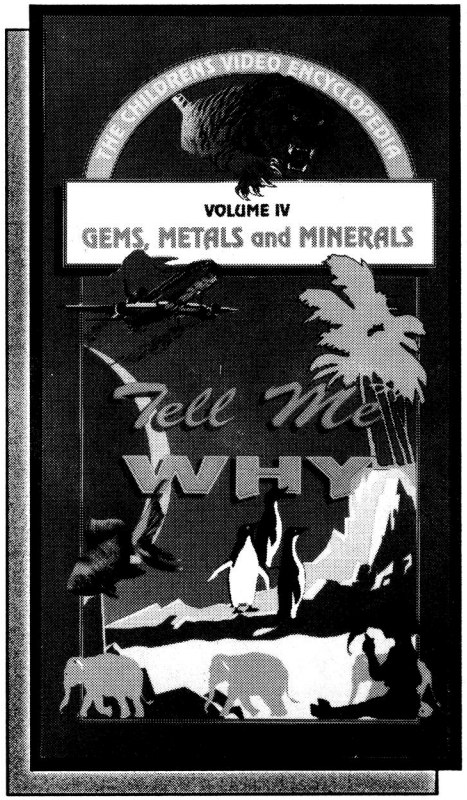
GLOSSARY

1. ALLOY-metal or metals with admixtures.
2. ALUMINUM-lightweight metal.
3. ASBESTOS-fibrous mineral used in fireproofing.
4. ASPHALT-black tarlike material.
5. ATOMIC WEIGHT-a number representing the weight of one atom of an element as compared with an arbitrarily selected number representing the weight of one atom of another element taken as the standard (usually oxygen at 16).
6. BIRTHSTONE-a precious or semiprecious gem symbolizing the month of one's birth.
7. CHALK-soft white limestone.
8. CHROMIUM-corrosion-resistant metallic element.
9. COAL-combustible mineral.
10. CONDUCTOR-thing that transmits electricity, heat, etc.
11. COPPER-reddish metallic element.
12. DIAMOND-hard, transparent crystallization of carbon.
13. ELEMENT-major or basic component.
14. EMERALD-vivid green gem.
15. EROSION-wearing away of the earth.
16. FACET-Reflecting plane surface of a gem.
17. FOOL'S GOLD-iron pyrites or copper pyrites, like gold in color.
18. FOSSIL-hardened or petrified plant or animal.
19. GEM-jewel.
20. GOLD-soft, yellow, precious metallic element.
21. GRANITE-grainy igneous rock.
22. GYPSUM-sulfate of calcium, used to make plaster of paris.
23. HUMUS-soil with decayed leaf matter.
24. ICICLE-conical hanging mass of frozen water.
25. IGNEOUS ROCK-rock formed by volcanic action or great heat.
26. IRON-metallic element attracting magnets.
27. JADE-ornamental stone, usually green.
28. LAVA-molten volcanic rock.
29. LIGNITE-soft brown coal.
30. MAGMA-liquid underground rock.
31. MAGNESIUM-light metallic element.
32. MALLEABLE-readily shaped by hammering.
33. MARBLE-hard, fine-grained limestone.
34. MERCURY-heavy metallic chemical element.
35. METALLIC-of, or having the nature of, metal; iron, gold, brass, etc.
36. METAMORPHIC ROCK-rock that has changed in form by heat or pressure.
37. MICA-crystallized transparent laminated mineral.
38. MINERAL-something neither vegetable nor animal; inorganic earth material.
39. MINING-the act, process, or work of removing ores, coal, etc. from a mine.
40. MOUNTAIN-a natural raised part of the earth's surface, usually more or less abruptly, and larger than a hill.
41. NICKEL-white metallic element.
42. OPEN PIT MINING-mining of ore on surface.
43. ORGANIC-pertaining to or suggesting organ isms.
44. OXIDATION-uniting with oxygen.
45. PEARL-hard, lustrous gem formed within the shell of an oyster.
46. PEAT-highly organic soil dried for use as fuel.
47. PERIODIC TABLE-an arrangement of the chemical elements according to their atomic numbers.
48. PETROLEUM-natural oily liquid found underground.
49. PLACER MINING-mining through strainers near water sources.
50. PLATINUM-valuable, silver-white metallic element.
51. PLIABLE-flexible or easily bent.
52. PRECIOUS-valuable.
53. PRECIOUS METAL-metal of limited availability.
54. QUARRY-a place from which stone is extracted.
55. QUARTZ-common shiny crystalline mineral.
56. QUICKSAND-watery,soft mass of sand that yields under weight.
57. QUICKSILVER-mercury.
58. RESERVOIR-storage place for water.
59. ROCK-piece of stone.
60. ROUGH DIAMOND-a diamond that has not been cut.
61. RUST-coating of oxidized iron or steel.
62. SAND-fine pieces of rock.
63. SEDIMENTARY ROCK-rock formed by the deposit of sediments.
64. SHALE-layered rock of hardened clay.
65. SILVER-white noble metallic element.
66. SOIL-earth.
67. STALACTITE-icicle-like deposit of lime on a cave roof.
68. STEEL-iron alloyed with carbon.
69. STRIP MINING-mining small areas a layer at a time.
70. TALC-soft mineral.
71. UNDERGROUND MINING-mining deep in the earth.
72. URANIUM-radioactive metallic element used as a source for atomic energy.
73. VOLCANO-mountain that ejects molten lava, rock, and steam.

Tell Me WHY

TEACHER'S GUIDE



VOLUME IV
GEMS, METALS, & MINERALS

SUGGESTED TEACHING STRATEGIES

1. Obtain rock and mineral samples so as to visually differentiate between the two.
2. Assign students a small research project, that is, to determine the role of diatoms, radiolarians, and foraminiferans in rock and mineral production or use.
3. On a world map point out such sites as: major oil fields, La Brea tar pits, emerald mining areas, diamond mining areas, lapis and turquoise deposits, major gold and silver "rush" areas in North America.
4. Bring in jewelry or sculpture made from rocks and minerals, i.e. oriental soapstone carvings, jade.
5. Obtain plaster-of-paris for an "ARTSY" activity for students.
6. Discuss the "MOH'S" hardness scale.
7. Provide a cross-section diagram of a volcano to label.
8. Provide a periodic table for discussion of elements.

CONCEPTS AND TERMS TO LISTEN AND WATCH FOR

ROCK	CHALK
MINERAL	GEMSTONE
ASPHALT	FACET
SILICA	REFRACT
INSULATOR	MICA
PLASTER	BERYL
SOAPSTONE	TOPAZ
PLACER DEPOSIT	GARNET
IRRITANT	QUARTZ
PIT MINE	LAPIS LAZULI
STRIP MINE	TURQUOISE
STALACTITE	JADE
STALAGMITE	PEARL

QUESTIONS FOR THOUGHT, DISCUSSION AND FURTHER STUDY

1. Explain this statement: A rock can be made of minerals, but a mineral cannot be made of rocks.
2. Why is asbestos no longer widely used for insulation?
3. Where is asphalt found naturally?
4. What is the softest mineral? What is the hardest mineral?
5. Describe at least 3 different types of mining.
6. What are foraminiferans? How can you see them?
7. Differentiate among sedimentary, metamorphic, and igneous rocks.
8. What gemstone is actually beryl? List at least three gemstones that are actually quartz.
9. What are the three different types of coal that arise from peat and may mysteriously become diamond?
10. What gives jade its various colors?
11. Describe how and why a pearl is formed.
12. What equipment might you need to mine a placer gold deposit?
13. Describe how soil is made from rocks and living matter.
14. How did marble and shale originate?
15. What remains or traces of past life might be termed-fossils?
16. Diagram very simply: folded mountain, dome mountain, block mountain, volcanic mountain.
17. On a cross-section of a volcano, differentiate between magma and lava.
18. Read about one of these famous volcanic eruptions: Krakatoa or Mount Vesuvius' destruction of Pompei.
19. Refer to the periodic table. Determine the atomic number, atomic weight and atomic symbol for iron, copper, nickel, gold, and silver.
20. How do native and ore deposits of a metal differ?
21. What is quicksilver, and what causes silver tarnish?
22. What is a metal that will burn? What is an unusual attribute of mercury?

CAREER OPPORTUNITIES

JEWELER	GEMOLOGIST
MINER	HOBBYIST
MINERALOGIST	GEOLOGIST
SCULPTOR	OIL GEOLOGIST
JEWELRY DESIGNER	