

# Mining in a Peapod

## **Introduction:**

Many steps are taken to find, extract, process and use aggregate resources. Aggregates can often be reused and recycled, even after being used in products. This lesson will show those steps in the same process as Mining in a Nutshell, just without the threat of allergies hindering some children from participating.

## **Objective:**

This activities will help students to understand that mining is a multistep procedure. Students will describe the major steps most companies will follow in finding, extracting, processing and then using mineral resources. Through these steps students will also formulate ideas on how to use the waste produced during the mining process.

## **Time Allotment:**

60-90 minutes

## **Materials:**

Fresh Chickpeas in their pods (2-3lbs)

Assorted colors of enamel paint, brushes

Blender

2 cans garbanzo beans(chickpeas)

2 cloves garlic, crushed

4 teaspoons ground cumin

1teaspoon salt

2Tablespoons olive oil

Assorted crackers and/or veggies

Plastic spoons

Butcher paper with T chart labeled shells and peas

Rock and Mineral samples and associated products

## **Set-up:**

Paint spots of color on the unshelled peas. Use several colors which can each represent a different mineral. Examples include: yellow=gold, blue=silver, green=copper, red=gravel, black=limestone. For each color paint 25-30 peas.

While students are out of the room, hide the peas in various places around the room. Colors can be grouped together in the hiding places, since several minerals can be found together in nature.

Provide copies of the map of the room for each group of students.

## Directions:

### Step 1:

Divide students into groups of 4-6, giving each group a color that coincides with a color of pea shell.

### Step 2:

Two or three students from each group will be the “mappers”. These students are to take the map and mark where they locate their “mineral”. **DO NOT REMOVE PEAS AT THIS TIME.** This is the **EXPLORATION** phase. While the students are out mapping, have the others at the table begin brainstorming ideas to utilize not only the peas, but also the shells, which are considered waste. Begin filling out T chart.

Step 3: Next, have the rest of the students go and **MINE** their product by removing the peas which the explorers marked on the map. Remind them that they can only pick up peas which the explorers have mapped. The group at the table can then add their ideas to the T chart. Once the miners have returned, have each group count and record the number of peas mined. Discuss various mining methods. Prizes can be awarded to the most successful group.

### Step 4:

Have the students shell their peas. The shells should be kept separate from the peas in piles at each table. The shelling represents the **PROCESSING** phase.

### Step 5:

Discuss that before being used, some minerals need to go through extra steps. These peas actually need to be soaked or steamed before being used. While this process can be done in certain classrooms, to save time use canned peas(garbanzo beans). Put the peas in the blender, add the garlic, cumin, salt and

oil. Blend until a paste, or hummus, has been made. This would be the final step in the **PROCESSING** phase.

Step 6:

Using spoons, spread the hummus on the crackers and veggies. This is the **MANUFACTURING** phase.

Step 7:

Have the students eat the hummus. This is the **CONSUMPTION** phase.

Step 8:

While eating, have the students share their ideas from the T chart on ways to use the shells, and other ways to possible use the peas. This is the **RECYCLING** phase.

Step 9:

Review the lesson and relate to aggregates.