Student 3.

Method.

This is my method that I went by and made some changes which I have stated.

1. Take 25 cuttings in between 10 – 15 cm long, from the mother plant and dip the cuttings in rooting hormone gel / powder (controlled variable) [3].

2. Remove all leaves from 5 of the cuttings.

3. Remove all leaves except 2 from 5 of the cuttings.

4. Remove all leaves except 4 from 5 of the cuttings.

5. Remove all leaves except 6 from 5 of the cuttings.

6. Remove all leaves except 8 from 5 of the cuttings.

These are my independent variables [1]

7. Fill each test tube with 15mls of water [3].

8. Put one cutting per tube and then place into test tube holder in rows.

9. Place all tubes in the same place. This is so all you will have a fair test [3].

10. Each day check the cuttings for; number of roots, water level, and what the plant looks like.

11. Record this in a log book and take photos.

12. Some of the factors that I will keep the same are the water level. I will make a mark in the tube on all of the tubes and when the water level gets below this mark I will add more water bringing the level back up. This is so all the cuttings have the same amount of water.

13. Keep the cuttings in a sunny shady place for maximum root and plant growth [3].

Dependent variable

I will measure the amount of roots grown in the test tubes during every school day and record this in the log book. I will write down the time I measured them also [2].

The average root growth for the cuttings range from 11 to 22.8. The averages for the cuttings are:

Leaves on cuttings	0	2	4	6	8
Average	11	15	15.1	18.7	22.8

My aim was to find out if the number of leaves affect the amount of root growth in the cuttings. The trend in the graph above has helped me to come to a conclusion about my aim. The lines are horizontal for the first 3 days and then they go up steadily until nearly the end of the experiment where they start to level off apart from the cuttings that have 4 leaves [4]. From looking at the table and the graph I now know that when doing cuttings the amount of leaves on the cuttings does affect root growth [5]. I know this because the 5 cuttings that had no leaves still grew leaves. The root growth was slower compared to the rest of the cuttings because of the lack of leaves and no photosynthesis was carried out. The only nutrients that the leave less cuttings had was what was in the stem. When the cutting is dipped in the rotting hormone gel, what it does speeds up the process of root growth. The cuttings are sitting in water which is slowly being absorbed up through the xylem to the leaves. On sunny days I put the cuttings on the window sill where they were in direct sunlight, I did this as the cuttings need maximum light for the roots to grow. I looked up in my last year's horticulture book, Growing Plants by G.K Mortiarty, page 122 and I found 'cuttings need enough light for their leaves to carry out photosynthesis and make food to grow' [6]. Before I took the cuttings I made sure that I had the entire test tubes ready, filled up with water, in the test tube holder. I did this as the longer the cut is exposed the quicker the cut will dry up and cell it off. Once the cut has done this the chance of water getting into the cutting is very slim. By following my method I was able to gather valid information by checking then whenever I could, once I had counted the total number of roots I recorded this in my log book. I took photos of the cutting at the start and then at the end.