining Methods Key Terms

Key Terms	Explanations
Bolting	Drilling a hole, and inserting a bolt to strengthen the ceiling and walls of an underground mine.
Crusher	A machine used to crush ore before it is transported.
Drift	A horizontal underground tunnel that follows a vein or ore body.
Drilling and blasting	The process of using a drill to create long, narrow cylindrical holes in the rock, and filling these holes with explosives which are then detonated to fragment the rock.
Jumbo	A drill which is capable of drilling more than one hole at a time and is especially useful in preparation for blasting.
Load Haul Dump	A vehicle with a large bucket on the front used for transporting ore to crushing stations and mucking.
Mineral	Naturally occurring chemical compound with a unique three dimensional crystalline structures and chemical composition; component of rocks.
Muck	Waste rock that has been broken by blasting.
Ore body	A naturally occurring concentration of minerals that can be mined at a profit.
Ore pass	A vertical or inclined passage that is used for transporting ore down to a lower level or hoist.
Pillar	The columns of rock that are left to support the ceiling in room and pillar mining.
Raise	A vertical or inclined opening from one level of a mine that is driven toward the level above.
Ramp	Inclined tunnels used to transport ore or machinery.
Room	The open areas left open by blasting in room and pillar mining.
Skip	A self-dumping bucket used in a shaft for hoisting ore or rock.
Stope	An underground mine from which ore has been removed extracted.
Tailings	Materials rejected from a mill after the recoverable valuable minerals have been.

Glossary References: MineralsEd, *Social Studies 10/11: Mining in BC A Resource Unit*; The Northern Miner, *Mining Explained: A Layman's Guide* (1996)