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| Daily Log  Daily Journal  11/18/01-11/25/01: Research on plants, seeds, peas and growing techniques at library and on Internet. Email Biology teacher for advice (see Contacts section).  11/26/01: School resumes. Talk to Mr. Thiel at lunch about topic.  11/27/01: Talk to Mr. Simms, the botany teacher, about seeds, germination and to look at seed collection and borrowed a botany textbook.  11/30/01: Went to Mr. Simms� room again and got three 2.5 oz. packets of pea seeds from him. Talked more about project idea and learned how to germinate and grow peas.  12/8/01: Went to Home Depot and bought vermiculite and soil.  12/14/01: Emailed Julie Glass of California State University, Hayward regarding any advice or access to a machine that could measure the size of a pea seed�s embryo.  12/15/01: Picked out defected peas from packets. Measured two packets of peas with micrometer. Started measuring length, width , height and mass � realized too many calculations to consider. Decided to measure length of pea along axis only.  12/16/01: Set up experiments. First, filled half of plant tray with soil and other half with vermiculite. Plant peas 3 cm deep into tray (one per square). Then, elevate fluorescent lamp 30-cm distance from the top of the plant tray. Watered each square with 2-mL of distilled water (used micropippette). Place setup against wall.  -Soil  -Vermiculite  Plant Tray Layout (pea size in mm)  6.0 a 6.0 b 7.0 a 7.0 b 6.0 a 6.0 b 7.0 a 7.0 b  5.2 a 5.2 b 6.2 a 6.2 b 7.2 a 7.2 b 5.2 a 5.2 b 6.2 a 6.2 b 7.2 a 7.2 b  5.4 a 5.4 b 6.4 a 6.4 b 7.4 a 7.4 b 5.4 a 5.4 b 6.4 a 6.4 b 7.4 a 7.4 b  5.6 a 5.6 b 6.6 a 6.6 b 7.6 a 7.6 b 5.6 a 5.6 b 6.6 a 6.6 b 7.6 a 7.6 b  5.8 a 5.8 b 6.8 a 6.8 b 7.8 a 7.8 b 5.8 a 5.8 b 6.8 a 6.8 b 7.8 a 7.8 b  8.0 a 8.0 b 8.0 a 8.0 b  Set up germination containers (6). Place one paper towel in each container. Label containers: 5.0-5.4, 5.5-5.9, 6.0-6.4, 6.5-6.9, 7.0-7.4, and 7.5-7.9. Place two peas of each size in corresponding container (10 peas for each container). Water each container with 20-mL in each container. Place all containers on a bare desk in corner of room.  12/17/01-1/4/02: Begin observing (see Data section for results). Water each container 5-mL of water everyday (to keep peas moist) between 8 and 10 p.m. Water each square 1-mL every other day.  1/4/02: Got email from Dr. Lynne Osman Elkin, Professor of Biological Sciences at California State University, Hayward.  1/7/02: Begin second germination experiment for repetition (exactly like first germination setup).  1/8/02-1/21/02: Observe experiment. Water each container 5-mL of water everyday, between 8 and 10 p.m.  [[data](http://docs.google.com/data.html)][[data1](http://docs.google.com/data1.html)][[data1.5](http://docs.google.com/data1/2.html)][[data2](http://docs.google.com/data2.html)][[data3](http://docs.google.com/data3.html)][[data4](http://docs.google.com/data4.html)][[data5](http://docs.google.com/data5.html)][[data6](http://docs.google.com/data6.html)][[data7](http://docs.google.com/data7.html)][[data8](http://docs.google.com/data8.html)][[data9](http://docs.google.com/data9.html)][[journal](http://docs.google.com/dailyjournal.html)]  [[Home](http://docs.google.com/home.html)][[Introduction](http://docs.google.com/introduction.html)][[Hypothesis](http://docs.google.com/hypothesis.html)][[Procedure](http://docs.google.com/procedure.html)][[Data](http://docs.google.com/data.html)][[Conclusions](http://docs.google.com/conclusions.html)][[Bilio/Links](http://docs.google.com/biblio.html)]  [[2002 Projects](http://docs.google.com/AP2002/index.html)][[2001 Projects](http://docs.google.com/index.html)][[2000 Projects](http://docs.google.com/AP2000/index.html)][[1999 Projects](http://docs.google.com/AP99/index.html)][[1998 Projects](http://docs.google.com/AP98/index.html)] |