**Ore Bodies and Mineral Deposits**

Importance of Ore

**Ore**: A mineral or mineral-containing rock with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ores are typically extracted for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contained in

them, which is valuable because the crust is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(mostly \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).

The most common ores are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Magmatic Ore:**

Mining companies need to know where to dig for ore, which is easier if they know how ore bodies form.

As a magma chamber cools, dense minerals that crystalize early on

will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

This is called “magmatic ore”.

Since these minerals are dense they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

and thus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Hydrothermal Ore Deposits**

Minerals can form from the movement of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which often happens when there’s a magma chamber close by.

The hot water carries \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

As the hot water seeps through cracks, it cools and minerals “precipitate” out, filling the cracks.

Cracks that have been filled with minerals are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Note: When veins reach the surface, the minerals can be chemically

weathered (kind of like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) to form new minerals. For example, if you see malachite/azurite on the surface, it probably means there are veins of chalcopyrite (contains copper) below.

**Black Smokers**

Black smokers are a special type of hydrothermal deposit.

They occur on the ocean floor at spreading ridges.

Ocean water seeps into fractures in the ridge, gets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ surrounding minerals.

When the water rises back up, it hits the cold ocean water and

\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Minerals \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ out (usually \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_), forming “chimneys” of black crystals that are a few metres high