## Mineral Crystal Project Mary Stanley 2005

## Earth and Space science:

Nevada Science standards, 2005E.5.C.4 Students know that a rock is composed of different combinations of minerals.E.8.C.5 Students know that minerals have different abundances and have different properties.

## Unifying concepts:

-Adequately model through scientific inquiry the methods used by scientists in a research setting

-Adequately model that scientists may work in teams and some may work alone, but all communicate extensively with each other.

-Identify and illustrate natural cycles within systems (water, planets, rocks)

-Mathematically show that quantities can vary in proportion to one another (ratio of mass to volume in density, chemical formulas of minerals)

**Objective**: Student will research and learn information on minerals and construct a paper crystal that will illustrate what he/she has learned.

Follows: Mineral Identification Lab

Instructional information:	Grade: 6 through 8	Class time: 5 days
	Group or individual	

**Background**: When students learn minerals, the main purpose is for the student to recognize that minerals are different due to specific physical properties. Many white minerals and black minerals are confusing to most kids. If you show them how minerals are identified and used for our benefit, they may better understand the importance of minerals themselves.

Materials:	Construction paper (colored)
	Six crystal patterns- Cubic, Tetragonal, Hexagonal, Monoclinic, Triclinic,
	Orthorhombic
	Rulers, pens
	Mineral research from library: 3 minerals
	Name of mineral, physical properties, crystal shape, uses,
	and chemical formula

Preparation:Photocopy crystal patterns - Cubic, Tetragonal, Hexagonal, etc<br/>Have a list of minerals you would like your students to research. (See list)<br/>Write up the information you would like them to note. (See above research)<br/>Have students show you the research has been completed BEFORE they receive

the crystal cut-out patterns. (This eliminates <u>incomplete</u> library notes and students trying to complete project with no research)

**Learning activity**: After the students have completed research (they can do this in classroom with library books), they receive a crystal pattern that represents the group of minerals they researched. You chose what you want the students to include on the project. Although I ask my

students to research physical properties, I believe it more important to include the use of the mineral, chemical formula, and mineral name.

1. I suggest that students draw lines with a ruler and write in pencil first.

2. Students show teacher the completed crystal faces done in pencil.

- Again, this eliminates students who "rush" the project and do a messy job in pen.
- 3. Students complete the crystal in pen.
- 4. Other crystal faces are decorated with pictures they draw or from research.

**Class presentation** (Check for understanding): Students present what they have learned about a specific mineral or all three (depends on time). This is your chance to ask questions and the opportunity for students to ask questions of each other.