Finding and Mining Ores

Ore Deposits
- **Ores** are rocks that contain valuable minerals with useful elements.
- **Placers** are minerals found in stream deposits.
- It’s expensive and damaging to the environment to extract and refine minerals. Therefore, we need to use minerals wisely.
  
  [Link](https://www.youtube.com/watch?v=D6Mxak7qC)

Finding and Mining Minerals
- An **ore deposit** is a concentrated area of ores, and one that is profitable to mine.
- Geologists test properties of soil and rocks to locate ore deposits.

Recycling Aluminum

Surface Mining
- **In surface mining**, the earth is blasted open, and rocks are taken to a refinery. This method includes open-pit mining, mountaintop removal, strip mining, placer mining, and dredging.

Picture shows mountain top removal
Underground Mining

- In underground mining, miners dig tunnels deep into the earth to get to the rocks. This method is more expensive and dangerous.
- Remember our movie last quarter, October Sky?
- Accidents still occur today with underground mines

Ore Extraction

- After being sent to a refinery, rocks are crushed, so minerals can be separated out of the ore. Some methods include:
  - Heap leaching: the addition of chemicals, such as cyanide or acid, to remove ore.
  - Flotation: the addition of a compound that attaches to the valuable mineral and floats.
  - Smelting: roasting rock, causing it to segregate into layers so the mineral can be extracted.

Environmental Impacts

- Read the article “Effects of Mining on the Environment”
- Answer the questions at the end of the article in your notebook as part of your notes for today.

Today’s Main Idea

- Mining provides people with many resources they need, but mining can be hazardous to people and the environment.

Explore Question

2. Explore today’s main idea with this question:
   What are some of the ways in which mining activities affect the land surface?

Vocabulary

- Igneous Rocks
- Sediments
- Lava