**Soil Quality Grow Lab**  Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Which soil Grows Plants Best?

**Objectives:** *Determine which soil type provides the best conditions for plant growth and use knowledge gained from soil testing to determine the best combination of soil factors needed to support ideal plant growth*.

**Materials:**

* 200g of each Soil Sample (A, B, C and Potting Soil)
* 4 planting cups
* 12 beans (or lentils)
* 1 spray bottle
* Plastic bags to enclose cups during germination (optional)
* Paper towels

**Procedure:**

1. Label your planting cups (period and group number)
2. Place a piece of paper towel in the bottom of each cup to prevent soil leakage
3. Place approximately 2 inches of each soil in each appropriately labeled cup
4. Moisten the soil by gently squirting water on the soil from the spray bottle
5. Plant 3 beans (or lentils) in each cup by pressing down about ½ inch with a pencil. Sprinkle soil over the top to cover the hole left.
6. Monitor soil moisture and add water as necessary to keep moist.
7. Once germination occurs, measure the height of the plants at regular intervals and record observation about plant color and overall health in the data table.

**Prediction:** Based on the qualities that you know about each soil type, which do you think will best support germination and growth of the plants?

**Assessment:**

1. Of the soils you analyzed, which is best suited to growing plants?
2. Based on your analysis, what could you do to improve soil properties of the soil or soils that least supported plant growth?

**Data Table (Growth of Beans in all Soil Types)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Soil A** | **Soil B** | **Soil C** | **Potting Soil** |
|  | Soil Properties: | Soil Properties: | Soil Properties: | Soil Properties: |
| **DAYS** | **Height (cm)/**  **Observations** | **Height (cm)/**  **Observations** | **Height (cm)/**  **Observations** | **Height (cm)/**  **Observations** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |
| 5 |  |  |  |  |
| 6 |  |  |  |  |
| 7 |  |  |  |  |
| 8 |  |  |  |  |
| 9 |  |  |  |  |
| 10 |  |  |  |  |
| 11 |  |  |  |  |
| 12 |  |  |  |  |
| 13 |  |  |  |  |
| 14 |  |  |  |  |
| 15 |  |  |  |  |