

INTRODUCTION TO MINERALS

OBJECT OR PURPOSE:

To create a discovery of structure analysis and to facilitate cooperative learning.
To introduce concept of minerals being made up of structures in certain patterns.
These structures determine some of the properties of the minerals. To allow the students to create together in a cooperative situation.

MATERIALS REQUIRE:

1. Sheets of paper (from your recycling bin, I hope)
2. Tape
3. Glue
4. Grade level 5-8 grades

PROCEDURE OR INSTRUCTIONS:

1. Divide into groups of 3-6 (7 groups).
2. Hand out sheets of paper (1-2 sheets per person)
3. Instruct each group to make their paper into the shape assigned them. The shape must be 3-dimensional and at least 5 copies of the shape must be made by each group. (Shapes to make are Cube, rectangular box, sphere, cone, cylinder, 3 sided pyramid, 4 sided pyramid)
4. Try not to instruct on how to make the shapes. Size is of no consequence though all shapes of each individual group should be approximately the same size. Encourage creative ways to form shapes and cooperative brainstorming in the designing.
5. After all groups are finished, show off each shape commenting on the creative thinking involved.
6. Instruct each group to put all of their shapes together into the most compact structure possible without changing any of the original shapes. Tape can be used to hold them together.
7. When groups finish have each one describe and show their shapes. For the most part each large shape will resemble the smaller original shapes. Relate this to crystal structure.

EVALUTION:

Tying it all together. From this activity it is easy to relate to crystal structures and to show actual structures microscopically or otherwise.
This lesson can be used as the opening lesson for a unit on mineral or crystal structure. It requires the students to create shapes cooperatively then to put those shapes together. This is analogous to individual crystals forming or to minerals forming.



