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Light and Grass Experiment

This activity uses plants', most cases lawns', response to lack of light to create images or patterns. When deprived of light, chlorophyll, which gives leaves their green color, fails to function. As a result, the leaves lost or don't produce chlorophyll and turn yellow or sometimes even white. This technique can be carried out on a large scale on swathes of lawn. You can simulate the process on a smaller scale indoors.

Objectives

- Demonstrate how depriving grass of light changes its color
- Try out ideas for a Pattern project
- Be creative

Materials

- A shallow, rectangular container
 - * a shallow Rubbermaid container at least 8" x 10" long or a long, shallow window box works well
 - * the bigger the container, the larger the items you can use and the more dramatic your results will be
- Potting soil
- Grass seed
- Quarters, nickels, dimes, and half dollar coins

Time required

Set up – 20 minutes

Waiting for grass to grow – 10-14 days

Create a pattern – 20 minutes

Waiting to see pattern – 5-7 days

Directions

Setting up your "lawn"

1. If your container doesn't have drainage holes, fill the bottom with a layer of gravel or stones. Fill the remaining with dampened potting soil.

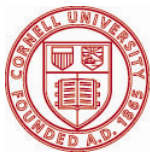
2. Thickly sow the grass seed over the soil, water as needed until grass is established.
3. Keep in a spot that gets ample sunlight or under grow lights.

Creating the pattern

1. Decide what pattern you want to create. Determine if using coins will meet your needs. If not, seek out other items. As long as they are heavy and dense, most items will work. You want to make sure that the items will not shift on the surface and that they are dense enough not to allow any light to penetrate.
2. Arrange your items in the desired pattern and return the experiment to its light source.
3. Wait 5-7 days before removing the items and revealing your pattern. You can carefully check the progress of your pattern by lifting up your objects to peek and see if the grass has changed color. Depending on your growing conditions, it may take less than 5 days or more than 7 to express your pattern

Going further

Using the same method outlined here you can create giant patterns on lawns and fields outdoors. No need to wait for the grass to grow if you're working with an existing lawn and your shapes can be much bigger and more dramatic. Check out the *Playing with Light: Temporary Lawn Patterns Created with the Effects of the Sun* for more project ideas.



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Cornell Garden-Based Learning Program website: www.hort.cornell.edu/gbl