

Gold

1. Summarize the significance of gold through history.
2. Describe the physical properties of gold and explain how “gold” can have different colors.
3. Determine the percentage of gold in a material based on its purity (karat).
4. Explain how lode gold deposits form.

Gold II

1. Explain how placer gold deposits form.
2. List examples of US gold rushes and describe the consequences of the California gold rush.

Silver

1. Summarize the significance of silver through history.
2. Describe the physical properties of silver and its uses.
3. Explain how silver veins and Volcanogenic Massive Sulfide (VMS) deposits are formed.
4. Compare and contrast silver and gold.

Copper

1. Summarize the significance of copper through history.
2. Describe the physical properties of copper and its uses.
3. Explain how porphyry deposits are formed.
4. Compare the pros and cons of developing a large-scale mining project.

Platinum

1. Summarize the significance of Platinum Group Elements (PGEs) through history.
2. Describe the physical properties of PGEs and their uses.
3. Distinguish between platinum group elements, platinum group metals, and platinum group minerals.
4. Explain how layered mafic intrusions (LMIs) are formed.
5. Explain why sulfur plays such an important role in the formation of LMI PGE deposits.

Diamond

1. Explain how each of the 4 Cs (color, clarity, cut, and carat) are used to value diamonds.

2. Describe the significance of diamonds in pop culture.
3. Provide examples of how diamonds have been marketed to the public.
4. Describe in general how the Pink Panthers carried out jewelry heists

Diamond II

1. Summarize the historical sources of diamonds prior to 1867, and the significance of the discovery of diamonds in South Africa in 1867.
2. Identify the causes of different colors of diamonds.
3. Explain what the Kimberley Process is and why it is effective in some countries and not in others

Diamond III

1. Describe the geological conditions necessary for diamond formation.
2. Describe how diamonds are brought from the mantle to the surface via kimberlite volcanoes.
3. Apply your knowledge to value diamonds and determine the most likely location to find diamonds.

Misc

- Magmatic
- Hydrothermal
- Surficial
- Sedimentary