

Chapter Three: Minerals

Lesson 3: Sources and Uses of Minerals

The environment in which a mineral forms determines the mineral's properties

Evaporating Saltwater:

- Salt water body dries up...minerals are left behind
 - As salt water evaporates, these minerals crystallize
 - Ex. Gypsum and Halite

Hot-water Solutions:

- Ground water is heated by magma
- Reacts with minerals to form a hot liquid solution
- Dissolved metals and other elements crystallize out of the hot fluid to form new minerals
- Ex. Gold, copper, sulfur, pyrite, and Galena

Ore: a mineral deposit large enough and pure enough to be mined for a profit

Two Methods of mining:

1. Surface mining:

- a. The removal of minerals or other materials at or near the Earth's surface
 - i. Ex. Copper ores

2. Deep Mining:

- a. The removal of minerals or other materials from deep within the Earth
 - i. Ex. Diamonds and coal

Gems (aka Gemstone):

- Mineral crystals that are attractive and rare
- Must be hard enough to be cut or polished

Two ways to responsible mining:

1. Reclamation: the process of returning the land to its original state after mining is completed...expensive and a time-consuming process
2. Reduce our need for minerals...recycle many mineral products, such as aluminum and iron
 - a. Nonrenewable resources: a natural resource that cannot be replaced or that can be replaced only over thousands or millions of years
 - b. The more we recycle, the more we will have in the future