



OFFICIAL MID-HUDSON VALLEY GEM & MINERAL SOCIETY (MHVG&MS)

2016 EARTH SCIENCE SCAVENGER HUNT QUESTIONNAIRE

SHOW THEME – **The World of Agates & Jaspers**

**Please sign in at the Earth Science Table before you start answering the questionnaire**

Name \_\_\_\_\_ School District \_\_\_\_\_

Teacher \_\_\_\_\_ Grade \_\_\_\_\_

*Instructions:* This scavenger hunt is designed so that you can find the answers easily. Each exhibit cube has the mineral's properties listed above it. Question numbers correspond to the number on each mineral exhibit cube. If you are unable to find a specific mineral cube, check the locator map at the Earth Science table.

The goal is to find the answers to earn extra school credit and to enjoy the Gem & Mineral Show. 20 questions are to be completed for extra credit. In addition, if you fully complete the questionnaire, you will be given a raffle ticket for a student-only prize!

**Part 1 – Show Theme**

Go to the **Special Exhibits** on the Show Theme, “**AGATES & JASPERS**”

Agates and Jaspers are formed differently. Agates form in a roundish void or open seam in the rock.

Jaspers are formed when sedimentary rock is colored by oxides and minerals. The binder is quartz in the form of microscopic silica fibers, which is called chalcedony. Without color, chalcedony is translucent blue-gray with a waxy luster and is hard enough (Mohs 7) to take a high polish, glass-like – vitreous.

1. Find a specimen that is roundish and layered - this specimen is: Please circle answer.

Agate                      Chalcedony                      Jasper                      Carnelian

2. Find a specimen in the display that has very fine banding. Please circle answer.

Quartz Crystals in Center    Botswana agate    Opaque Jasper    Fairburn Agate

3. What are some of the visual properties of Agate? Circle all that apply.

Translucent    Fortification Pattern    Mossy    Thin Bands    Sagenite    Tubes

4. What are some of the visual properties of Jasper? Circle all that apply.

Asymmetrical Patterns    Opaque    Brecciated    Fine Particle Content    Oxide Coloration

5. Go to the Lapidary Demonstration Area- What tools are used to work with Agate & Jasper? Circle all that apply.

Pliers    Trim Saw    Geologist Hammer    Tumbler    Grinding & Polishing Wheels    Ruler

## Part 2 – Cubed Minerals

Find the exhibit cubes (numbered) mentioned below. Read the properties and information about the mineral and answer the questions below that correspond to that cube number.

### Cube 1: Pyrite

Pyrite is known as Fool's Gold. The metallic mineral pyrite, when struck with steel, will spark and emit a sulfurous odor. This mineral is used in the manufacture of \_\_\_\_\_.

### Cube 2: Calcite

Calcite, whose chemical name is Calcium Carbonate, reacts with acid in what way?  
\_\_\_\_\_.

### Cube 3: Talc

The Mohs scale measures the hardness of a mineral to being scratched. The scale ranges from 1 to 10. What number is Talc on the Mohs Scale? \_\_\_\_\_.

### Cube 4: Apatite

What is the chemical name of Apatite? \_\_\_\_\_. (Saying that ten times fast will surely work up an "appetite"!) What fossil animal parts are frequently found in phosphate deposits? \_\_\_\_\_.

### Cube 5: Kyanite

Is Kyanite a sedimentary, metamorphic, or igneous mineral? \_\_\_\_\_.

### Cube 6: Gypsum

Gypsum, which can be colored \_\_\_\_\_, has a streak that is white. This is part of what defines and identifies this mineral.

### Cube 7: Hematite

Hematite crystals come in a variety of forms—including thick to thin tabular, roses, botryoidal (resembling a bunch of grapes), micaceous (resembling mica), and earthy—but its crystal system is  
\_\_\_\_\_.

### Cube 8: Gold

Gold, whose chemical name is Native Gold because it is an element on the periodic table (like Sulfur—Cube 10), rarely combines with other elements. It is used for \_\_\_\_\_.

### Cube 9: Orthoclase

Orthoclase, potassium feldspar, is one of the major rock forming minerals in granite. Under short wave UV light, the mineral can fluoresce the following colors: \_\_\_\_\_  
\_\_\_\_\_ (You can see fluorescent and phosphorescent minerals at the Fluorescent Booth.)

### Cube 10: Sulphur/Sulfur

During volcanic activity, bright yellow Sulfur precipitates directly from sulfur-rich gases. What type of acid can be made from sulfur? \_\_\_\_\_.

**Cube 11: Ulexite**

Ulexite is nicknamed \_\_\_\_\_ because its fibrous structure allows images and light to be transmitted through it.

**Cube 12: Halite**

Halite has a \_\_\_\_\_ taste. It is used for \_\_\_\_\_.

**Cube 13: Tourmaline**

Tourmaline and window glass fracture with the same pattern which is called \_\_\_\_\_.

**Cube 14: Sphalerite**

Sphalerite has an interesting property whereby it flashes orange when scratched or struck. What is this property called? \_\_\_\_\_.

**Cube 15: Beryl**

Specific gravity is a measurement of how heavy an object is relative to the weight of water. What is the specific gravity of Beryl? \_\_\_\_\_.

**Cube 16: Quartz**

The tip of Quartz crystals is terminated by hexagonal pyramids. The crystal structure is \_\_\_\_\_.

**Cube 17: Copper**

Copper's crystal system is isometric. Its crystals can be various shapes, including \_\_\_\_\_.

**Cube 18: Hornblende**

The cleavage angles of Hornblende are \_\_\_\_\_ and \_\_\_\_\_ degrees.

**Cube 19: Galena**

The chemical name of Galena is \_\_\_\_\_. Galena is the most important ore of Lead.

**Cube 20: Willemite**

Willemite, a zinc ore, is strongly fluorescent and phosphorescent. What color is created by using short-wave UV light? \_\_\_\_\_. (You can see fluorescent and phosphorescent minerals at the Fluorescent Booth.)

**Cube 21: Corundum**

Corundum's gem varieties are \_\_\_\_\_.

**Cube 22: Sodalite**

The chemical name of Sodalite is \_\_\_\_\_. Its crystal system is \_\_\_\_\_.

**Cube 23-A: Chalcopyrite**

Chalcopyrite has a \_\_\_\_\_ streak.

**Cube 23-B: Bornite**

Bornite, known as Peacock Ore, has a \_\_\_\_\_ luster.

**Cube 24: Siderite**

In acid (HCl), Siderite \_\_\_\_\_.

**Cube 25: Malachite**

Malachite is a semi-precious gemstone. Is the gemstone opaque or transparent? \_\_\_\_\_.

**Cube 26: Stibnite**

Stibnite crystals are striated lengthwise and slightly flexible. The crystal system is \_\_\_\_\_.

**Cube 27: Kaolinite**

Kaolinite has a luster that is \_\_\_\_\_.

**Cube 28: Cinnabar**

The chemical name of Cinnabar is \_\_\_\_\_.

**Cube 29-A: Cordierite**

Cordierite has a property known as dichroic, which means \_\_\_\_\_.

**Cube 29-B: Topaz**

The specific gravity of Topaz is \_\_\_\_\_.

**Cube 30: Barite**

Barite is the most common barium minerals. It is used for \_\_\_\_\_.

**Cube 31: Muscovite**

Muscovite is light-colored mica. Its chemical name is \_\_\_\_\_.

**Cube 32: Almandine Garnet**

Almandine Garnet is the New York State Gemstone. Its color is \_\_\_\_\_.

**Cube 33: Diopside**

Diopside has short prismatic crystals with good terminations. Its crystal system is \_\_\_\_\_.

**Cube 34: Fluorite**

Fluorite can be the following colors: \_\_\_\_\_.

**Cube 35-A: Diamond**

Diamond and Graphite (Cube 35-B) are both formed from pure carbon. Diamond is at the top of the Mohs hardness scale at \_\_\_\_\_.

**Cube 35-B: Graphite**

Graphite has a streak that is \_\_\_\_\_. It is mixed with clay and fired to be pencil "lead."

**Cube 36: Wollastonite**

The crystal system of Wollastonite is \_\_\_\_\_.

**Cube 37: Magnetite/Lodestone**

Magnetite crystals are usually octahedrons, sometimes dodecahedrons with striations, cubic (rare), and also massive. Its crystal system is \_\_\_\_\_.

**Part 3 – Additional Questions**

A) What is your favorite mineral at the show? Why? \_\_\_\_\_

\_\_\_\_\_

B) What is one fact about a mineral or rock you find very interesting? \_\_\_\_\_

\_\_\_\_\_

**CONGRATULATIONS!** YOU HAVE COMPLETED THE EARTH SCIENCE SCAVENGER HUNT. GO TO THE EARTH SCIENCE TABLE AND HAVE YOUR QUESTIONNAIRE STAMPED WITH THE MID-HUDSON VALLEY GEM & MINERAL STAMP.

**PLEASE FILL OUT A FORM FOR A CHANCE TO WIN A MINERAL SPECIMEN.  
PLEASE TAKE TIME TO ENJOY THE GEM & MINERAL SHOW!**

*Place MHVG&MS stamp here:*

