LAB NOTEBOOK

NAME

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PERIOD

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CLASS

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PROJECT TITLE

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The Lab Notebook

Research studies in all areas require the investigators to keep accurate and complete records of all details pertaining to the study. If the study's records are not complete and information is not entered, then the entire study could be viewed as meaningless. In science, study records are often recorded in a special journal called 'The Lab Notebook'. Scientists know that the information recorded in the Lab Notebook is vital to the success for the following reasons.

The Lab Notebook provides the investigator with a 'how to' way for repeating successful methods. If an investigator, for example, accidentally found a good way to make a plant container and wanted to repeat the 'accident' at a later time, the investigator would encounter a number of problems if accurate and detailed notes were not available.

The Lab Notebook also allows investigators to share their results and successful methods with other investigators. If lab team A, for example, finds that their plants are not growing very well and the team members notice that the plans from lab team B are growing very well, then team A could provide team B with useful information from their Lab Notebook that would help them with plant growth.

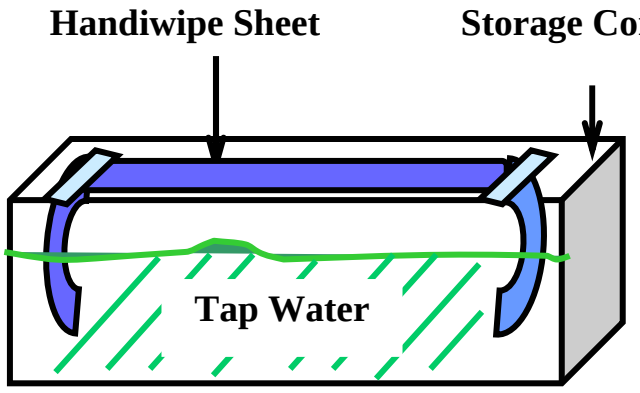
The Lab Notebook provides investigators with a way to examine their methods and equipment design before the investigators use the equipment or methods. The review of methods and equipment prevents the investigators from using flawed methods and/or equipment before these problems have a chance to cause actual damage.

The Lab Notebook is vital in helping the study investigators convince investigators in other labs that their findings are valid. Other labs may need to repeat the results of the study before they are convinced that the results are true. If the other lab does not have all of the necessary study details they may be unable to repeat the study's results and will announce to other labs that the study's results are not valid.

Investigators in this lab are about to undertake an important study that may eventually help Earth's residents to adapt to the ongoing effects of Global Warming. For this reason, investigators need to be diligent in their efforts to create and maintain their Lab Notebooks.

Materials for the Seed Germinator and Plant Container	
Plant Name, variety, Supplier	Broccoli, De Cicco, Morese Seed Co.
Seed package information:	Large heads, high % of side shoots.
Seed Sprouting Device	4 Qt, storage container, Sterilite®
	Handiwipe® (Detergent free)
Seedling Holder-support	Cotton balls
Description of Plant Holding Cup	Disposable plastic drinking cup; (5 oz.)
Plant container	Half-gallon plastic disposable milk carton or 2 L plastic bottle
Plant container support base	3-5 lbs of aquarium or pea gravel
	Gladware® storage container (739 mL)

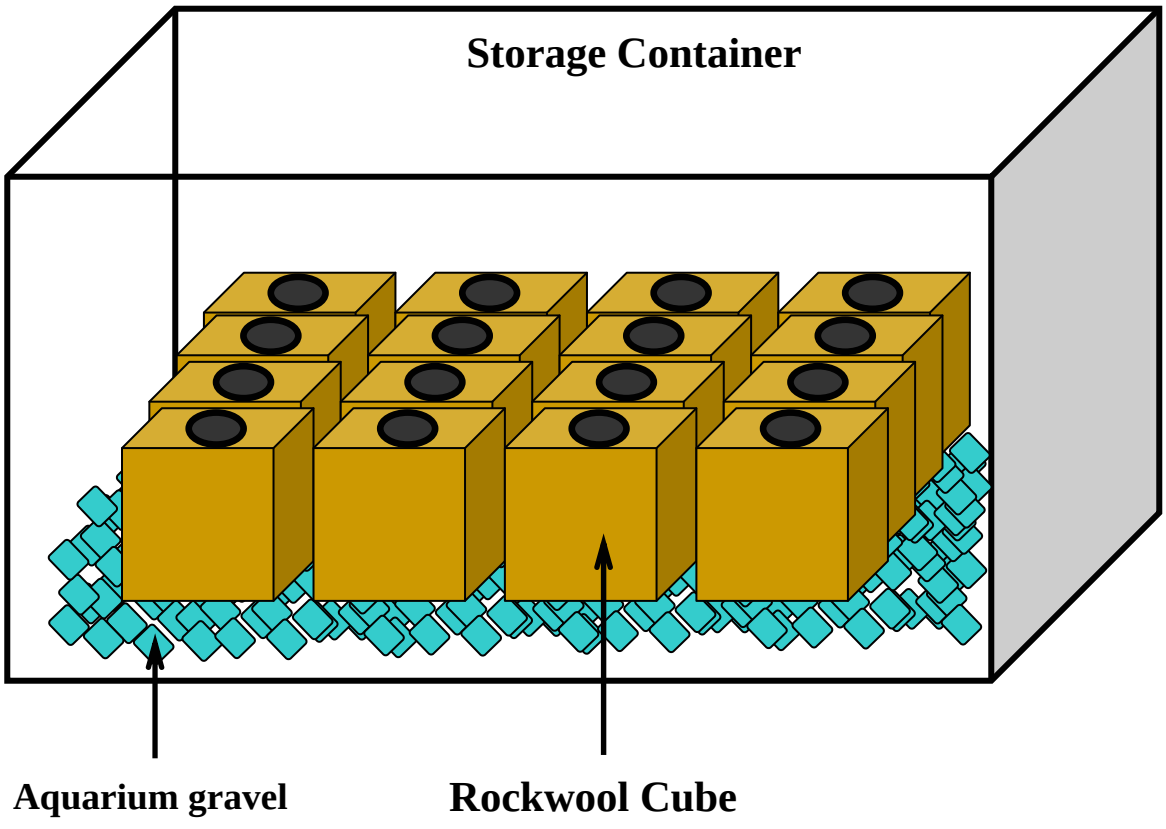
Sketch of Seed Germinator



Materials for Transferring Sprouts to Seedling Container

Sprout Holder	**Rockwool cube; (1.5” X 1.5” X 1.5”)**
Container for Rockwool Cubes	**Gladware® storage container (739 mL)**
Sprout Transfer Sticks	**Toothpicks-various types**
Sprout Holder Support	**Aquarium or pea gravel**
Light	**1- Light Unit per 16 sprouts**

Sketch of a Sprout Holder without a Light Unit



Plant Nutrient Solution Materials

Brand Name and Manufacturer of Nutrient Concentrate	**Ionic Bloom 3-2-6. Hydrodynamics International**
Measuring nutrient concentrate	**Plastic pitcher (2 L)**
Water Reservoir	**Water can; (2.5 gal)**
Nutrient solution mixing container	**Plastic pitcher (2 L)**
Nutrient solution stirring device	**12” Ruler**

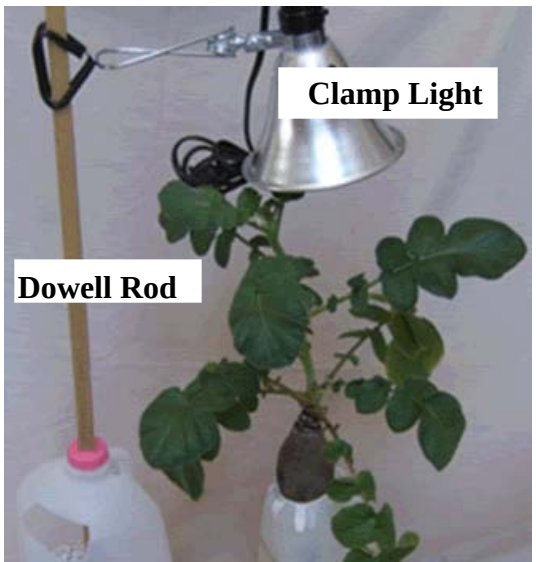
Sketch and Label Materials Used to Prepare the Nutrient Solution

Light Growing System Materials (per lamp unit)
(one lamp unit used for each plant)

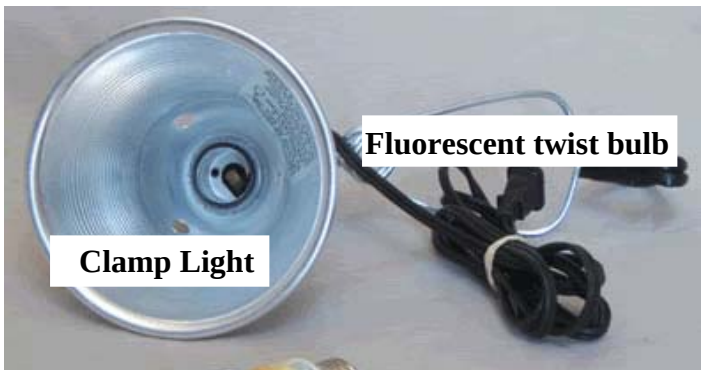
Light Holder Support Base	**Gallon plastic milk jug.**
Light Holder Support base weight	**About 3000 grams (5-10 lbs) of aquarium or pea gravel**
Light Source	**Fluorescent Twist Bulbs (Bright Effects®)**
	Light Output- 1600 Lumens: Watts Used- 23
Light Source Holder	**Clamp light with 6 ft, 10/2, SPT-1 cord (Rite-Lite®)**
Light Source Holder Support	**Dowell Rod-square, 5/8 in. X 36 in. (Waddell®)**
Light Source/Outlet Interface	**6-Outlet Power Strip (Woods Industries®)**

Sketch and Label the Light Growing System

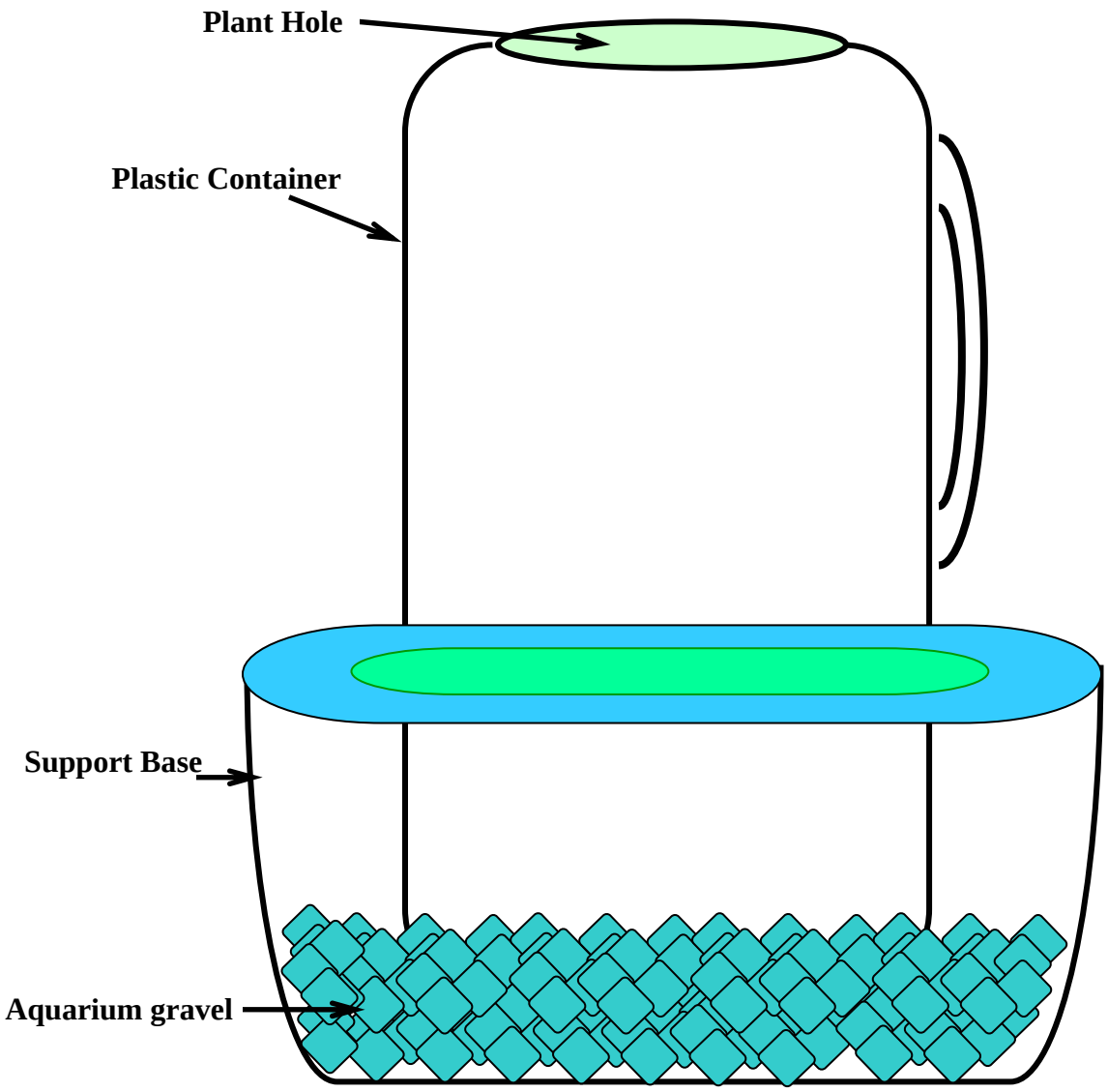
A Light Unit with Plant



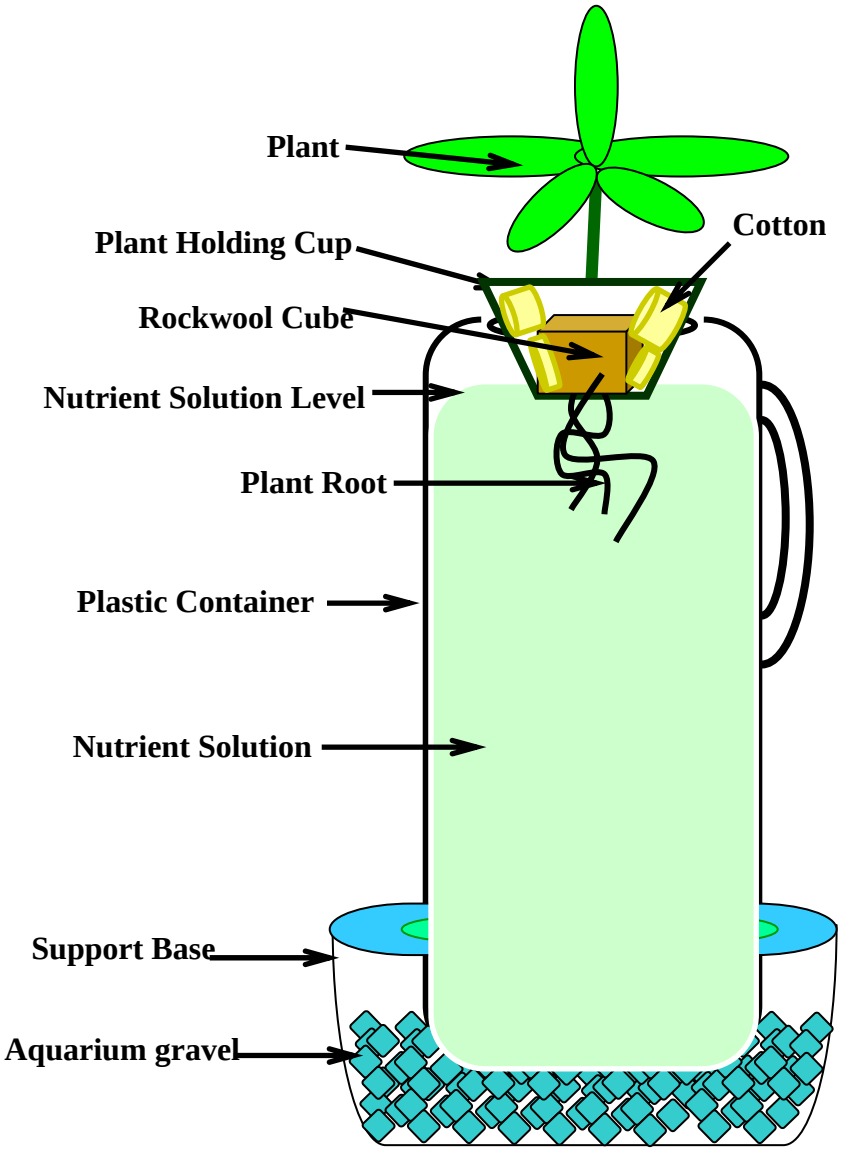
Light Parts from a Light Unit



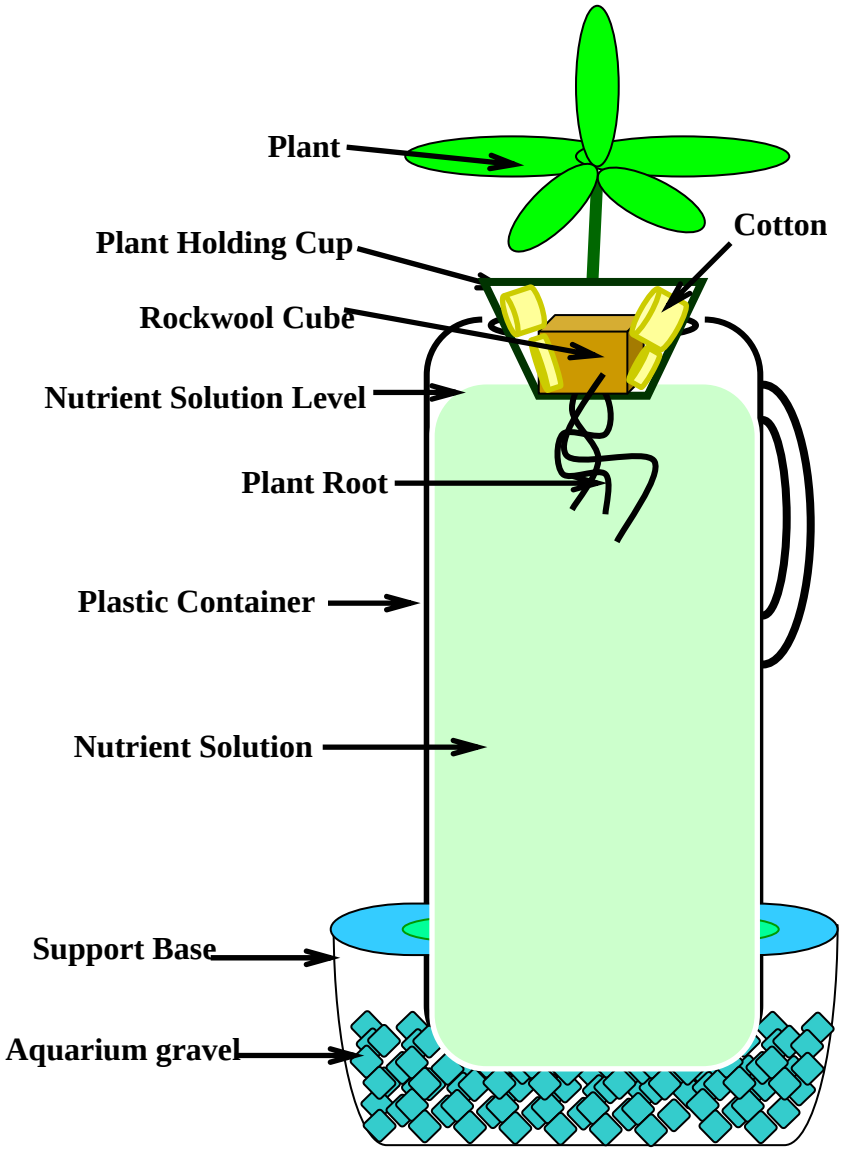
Sketch of Plant Container



Sketch of Plant Container on Start Day



Sketch of Plant Container on Refill Day



Plant Mass (Weighing) Materials

Scale or Balance	**Triple beam or electronic balance with a max limit of 500-1000 grams, accurate to 0.1 grams**
	Preferably a scale with a tare mass feature.
Plant Holder for excess nutrient solution	**Half-gallon plastic disposable milk carton, or any container capable of capturing solution from the roots of a plant.**
Plant Holder for weighing the plant	**2 Liter plastic pitcher (PackerWare®)**

Sketch of Materials Used to Weigh (Mass) the Plants