**Mining Lab**

**AP Environmental Science**

**Purpose**

To simulate the process and economy of mining, and to learn vocabulary associated with mine operations.

**Materials**

“Mountain” (bowl with your cookie and kitty litter)

“Box Car” (separate bowl to collect your overburden)

“ore” – chunk of cookie

“spoils”- the non-chocolate part of the cookie

“gold” – the chocolate chip in the cookie

Scale- measure in grams

Weighing paper

toothpick

Money

Optional tools for purchase-

“shovel” (plastic spoon) = $50

“digger” (dissecting probe) = $20

“lifter” (tweezers) = $30 \* can not be used to lift entire “ore” out of “mountain”

“pick” (Dissecting needle) = $30

**Procedure**

1. Obtain all materials and set up your operation.
2. Use your starting capital to purchase necessary equipment. You may go into debt from the bank, but debts must be paid + 5% interest rate at the end of the game (ie if you need to borrow $100, at the end of the game you will owe $105).
3. Weigh your ‘mountain’ initially and ‘boxcar’ while it is empty.
4. At the starting bell, you will have 30 seconds to mine your mountain, searching for gold.
5. Stop operations at the stop bell and re-organize (30 seconds). You may purchase additional tools during this time if you would like.
6. Repeat steps 4 & 5 until you have mined all the gold from your mountain.
7. Using the data sheet as a guide, weigh your overburden in your boxcar, your spoils, and your gold.
8. Trade in your gold for payment from the bank.
9. Repay all debts and finish computing the data sheet.

**Conclusion**

Total weight of gold mined \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total costs \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Total profit \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Total Profit per worker ­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Shifts needed to complete mining \_\_\_\_\_\_\_\_\_\_