

The Mining Process

Taken from the Mineral Resources Education Program of BC's *K-3 Integrated Resource Unit: Kids and Rocks*



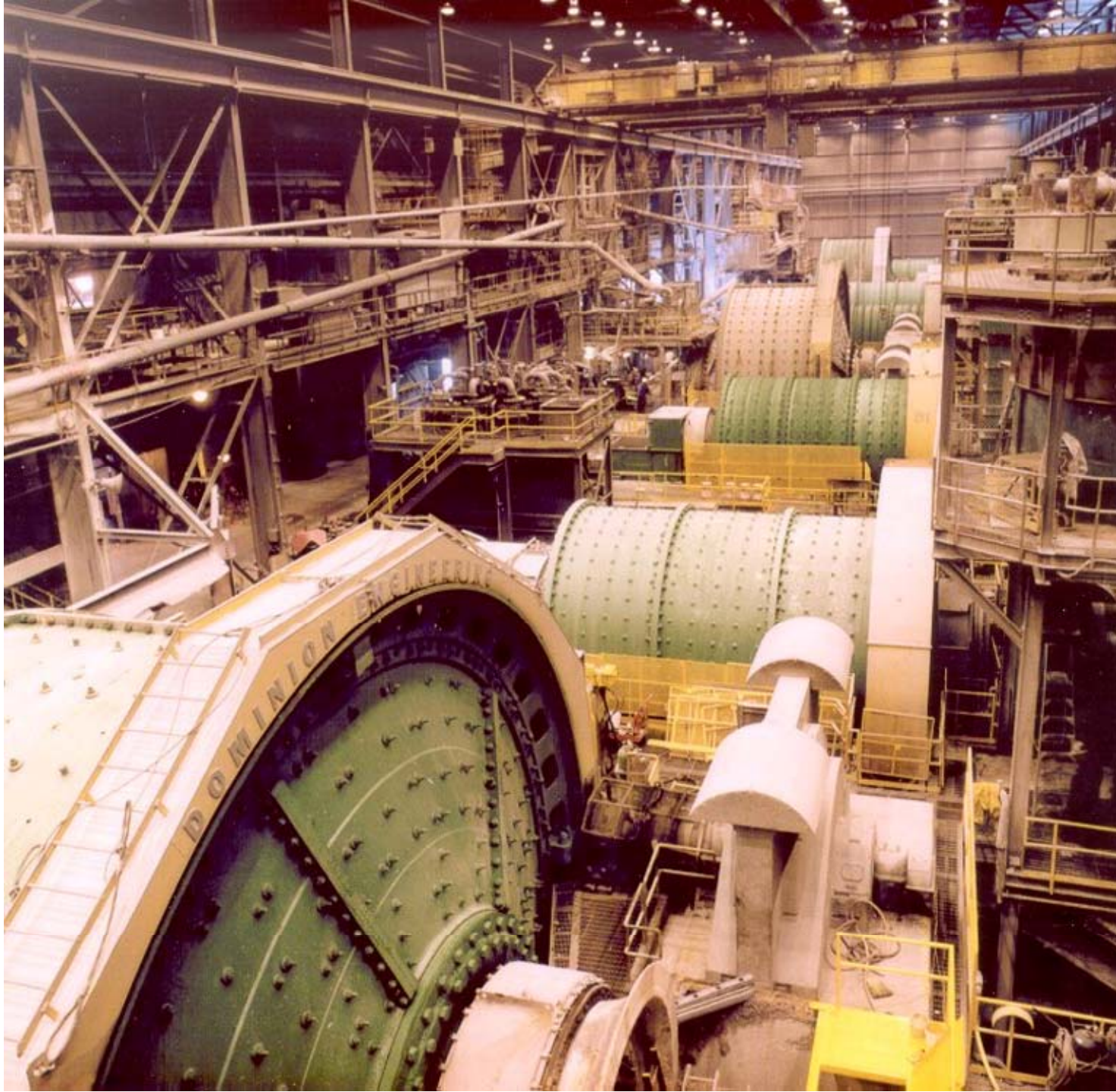






















Mining Process Captions Sheet

- 1. Open Pit Mine:** This is a picture of an open pit mine. Mining is done using this method when the minerals are close to the surface, and the land surface is easily adaptable to an open pit.
- 2. Extraction:** The first step in taking the minerals out of the ground is by blasting (explosion) that will break the rock containing the minerals free. This rock containing minerals is called ore.
- 3. Extraction:** The second step in extraction is hauling the broken rock by shovels and trucks to the conveyor which takes the rock to the part of the mine where it is processed.
- 4. Processing:** The haul truck dumps the load of rock into the primary crusher. The ore is then transferred onto a conveyor belt which takes the ore into the building called the mill.
- 5. Processing:** The primary crusher breaks large pieces of ore into smaller sizes so they can fit on the conveyor belt.
- 6. Processing:** Inside the mill, the conveyor belt brings the ore to be processed further. The ore on the belt is monitored by a computer system to check that it is the correct size.

7. **Processing:** The conveyor belt takes the finely broken ore pieces into large ball mills.
8. **Processing:** Once the ball mill has broken the ore into fine powder, the mineral is taken out of the ore powder by a process called froth flotation. In flotation, the minerals are separated from ore by using chemicals. The minerals collect on the bubbles and form a thick mixture called slurry. The moisture is then taken out of the thick mixture by a suction method and this leaves a powder called concentrate.
9. **Smelting, Refining and Marketing:** The concentrate is transported by trucks, trains and boats to be shipped around the world where it will be processed further into many products that are used in our everyday lives.
10. **Smelting, Refining and Marketing:** The concentrate is transported by trucks, trains and boats to be shipped around the world where it will be processed further into many products that are used in our everyday lives.
11. **The Finished Product:** Many things that we use in our daily lives come from minerals in the ground.
12. **Reclamation:** After minerals have been extracted, the process of reclamation is started. This picture shows the replanting of vegetation on land that has been filled in. Every mine must carry out the process of reclamation to return the ground to its previous state or better that it was before the mine existed.