

Glenbow Museum

WHERE THE WORLD MEETS THE WEST

FROM GEODES TO GEMS ONSITE PROGRAM

PRE-VISIT CLASSROOM ACTIVITIES

The following pre-visit activities will provide students with an introduction to mineralogy and to the Glenbow. We recommend that you conduct as many of these activities as possible before coming to the Glenbow.

A. LEARNING ABOUT GLENBOW

- **The Museum**

What is it? Begin by asking your students:

- What is a museum?
- Has anyone ever been to a museum?
- What did you see? Did you find it interesting?

Museums are public places which collect things. Museums are not the only collectors though. Many people collect many things including: postage stamps, bubble gum cards, pins and badges, art and a variety of other things. Can you name some of them?

Museums take good care of their collections, store them for the future and put them on exhibit for people to see. At Glenbow you can discover interesting things about people, science and nature, history and art. Guess how many things Glenbow has in its collections? We have over **1 million pieces!** Guess how many these are minerals? We have over **17,800** minerals! When you visit Glenbow or any other museum, you'll have fun looking at all the different things people collect.

- Do you collect something?
- Do you have a special place for your collection?
- Do you know of anyone else with a special collection?
- When you visit a museum should you touch things you see?

Most things in the museum would not last very long if everyone touched them. That is because our hands have natural chemicals on them even when they are clean. These chemicals are good for us but they can damage museum pieces. However, during your visit to Glenbow we will give you special things to touch without causing any harm.

- **GLENBOW - How did it get started?**

Glenbow's collections were started by Eric Harvie who lived in Calgary. Mr. Harvie collected books, art and things from all over the world but especially from where we live - right here in western Canada. In 1966, he gave his collections to the people of Alberta

and 10 years later everything was placed in its present home in downtown Calgary. By the way, the name Glenbow was the name of Mr. Harvie's ranch located in a **glen** (narrow valley) on the **Bow River**.

B. ORGANIZATION OF STUDENT GROUPS / NAME TAGS

- **Organization:** Students will be working in groups for most of the program. Divide your class into groups of **4 to 5** students. For a class size of up to 24 students, the **maximum** number of groups is **4**. For a class size of up to 30 students, the **maximum** number of groups is **5**.
- **Name Tags:** Provide your students with name tags. Choose different colours or different shapes to divide your class into groups.

Assign each group a name. Group names could include: *Jolly Geodes, Classy Crystals, Fantastic Fossils, or any other suitable names*. On each name tag make sure that the student's name is in **large print**.
- **Supervisors:** Please assign an adult supervisor to each group.

C. KEY WORDS / BACKGROUND INFORMATION

- Prior to your visit, please familiarize your students with a simplified version of the following words, as they relate to rocks/minerals. *The students should be able to read the words that are **italicized**.*
1. **Minerals:** simply put, they are the building blocks of the universe and are all around us - from the ice crystals on the windows to the salt you sprinkle on the sidewalk. Minerals are also the ingredients that make up a rock. (You could compare a rock to a cookie: the rock is like a cookie, and the minerals are like the ingredients (flour, chocolate chips, etc...) that are needed to form it.)

In more complicated terms, minerals are inorganic (non-living or not formed from the remains of plants, animals or other living things) solids that are found in nature. They are made of elements or chemicals such as silicon, oxygen, carbon, and iron. There are approximately 4000 identified minerals but only 150 - 200 are widespread. Minerals can form crystals under the right conditions. Examples of minerals include quartz, graphite, diamond, gold, sulphur, copper, and garnet.
 2. **Rocks:** are solids made out of one or more minerals that make up much of the earth. Rocks are made of minerals like walls are made of bricks. (Sometimes the bricks are all the same, or sometimes the wall is a combination of different kinds of bricks.) Sometimes rocks contain fossils. Rocks are classified into three groups:

sedimentary, igneous and metamorphic. Examples of rocks include sandstone, granite, and marble.

3. **Crystals:** are formed when atoms join together in a regular geometric pattern. Crystals often have smooth, flat faces that meet in edges and corners. Minerals are generally divided into seven crystal systems, however, to simplify it, only some of the more common forms within these systems are introduced. Some examples of common crystal forms are: cubic (6 square faces), octahedron (8 triangular faces), pentagonal dodecahedron (12 five-sided faces), and hexagonal prism (six sided).

Many everyday objects at home are made of crystals. There are ice crystals in the freezer, sugar and salt crystals in the food cupboard, and silicon crystal chips in the computer, and in parts of the refrigerator and washing machine.

Examples of mineral crystal shapes include quartz (hexagonal prism) and pyrite (cubic, octahedron or pentagonal dodecahedron).

4. **Ore:** rocks or minerals that contain metals or other materials which may be extracted from them at a profit. Examples include: aluminum comes from bauxite, and copper may be extracted from over 160 different minerals including chalcopyrite (kal-ko-PY-rite) or bornite.
5. **Gem:** a mineral chosen for ornamental purposes for the following reasons: beauty - colour, brilliance, pattern and optical effects; durability - ability to resist abrasion, breakage or decomposition; and rarity - makes them prized possessions.
5. **Lustre:** the way light reflects off a mineral's surface. The 2 main categories used to describe lustre are **metallic** and **non-metallic**. Non-metallic minerals may also be described as **dull, earthy, glassy, greasy, pearly, waxy** or **silky**.
6. **Texture:** if you could touch it how would it feel? (**Rough, smooth, even** or **uneven?**)
7. **Streak:** the colour of the mark that a mineral makes on a white unglazed Porcelain tile (streak plate). A mineral that is harder than 7 will not leave a streak.
8. **Hardness:** minerals are classified by their hardness in numbers from 1 - 10. A mineral that has a higher number can **scratch** one with a lower number. Talc is one of the softest minerals and diamond is the hardest.