

WEBELOS GEOLOGIST ACTIVITY

What metals are made from these materials?

HEMATITE produces \_\_\_\_\_  
AZURITE produces \_\_\_\_\_  
SPHALERITE produces \_\_\_\_\_

What minerals are used to produce these products?

Glass: \_\_\_\_\_  
Jewelry: \_\_\_\_\_  
Fertilizer: \_\_\_\_\_

What minerals are used to make Road Construction Products?

\_\_\_\_\_

\_\_\_\_\_  
(Approved by)

\*Collect five geologic specimens that have important uses to man.

\_\_\_\_\_  
(Approved by)

**MOH'S HARDNESS SCALE** - The hardness of a mineral is the mineral's resistance to scratching. Hardness can be indicated on a scale from 1 to 10 with 1 representing the least hard and 10 the hardest.

\*Put in order of hardness:

- 1. \_\_\_\_\_ gypsum
- 2. \_\_\_\_\_ fluorite
- 3. \_\_\_\_\_ talc
- 4. \_\_\_\_\_ quartz
- 5. \_\_\_\_\_ orthoclase
- 6. \_\_\_\_\_ apatite
- 7. \_\_\_\_\_ topaz
- 8. \_\_\_\_\_ diamond
- 9. \_\_\_\_\_ calcite
- 10. \_\_\_\_\_ corundum

\_\_\_\_\_  
(Approved by)

A mineral with a higher number can scratch anything beneath it or equal to it in hardness.  
**IF A MINERAL WILL SCRATCH ALL THE MINERALS IN THE SCALE UP TO 4 AND IS SCRATCHED BY APATITE, ITS HARDNESS IS IN BETWEEN \_\_\_\_\_ AND \_\_\_\_\_.**

Mineral hardness can be estimated by using common objects with a known hardness as follows:

Fingernail	2.5
Penny	3.0
Window glass	5.5
Knife blade	5.5
Steel file	6.5

The mineral shown on Moh's hardness scale that can be scratched with a steel file, but not with a knife blade is \_\_\_\_\_ and has a hardness of \_\_\_\_\_.

\*Make a list of some of the geologic materials used in the construction of your home:

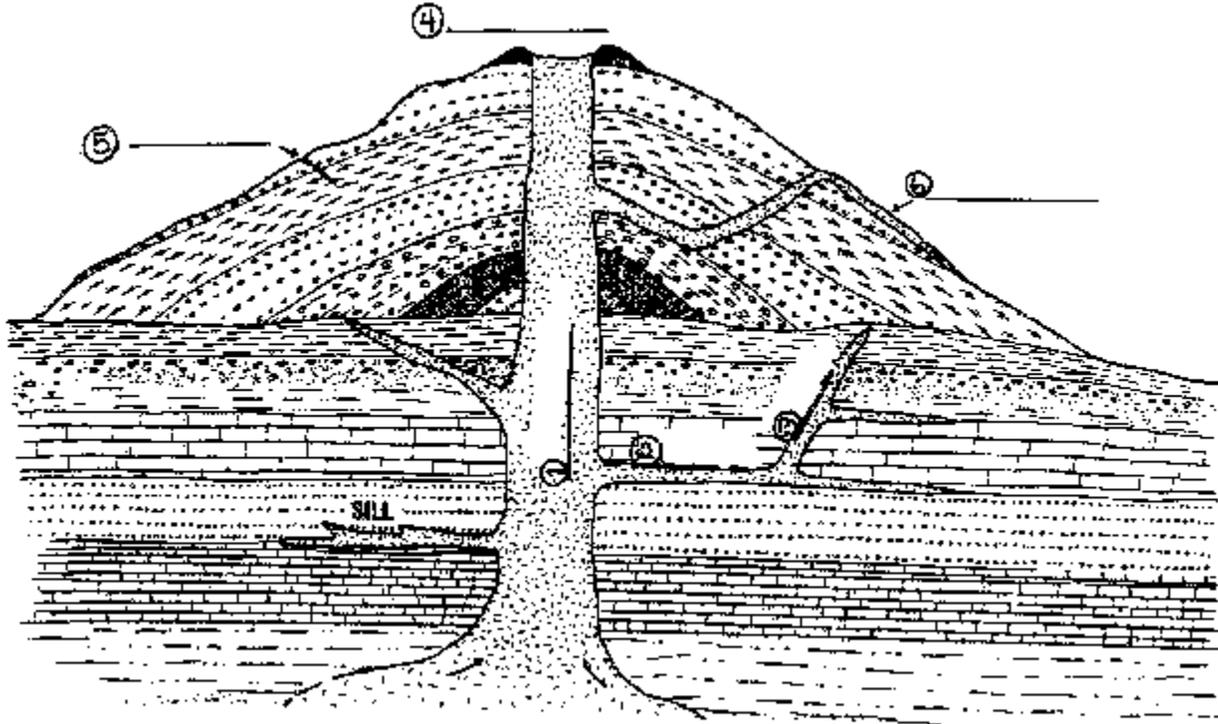
\_\_\_\_\_  
(Approved by)

\*Give at least one use for each of the following rocks and/or minerals.

<u>ROCK OR MINERAL</u>	<u>USED FOR</u>
Barite	_____
Gypsum	_____
Mica (Muscovite or Biotite)	_____
Magnetite	_____
Galena	_____
Marble	_____
Hematite	_____
Quartz	_____
Sphalerite	_____

\_\_\_\_\_  
(Approved by)

\*On the picture of the volcano, label the six parts:



Cross section of a volcano. The throat of a volcano usually follows a fissure in the rocks. The magma enlarges the opening and forces its way along cracks and joints to form dikes and sills, and reaches the surface as lava flows.

\_\_\_\_\_  
(Approved by)

\*Give a brief explanation of how a volcano forms:

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\_\_\_\_\_  
(Approved by)

\*Other types of mountains are fault block mountains, dome mountains, and folded mountains. Explain how one of these was formed.

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\_\_\_\_\_  
(Approved by)

Webelo Scout \_\_\_\_\_ has completed all requirements of the

Geologist Activity on \_\_\_\_\_.

(Date)

Completion verified by: \_\_\_\_\_

**Questions for Webelos based on MUM Geology Club tables; Miami University-Middletown**

- 1) List three types of jobs you could have as a geologist. \_\_\_\_\_
- 2) When trying to identify a mineral is color a good property to use?  
Why or why not? \_\_\_\_\_
- 3) How do we identify igneous rocks? \_\_\_\_\_
- 4) If magma cools below the surface of the Earth what type of rock forms? \_\_\_\_\_
- 5) How do we identify sedimentary rocks? \_\_\_\_\_
- 6) Name the two most common sedimentary rocks found in the Tri-state area. \_\_\_\_\_
- 7) Does a foliated metamorphic rock have "layers? If so how do they form? \_\_\_\_\_
- 8) When rocks weather what do they form? \_\_\_\_\_
- 9) List the following from largest to smallest grain size: Silt, clay, and sand. \_\_\_\_\_
- 10) How can you determine the amount of sand, silt and clay in the soil in your backyard?  
\_\_\_\_\_

**Questions for Webelos Scouts about Fossils**

**Compiled by David L. Meyer, Professor of Geology, University of Cincinnati**

- 1 – What is a fossil? How do fossils form? Explain each of these kinds of fossils: body fossil, trace fossil, internal mold, external mold, cast. \_\_\_\_\_
- 2 – Why are fossils useful and significant? What is paleontology? \_\_\_\_\_
- 3 – Why is the Cincinnati area (Tristate) famous all over the world for its fossils and sedimentary rocks? How old are these fossils? Name some of the common fossils found in the area. \_\_\_\_\_
- 4 – What is the Cincinnati Arch? How did it form? Why is it important for understanding the geology of the region? \_\_\_\_\_
- 5 – Where can we go to find fossils in this area? \_\_\_\_\_