

## APES- Strip Mining Lab

*Objective: Students will understand the concept of strip mining and how difficult it is to “reclaim” land once it has been mined. Students will also understand basic mining vocabulary and policies related to mining and environmental damage.*

### Materials:

- cupcake w/ cream center *aka ‘Ding Dong’*
- plastic knife
- straw (*clear*)
- ruler
- scissors

### Procedure:

#### 1. Initial Research – Create Mine Schematic

Measure cupcake height and diameter in centimeters. **Draw a scale diagram** of your cupcake (*land*). Create a scale legend for your drawing ( $1\text{cm} = 100\text{ft}$ ).

#### 2. Find Exact Location of Mineral - Take Core Samples

Plunge the straw into the top of the cupcake until you reach the bottom. Twist the straw slightly and pull it out. Take at least 2 more *core samples*. You are trying to find the cream center, which represents your valuable **ore**. Use scissors to carefully cut open the straws. Use this core sample to draw a scale diagram (*view from the top*) of where your ore is located including measurements in cm. (*add to the drawing above*)

#### 3. Remove Overburden & Extract Mineral

In mining, the **overburden** is waste earth & rock covering a valuable mineral deposit. Using your knife is a representation of the tools of mining, ***remove the overburden & extract your mineral ore***. Draw a scale diagram of exactly where you found your ore, and then **evaluate the accuracy of the hypothesis you made**

using core samples. *For example- did you correctly predict where the ore would be found based on these initial assessments? Explain.*

#### 4. Replace Overburden & Study Effects on Mine Area

Does the area mined look the same once the mineral is extracted? Take height and diameter measurements in centimeters, & draw a revised diagram of your land. Calculate the percentage decrease in height of your mined area. *Show calculations and explain what you found.*

#### 5. Conclusion

*In your own words*, explain the procedure of this lab as well as how it **relates to strip mining**. Also, list at least 3 harmful effects of strip mining on the environment.

6. Explain *The Surface Mining Control and Reclamation Act*. What does this act require coal-mining companies to do? Is it successful? *Why or why not?*