"Every Experiment is a Treasure"

Read page 11, in Farmer George Plants a Nation, and then recreate one of George's experiments.

Materials:

Seeds –such as sunflower or bean

Seed starting containers -- Egg cartons are the easiest. Cut in half – each student or group of students will need 6 egg cups
http://www.instructables.com/id/easy-seed-starter./step6/update/

Soil – enough of the same soil to fill all 6 cups in the container. The soil can be a basic potting soil (without added fertilizer) or top soil from the yard.

Fertilizer material: You will need 5 different materials to test. (You will leave one soil sample plain. This will be your control.) For example: A bag of aged manure (from a garden center), old coffee grounds, banana peels (blend in a blender until a thick paste. May need to add a bit of water), shredded paper (put in a blender with enough water to moisten into a thick paste), grass clippings (blended, see above), etc.

Directions:

1. Put the same amount of soil into each cup.
2. Leave one cup with just plain soil. Mark the rim with a colored marker. This is your control.
3. Place 1 tsp of each fertilizer in the remaining 5 cups (one fertilizer per cup). Mix with soil. Note on your Observation Sheet which cup contains which fertilizer.
4. Plant two seeds in each cup.
5. Water evenly, until moist but not drowning
6. Place in a sunny spot.
7. Record the date on your Observation Sheet. Write down your prediction. What fertilizer will work best?
8. Every day observe and record what you see. It will take a few days before your seeds will sprout. Water on a regular basis. Using a spray bottle works well.

While you wait for your seeds to sprout, research what nutrients, if any, are in the 5 fertilizers. How do those nutrients affect plants? Have your students contact the local Cornell Cooperative Extension or email a knowledgeable Master Gardener or local nursery. Conduct an internet search. Here are a few articles to start with: http://www.gardensalive.com/article.asp?ai=793; http://groundtoground.org/2011/08/28/coffee-grounds-for-your-garden/ Have students evaluate the websites they found. Are they helpful? Are they accurate? How do they know?

Research the nutrients a plant needs to grow. How do they compare with the nutrients found in the 5 compost materials? Does this change your predictions?