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| Conclusions  I terminated my experiment after twenty-one days of growth and observation.  The data for these observations is recorded in tables 3 and 4, and figures 1 and 2.  While the overall germination rate was surprisingly lower than I expected, interesting conclusions can still be drawn from the data I could collect.  Even after the specified germination period for the bluegrass, there was no growth other than that of the �no light� seeds, as seen in figure 2 and table 4.  So most of this evaluation of data will be done on the lettuce trays. It is however interesting to observe that many of the bluegrass seeds in the painted trays did germinate ahead of their supposed germination period, which was fourteen to twenty-one days.  Some of the bluegrass germinated as early as three days ahead of this time period.  Obviously the biggest surprise of the experiment came form the supposedly �no light� tray.  As you can see from the charts and tables for both the bluegrass and lettuce germination rate for the painted tray was much higher and faster than that of all the other trays.  I would have to assume that light had filtered through the top and onto the seeds.  But why was germination so accelerated in these particular trays?  Perhaps it was a consequence of the temperature in each tray.  I decided to test this theory by filling the trays with water and placing a thermometer in a tray of each type.  The temperature of the water in each tray should indicate any difference in temperature experienced by the seeds.  The results for the data can be seen in tables 1 and 2.  The interesting observation that can be made from this data is the consistency of temperature for the �no light� tray.  Perhaps the rapid germination rate of this tray can be attributed to this factor.  The temperatures for the other trays seem to vary by much wider margins. During the evening the clear tray had some of the lowest temperatures, during the afternoon, some of the highest.  A consistent temperature seemed to be best for the seeds; but the clear tray, with the wildly fluctuating temperatures, but more exposure to light, came in a close second.  It is interesting to observe that the lettuce seeds with the highest rate of germination, aside from those in the painted tray, were the seeds in the clear and red trays, as can be seen in figures 1 and table 3. Remember in Engelmann�s experiment, that the algae with the highest rate of photosynthesis was that algae that was exposed to the red and blue light.  It is interesting that the red should experience such rapid rates of germination; the red tray had temperatures close to that of the green tray at night and close to the blue tray at mid-day, which both only had one seed germinate.  The germination rate of the red is almost identical to that of the clear tray, which was receiving all wavelengths of light, but had sufficiently lower temperatures in the evening and higher temperatures at mid-day.  This would suggest that red wavelengths of late have an important impact on seeds, or perhaps that the temperature in the red tray was more consistent, encouraging seed growth.  The lack of germination in the blue-covered seeds would suggest that this impact is not related to photosynthesis.  In Engelmann�s experiment the blue-lit seeds seemed to photosynthesize just as rapidly as the red.  The difference in the germination rate of my red and blue covered seeds, (as seen in figure 1) would suggest that the importance of red wavelengths of light on seeds is significant, but unrelated to photosynthesis.              There are several recommendations I would make to anyone interested in attempting this experiment.  First of all, make trays that actually do not expose the seeds to any light.  I though by painting the tray I had sufficiently blocked out the light, but I apparently did not.  So although the painted tray produced some interesting results for consideration it would also have been nice to have trays that were actually blacked out.  As to how to accomplish this, perhaps aluminum foil or a black, plastic garbage bag could be used.  The trick will be maintaining a temperature in those trays similar to the others.  Another problem I would hope to see solved in future experiments would be finding a way to check the seeds without exposing them to light.  I assumed that the light exposure at planting time would have little affect on the seeds as they had not yet been exposed to water, however it would be nice to see that variable controlled as well.  I attempted to minimize exposure to the light by checking the seeds at night, with a flashlight, whenever possible; but I am not quite satisfied with that approach.  Perhaps a large amount of seeds should be grown and a different batch of them exposed and checked each time.  After seeds had been checked for germination and exposed to the light they would no longer be used.  Other smaller changes would be making the watering of the seeds more uniform.  I assumed that since the trays were closed environments the water would be circulated and I would not have to replenish it often.  However, by pulling off the tops and checking the trays daily I did lose water that dripped off the tops.  Also I would measure and record the temperature of the trays daily, instead of just after the experiment was completed.  While my observations from this experiment do not prove that photosynthesis is involved in the germination of bluegrass and lettuce seeds, they do provide interesting evidence that temperature and wavelengths of light do affect the germination rate of seeds.    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