Name _____ Teacher _____ Date _____

Pre-Lesson Activity 0.2GL: Plant Growth Investigation Setup Worksheet

You will need (for each person):

- ☐ Hydrated gel crystals (that you made the day before in 0.1GL)
- ☐ One radish seed
- ☐ A test tube
- ☐ A balance to measure masses

Follow the procedures below to set up your investigation. Put a check in the box when each step has been completed. *If the mass you measure is less than 0.01g, record it as <0.01g. For our purposes, we will treat this as a zero when doing any calculations with it.*

A. Dry Mass of gel in your test tube: *Check the box as you complete each step.*

- ☐ Measure the mass of your empty test tube. Enter the mass in the table below.
- ☐ Fill your tubes nearly to the top with gel.
- ☐ Measure the mass of your test tube full of gel. Enter the mass in the table below.
- ☐ Note: You may want to place a piece of tape across the top of the tube to keep the gel from spilling out.
- ☐ Calculate the mass of the gel in your test tube:
  - (mass of test tube full of gel) – (mass of empty test tube) = (mass of gel)
  - Enter the mass in the table below.
- ☐ In the previous worksheet you calculated the percentage of solid in the gel. Use this percentage to calculate the dry mass in your gel. Enter this mass in both tables below.

Mass of empty test tube	***Mass of tube full of gel***	***Mass of gel***	***Percentage of solid in gel***	***Mass of solid in gel***

B. Mass of all solids in your test tube: *Check the box as you complete each step.*

- ☐ Measure the mass of your radish seed. Enter the mass in the table below.
- ☐ Place 1 seed in the top of your test tube so that it sits on the gel. You do not need to bury it in the gel.
- ☐ Add the mass of your radish seed to the mass of solid in the gel. Enter the total solid mass in the table below.
- ☐ Place your labeled and planted test tube in a rack under your grow lights or in a sunny windowsill.

Mass of solids in gel	***Mass of radish seed***	***Total solid mass in test tube***

C. Ongoing Observations and Data Collection

As your radish plant is growing, continue to make regular observations in this table.

Also, you will periodically need to add a nutrient mixture to your growing plant. Record how much dry mass you are adding with each addition of nutrient mixture in the following table. Use the percentage of solid in the Ionic Grow mixture to calculate the solid mass you add to your test tube.

Date	***Observations***	***Mass of Ionic Grow mixture added***	***Percentage of solid in Ionic Grow mixture***	***Mass of solid in Ionic Grow mixture added***