Birdseed Mining
A Lesson on Rocks and Minerals
Grade K-3

Objective/ Purpose:
This lesson was adapted from the Women in Mining organization website. It provides a fun way to learn about the diversity and rarity of certain minerals while teaching the kids about environmental protection. This lesson also gives the kids an idea of how hard it is to find these natural resources. An economical aspect is included by showing how a less valuable rock or mineral may give more profit due to its high abundance.

Materials:
- Birdseed mix- Any variety as long as it includes sunflower seeds and at least 2 other varieties.
- Shallow pans such as paint pans
- Small beads- blue, gold and silver
- Medium beads- white

Safety:
Make sure to inform the children not to eat the sunflower seeds.

Instructions:
1. Divide students into groups of 4 to 6.

2. Pour approximately 1 pound of birdseed in each pan.

3. Add 2 gold beads, 4 silver beads and 8 blue beads, and 3 white beads to each pan - mix into birdseed.

4. The beads and seeds represent the following:
   Gold beads = Gold
   Silver beads = Silver
   Blue beads = Copper
   Sunflower seeds = Iron
   All other seeds = Waste
   White beads = Reclamation (These beads will be assigned a COST rather than a VALUE because reclamation must be done at all mining operations regardless of how much profit was made. See #7.)

5. Students search through the seed mixture and separate out or “mine” beads, sunflower seeds and other grain products, making piles of each. Allow 5 to 10 minutes for the
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mining activity. (NOTE: The instructor should hint to the students that they should mine NEATLY, not mixing waste seeds with their beads, sunflower seeds and not scattering seeds all over the area. Instructor can have the option of examining the work of each group, or assigning a helper to monitor each group to see how cleanly the “mining” is being done. Instructor or helper may assign an arbitrary “fine” to cover costs for “environmental damage” at the messy tables.

6. Assign a value for each type of bead or seed.
I used the following values:
Gold bead = Gold = $5.00 each
Silver bead = Silver = $4.00 each
Blue bead = Copper = $3.00 each
Sunflower seeds = Iron = $2.00 each
All other seeds = Waste = $0.00
White beads = Reclamation = $100.00 each

7. Have the students count up the number of gold, silver, and blue beads, sunflower seeds from their piles and multiply the number of each by their values given in #6. Document all information on the “Birdseed Mining Spreadsheet”. Students should also note the amount of any environmental damage fines on the spreadsheet. Students should count the number of white beads in their pile and multiply by the reclamation factor. This number should be recorded on the reclamation cost line on the spreadsheet.

8. Have each group total up the dollar value of their “mining” operation, subtracting the environmental damage fines and reclamation costs. Have each group share their success with the others. Prizes may be awarded to the best table of “miners”.

Calculation Guideline: (can be used as a worksheet for older age groups)

Gold bead = GOLD:
Number of beads ________ x ________ = ________ price value

Silver bead = SILVER:
Number of beads ________ x ________ = ________ price value

Blue beads = COPPER:
Number of beads ________ x ________ = ________ price value

Sunflower seeds = IRON:
Number of Sunflower seeds ________ x ________ = ________ price value

TOTAL Value of all Products = _______________________

SUBTRACT cost of Environmental Damage fines = ______________________
SUBTOTAL = ________________________
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Number of WHITE beads ________ x $100.00 = _______________________

SUBTRACT reclamation cost from SUBTOTAL = _______________________

GRAND TOTAL = _______________________

Evaluation:
Ask a few questions:

1. Is it better to search out the more valuable rare items or the less valuable abundant items?
2. What is the importance of the reclamation cost and how does this apply to our environment?

You can also use this as a math lesson by handing out a calculations sheet as provided above.

Source:
http://www.womeninmining.org/activity.htm

Make sure to go here and see other ideas such as coconut geodes and cookie mining!!!