Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ P#\_\_\_

Chapter 4 Minerals 4.1 What is a mineral?

I. Minerals have played several roles in shaping civilization. What do the Great Pyramids in Egypt have to do with minerals?

How are minerals linked to the Parthenon in Greece?

How did minerals affect the western expansion across the United States?

II. Mineral Characteristics

1. Define a mineral:
2. The first 2 rules of being a mineral are that they are naturally occurring and inorganic. What does “naturally occurring” and “inorganic” mean?
3. The 3rd and 4th rules of being a mineral are that they are solids with specific compositions. Explain this and provide examples.
4. Finally, the last rule is that minerals must show definite crystalline structure. Define a crystal. Name six crystal systems and give examples of minerals that have those crystal shapes.



III. Minerals from Magma

1. What is magma?
2. What determines what minerals will form in the magma?
3. What determines the size of the mineral crystals? Explain!

IV. Minerals from Solution

We saw that minerals can form when magma cools. Minerals can also be formed when they precipitate out of a supersaturated solution or form when the liquid in a supersaturated solution evaporates.

1. What is meant by a “saturated solution”?
2. What does “precipitate out” of solution mean?

V. Mineral Groups – There are about 30 common or rock-forming minerals out of the 3000+ minerals found in the Earth’s crust.

1. What are the 8 most common ELEMENTS found in the Earth’s crust? List them by name, symbol and corresponding percent by mass.

1. Silicates
2. What are silicates?
3. Name two common silicate minerals
4. Carbonates
5. What are carbonates?
6. List several examples of carbonate minerals
7. List several examples of rocks that are mostly composed of carbonate minerals.
8. Name two carbonate minerals that are colored (indicate their color too).
9. Oxides
10. What are oxides?
11. Name three oxide minerals
12. Sulfides
13. What are sulfides?
14. Give an example of a sulfide mineral
15. Sulfates
16. What are sulfates?
17. Give an example of a sulfate mineral.
18. Halides
19. What are halides?
20. Give an example of a halide mineral.
21. Native elements
22. What are native elements?
23. Give an example of a native element mineral.