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**Station #6: Geological Dig**

**Unit Essential Question:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Focus Question:** How do scientists use the fossil record and rock strata to establish a geologic timeline?

**Task:** You will “dig” through sediment to locate and identify various rocks, mineral, and fossils. Minerals, rocks, and various fossils can be found throughout the world in the Earth's crust but usually in such small amounts that they not worth extracting. Only with the help of certain geological processes are these items brought to the Earth’s surface; some are easier to locate than others.

**Part I Directions:** Use a dictionary or a textbook to answer the following questions.

1. What is a rock? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2. What is a mineral? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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3. What is a fossil? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Part II Directions:** Follow step-by-step directions as they are listed below.

A. Find the laminated *Identification Chart* in the tub; read through the items you will be searching for.

B. Use the descriptions below to locate and identify the minerals, rocks, and fossils listed on the chart. The numbered description below corresponds with the numbers on the chart. When you believe you have found the item described, place it on the chart. Next to the descriptions below, determine if each item is a rock, a mineral, or a fossil; write your choice on the line. Check each item off as you locate it; let the teacher know when you think you are done.

\_\_\_\_\_1. Tuerqenite: Polished gem, hard, blue color like turquoise: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_2. Amethyst: Purple polished gem: \_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_3. Sulfur: Yellow color; egg-like poo-poo smell: \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_4. Shark’s Tooth: Small pointy tooth; smooth to rough edges: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_5. Obsidian: Black, glass-like, igneous: \_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_6. Crinoid Stem: Looks like a ribbed cylinder: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_7. Agate: Multicolored, sometimes banded, polished: \_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_8. Hematite: Reddish color, comes off on your hands: \_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_9. Feldspar: Pink, shiny cleavages: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_10. Pyrite: Gold, brassy look; referred to as “Fool’s Gold”: \_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_11. Scoria: Red or black, full of hole, igneous: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_12. Gastropod: Snail-looking appearance: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_13. Red Sandstone: Red; sedimentary; sand grains appear cemented together: \_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_14. Coal: Jet black, soft and brittle: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_15. Dinosaur Remains: Looks like a piece of dried meat: \_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_16. Quartz: Very hard; white to pink in color: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_17. Cephalopod: Has a coiled shell: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_18. Brachiopod: Has a small ribbed shell: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_19. Conglomerate: Pebbles cemented together; sedimentary: \_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_20. Gneiss: Black and white speckled; metamorphic: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_21. Rock Crystal: Polished, clear quartz: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_22. Pumice: Very light; floats on water; igneous: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_23. Stem Coral: Appears “holey”’ looks like a plant stem: \_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_24. Horn Coral: Looks like a slender “holey’ finger: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_25. Shale: Grayish-black; fine-grained; clay-like, metamorphic: \_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_26. Calcite: White, rhombic; cleavage-breaks: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_27. Gypsum: White; soft-looking, used to make plaster of paris: \_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_28. Fluorite: Green, shiny; large in size: \_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_29. Mica Schist: Glittering ‘flakes” cemented together; metamorphic: \_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_30. Branch Coral: Appears “holey”’ looks like a branch: \_\_\_\_\_\_\_\_\_\_\_\_\_

Call the teacher over to check your placement of each rock, mineral, and fossil:

\_\_\_\_\_ Attempt #1 \_\_\_\_\_ Attempt #2

**\_\_\_\_\_ teacher check-in; put the rocks, minerals, and fossils back in the pan of sediment and return it.**

**Part III Directions:** Use knowledge gained from this activity, a textbook or the Internet to answer the follow-up questions below. Answer using complete sentences with a restate.

1. What was the easiest part of this activity? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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2. What was the most challenging part of this activity? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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3. What strategies did you use to determine if an item was a rock, a mineral, or a fossil? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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4. Why were some items easier to identify than others? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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5. Why are some minerals valuable? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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6. Look up *mold* and *cast*. What are mold and cast fossils made out of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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