



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

2017 EARTH SCIENCE SCAVENGER HUNT QUESTIONNAIRE

2017 SHOW THEME – **“Garnet -variety: ALMANDINE
New York’s Gemstone”**

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, **“Garnet – New York’s Gemstone”**

The term GARNET refers to a family of gemstones related to each other by chemistry. Using this information correctly and scientifically one would say **Almandine** - is the gemstone for New York.

1. All garnet crystals belong to the _____ crystal system.

Circle one: Hexagonal Monoclinic Triclinic Isometric Triclinic

2. The surface luster of non weathered garnet is: _____

Circle one: Dull Vitreous Pearly Waxy Metallic

3. Some members of the Garnet Family include:

Circle one or more: Pyrope Grossular Almandine Uvarovite Andradite

4. Members of the Garnet Family have approximately this Mohs’ hardness:

Please circle one: 3 – 4 5.5 - 6 6.5 – 7.5 7.5 – 8.5

5. The hardness of Garnet makes it a very good for:

Circle one or more: abrasive paper stepping stones jewelry asphalt fill

6. To say a garnet is **“gemmy”** means it is:

Circle one or more: opaque has few flaws is transparent large good for faceting

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: FOSSIL – Trilobite

This ancient living animal developed what mineral lens for its eyes? _____.

Cube 28: Cinnabar

The chemical name of Cinnabar is _____.

Cube 29-A: FOSSIL - Clam

In what type rock was this fossil found? _____.

Cube 29-B: FOSSIL – Fossil Hash

What does the term fossil hash mean? _____.

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 _____.

Cube 38: FOSSIL: Horned Coral

When did Horn coral, of the order **Rugosa**, first appear in what geologic time?

Part 3 – Additional Questions

If you could find any of the garnets, which one would you choose? Why?

What is one fact about a mineral or fossil you found 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:

