Rockin' Scavenger Hunt
Virginia Tech Museum of Geosciences

This scavenger hunt is designed for you to discover some things about minerals and fossils and to find some of the treasures in the Museum!

Your mission: Working with your team, find the answers to as many of the following questions as possible, without copying answers from any other teams. You may begin at the top of any page. Your teacher will advise you on which page to start, and you should complete a page before moving on to another page.

Tip: Follow the directions given to each location. "Right," "left," "front" and "back" refer to those locations from the door of the museum where you came in.

Minerals

I. Take a look at some of our *"show" minerals* at these locations:
-- *Don Dalton* collection at center right wall
-- *MVT Deposit Minerals* at front left corner wall
-- case at museum center with "Emerald" label at front

1. Choose two favorites. Write down the name of each mineral, and describe what it looks like (for example: shiny, dull, blocky, rounded, flat, bumpy, how many sides, what color, etc.) See if you can describe each sample well enough that a classmate could find the exact thing you are looking at!

   a.

   b.

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2. Look at the *Minerals of Virginia* displays at the right wall toward the back.

   a. Name a mineral mined in Virginia and the location or quarry where it was found.

   b. What is the well-known pegmatite in Virginia, which was once used for furnace windows?

   c. Name one famous Virginia mineral and the locality in which it was found.

II. In the front half of the museum, find: (choose at least 4 questions of "a" through "h")

a. in the Gemstone exhibit on the front wall, one type of mineral that can be cut into a gem (look at the cut gem and the natural stone)

_____

b. a sample of gold (in the Gemstone exhibit) and a sample of fool's gold: pyrite (in upright case closest to the hallway and the flat case across from it). What differences do you observe between the gold and the pyrite?

c. at the Gemstone exhibit, find diamond. What is its chemical formula (the letter or letters right below the name on the label) _____ What element is this?

What is diamond used for?

d. in one of the wall cases on the front wall (C. A. Michael Collection), find graphite. What is its chemical formula (the letter or letters right below the name on the label)? _____ What element is this?

What is graphite used for?

Bonus: How are diamond and graphite so different if they have the same chemical composition?

e. in the Mineral Habits case (far side of OmniGlobe), find a mineral that shows twinning. What is the mineral and what type of twin?

_____

and a geode. What mineral? _____

f. in the table-top cases, in the case at the corner farthest from the hallway, find halite. What is its chemical formula? _____

What are these two chemicals? _____

What is its common name? (It is not written on the label. If you don't remember, ask somebody.)_____

What colors of halite are here?

g. one mineral collected in Australia (look at the labels! Australia has its own upright case)

_____

h. one mineral collected in Mexico (Mexico has its own upright case)

_____

Fossils

III. *Fossils of Virginia* display. Find it on the left-hand wall toward the back of the museum.

1. a. Look for the map of Virginia in the center of the display that shows the locations of rocks of different ages in the state. If you are from Virginia, find your home area on the map. What color do you see there?

   b. (For VA residents) Look at the nearby "geologic time" chart (the simple yellow/blue/green/red chart to the right of the VA map) and the geologic time strip at the bottom of the front of the glass. Using this and the colors on the map you have already observed, how old are the rocks in your area? (note that "m.y.a." stands for million years ago) What time period or periods are the rocks in your area from? (Give a range of millions of years.)

   c. Look for the fossils that are labeled with cards of the same color as your area (or pick an area) on the map. Name 2 fossils found in that area. Approximately how old are they (give a time range or time period)?

2. a. Where were the trilobite fossils found?

   b. What animals are they related to?

3. a. From what geologic era and time period is the jawbone from the ground sloth? (marked by a red arrow - look back at the "geologic time" chart)

   b. What famous Virginian is this species of ground sloth named after? Why?

4. Name at least one Virginia fossil from each time era (fossils you haven't listed for #1, #2,or #3 above). Name a fact about each.
   a. Paleozoic (western VA) --

   b. Mesozoic (central VA) --

   c. Cenozoic (eastern VA) –

5. Which set of fossils (a. b. or c. above) are most like animals that live today? Circle the letter.
   In what part of Virginia are these more modern-looking fossils found?

   Are these more modern-looking fossils older or younger than fossils in other parts of the state?

IV. Find the cases with more *fossils* (at the back left corner of the museum, around the corner from each other)

1. Look at the crinoid fossils (3 samples). What is a "nickname" given to crinoids?

2. Find the fossils of many small fish. Why do you think they were all buried together?

3. Look at the model of the giant beaver fossil. By observing the size of the skull compared to a modern beaver, how many times bigger than a modern beaver do you guess it was?

VI. Find the large slab of rock to the right of the front door with the *dinosaur tracks* in it.

1. a. How many tracks can you actually see?

   b. Do you think the tracks could have been made by the same kind of dinosaur as the one on exhibit here in the museum? Why or why not?

   c. *Bonus: Look at the map above the footprints which shows where these footprints were found. Why is this one of the few places in Virginia where dinosaur fossil remains can be found?*
   Hint: Look at the geologic map and the geologic time chart in the Fossils of Virginia display that you looked at in section IV, as well as the label on the Allosaurus that tells how long ago it lived.

2. Related memory question from class: Of the three main rock types which you have been studying, which rock type are fossils found in?

   Why?