



# Hydroponic Plant Growth

Worksheet

**AgriBiotechnology**  
*AgriScience & Society*

Interval 1  
Segment 4

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## Part 1: Segment 3

How many seeds were put into the germination chamber?

Are all the requirements for germination of the seeds provided in the germination chamber?

What advantages does the germination chamber have over other types of containers?

## Part 2: Segment 5

Sketch a seedling in the space provided. Label as many parts as you can using the references available.

- A. How many seeds were placed in the germination chamber during Segment 3? a. \_\_\_\_\_
- B. How many seeds had successfully germinated by Segment 5? b. \_\_\_\_\_
- C. What was the germination percentage of your seeds? ( $b \div a \times 100$ ) c. \_\_\_\_\_ %



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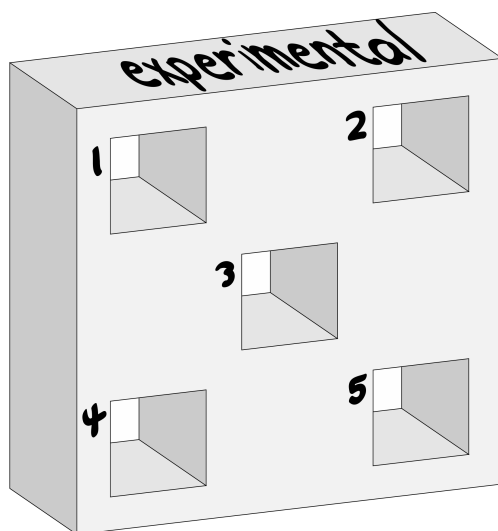
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## Part 3: Extended Observations

Observe your plants daily. Feel free to make your own or additional data tables on notebook paper or with the use of *Microsoft Word*. Think of criteria that can be easily compared between the control and experimental plants, and criteria that would be good indicators of overall plant health.

- Using the knowledge you've learned thus far about plants and hydroponics, would you expect the experimental or the control plants to exhibit the best growth?



## Experimental Plants

| Plant Number | Observations After: (hrs) | Height | Color | Number of Leaves | Other |
|--------------|---------------------------|--------|-------|------------------|-------|
| 1            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |
| 2            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |
| 3            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |
| 4            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |
| 5            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |



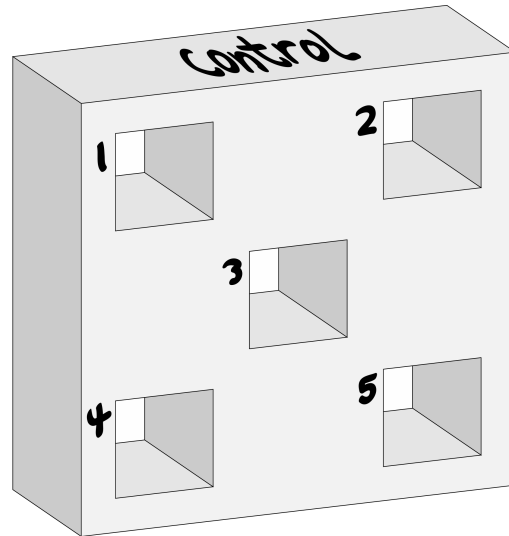
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Collect data **each** day in order to have a complete set of data from which accurate conclusions can be drawn. Select a unit (mm, cm, or inches) by which to measure plant height consistently.



## Control Plants

| Plant Number | Observations After: (hrs) | Height | Color | Number of Leaves | Other |
|--------------|---------------------------|--------|-------|------------------|-------|
| 1            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |
| 2            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |
| 3            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |
| 4            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |
| 5            | 24                        |        |       |                  |       |
|              | 48                        |        |       |                  |       |
|              | 72                        |        |       |                  |       |

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## Analyze Data

Using the data tables for reference, construct some type of graph, making the data easier to interpret. You might construct a bar graph comparing the maximum heights of the experimental and control plants. The x-axis, horizontal axis, might be “Plant Number” and the y-axis, vertical axis, might be “Plant Height.” A line graph might also be constructed that compares the growth rate of the experimental and control plants. You can also use your own paper or *Microsoft Word* if you wish.

## Conclusion

After analyzing your data, make a conclusion as to whether the experimental plants or the control plants exhibited the best growth. Was your guess correct? Can you think of any other questions that arise and that are suitable for further experimentation?