***MATERIALS AND PROCEDURES***

**Materials**

1.    16 clay pots that are 10 inches in diameter and have a 1 cm whole in the bottom for drainage

2.    flower water can

3.    tap water

4.    measuring cups

5.    1 bag of Schultz potting soil plus

6.    1 bag of Sam's choice starter fertilizer

7.    1 bag of Whitney Farms seed-starting mix

8.    4 tomato cages (see diagram for exactly type)

9.    4 rolls of cellophane (one roll for each color red, green, blue) or also know                     as plastic wrap

10.  1 bag of snap bean seeds

11.   scissors

12.   tape

13.   a ruler that uses both inches and cms

**Procedures**

1.   First buy 16 clay pots (specifics stated in materials) at Home Depot.

2.  Then once you have the supplies listed above then lay out all the pots on the ground

3.   Place the potting soil so that it measures four inches from the bottom of the pot, using the ruler to be exact

4.  Place two snap bean seeds in each pot

5.  About 1 inch apart from each other

6.  Then put enough miracle grow fertilizer so that the seeds are lightly covered (Don't over use it)

7.  Then water 4 cups of water in each pot or until the soil and seeds are completely soaked through, then let drain

8.  Then cover the top with one inch of the seed starter mix and again using the ruler to be exact

                  i.    You use the seed starter mix so that the seeds have an easier            time sprouting through the soil (This is recommend but not required for the experiment)

9. Then water plants again with 2 cups of water for each pot.

10. Place the pots in a sunny area where there is plenty of light and is warm during the day.

11. Water the plants daily with 1 cup of tap water

12. It will take 10 to 7 days for the plants to sprout

13. If both seeds sprout in the same pot, then pitch the shorter plant at the base to stop the growth or kill one of the plants

14. There should only be one plant growing in each pot

                i. This is so that all the plants have the same amount of growth space and the plants.

                ii. Don't have to be concerned with competition with another plant in the same space

15. Once the plants sprout place 4 pots in the tomato cage

16. The tomato cage needs have the top facing the ground so that the larger end of the circle is face down on the ground

17. Then place the 4 pots inside the tomato cage in a 2x2 square

18. Once you have placed the 4 tomato cages with 4 sets of pots in each cage, then get out your plastic wrap, scissors, tape, and ruler

19. For the first tomato cage wrap the red plastic wrap around the cage only once, and be careful not to overlap the plastic.

i.     If you overlap the plastic in some area but not others then the sunlight with have a harder time penetrating the plastic and the overlaps will be different in each place causing your results to be flawed

20. Once you place the plastic wrap around the cage tape it into place so it will stay.

21. Make sure you cover the top of the cage as well as the sides

22. This is so that air can pass through the cage and the plants will receive enough Oxygen and Carbon Dioxide.

23.Then repeat steps 18 through 21 with each of the tomato cages using a different colored plastic wrap for each tomato cage

24. Keep the last group of 4 pots uncovered as the control group with no cellophane

25. Then keep them in the same sunny area so that the plants able to grow

26. Measure the height of the plant growth in each pot for each color with a ruler using cm's and record them down in a chart form.

27. Once we record the height of the plants in the tomato cages for 25 days then we removed the cages and we plucked 6 leaves from each plant

28. Then we places the leaves on a flat surface such as a table and then placed a piece of graph paper over the leaf

29. Using a crayon we colored over the leaf so we could find the exact shape and size of the leaf's surface area

30. Once the leaves were colored on the paper then we counted the number of square that the leaves filled, and then estimated the surface area of each leaf by the number of squares each leaf filled

 31. Then we grouped the leaves by what color they were under, and averaged the leaves that were under the same color of plastic.