

Exploring Photosynthesis



The Challenge:

To observe how the amount of light a plant gets can change its growth and appearance

You will need: (enough for each student):
One packet of seeds (lettuce, radish, herb), 3 plastic cups (6 oz), potting soil, water (8 oz), three locations (full sun, indirect sun, and no sun), notebook, pencil

Have you ever wondered why many plants are green? Plants get their green color from something called **chlorophyll**. Plants need sunlight to go through a process called **photosynthesis** during which chlorophyll is made!

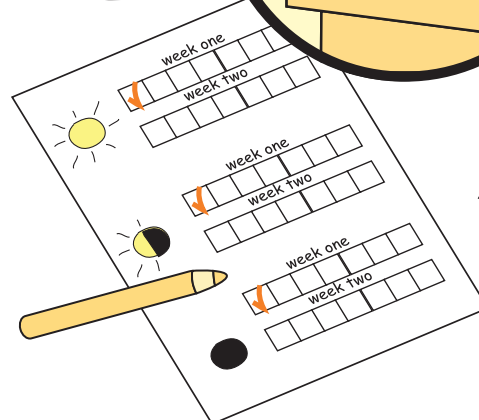
1. Fill the three plastic cups roughly $\frac{3}{4}$ of the way with potting soil.
2. Sprinkle 10 seeds evenly around the top of each soil cup.
3. Place a thin layer of soil no thicker than $\frac{1}{8}$ of an inch over the seeds.
4. Water each cup until the soil is moist.
5. Place one of the plant cups in full or direct sunlight, like a sunny window, one cup in a location that gets some sun, like a bookshelf that gets sun indirectly from the kitchen window, and one cup in a location that gets little to no sun, like inside a shut drawer.
6. For two weeks keep the soil in all three cups moist by giving each the same amount of water daily. Count how many sprouts are in each cup daily and record your findings.



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What Do You Think?

Which cup do you predict will sprout the most seeds? Which cup do you think will sprout the fewest seeds? Why?
What did you notice about the seeds that sprouted in the cup placed in full sun? Were the sprouts similar or different to the sprouts in the cup that was not exposed to sun?
Do you think all the sprouts contained the same amount of chlorophyll? Why or why not?

PARENT PAGE

Your child was a scientist today – making hypotheses, solving problems, measuring, recording data, learning about veggies and fruits, and eating their experiments!



Chlorophyll helps plants use sunlight to make their own food, a process known as photosynthesis. Chlorophyll helps humans, too! Chlorophyll gives green plants their color and is a type of phytochemical (think FIGHT-o-chemical) which promotes health and prevents diseases. To get all the benefits of chlorophyll, choose dark green veggies such as spinach, kale, broccoli, collard greens, peas, and green beans -- the darker the green the plant, the more chlorophyll it has. So, eat your greens!

-- Sarah Minkow MS, RD



Have you ever seen leaves change color during the fall season? Chlorophyll and other plant pigments play a key role in this process. As the weather becomes cooler and leaves are exposed to less sunlight, chlorophyll production slows. As the chlorophyll breaks down, the green color disappears from the leaves and red and yellow pigments become visible.



At the Library



Explore the seasons and the beautiful colors they bring with these green reads! Green is a Chile Pepper by Roseanne Greenfield Thong. Chronicle Books, 2016. Green on Green by Diane White. Beach Lane Books, 2020.

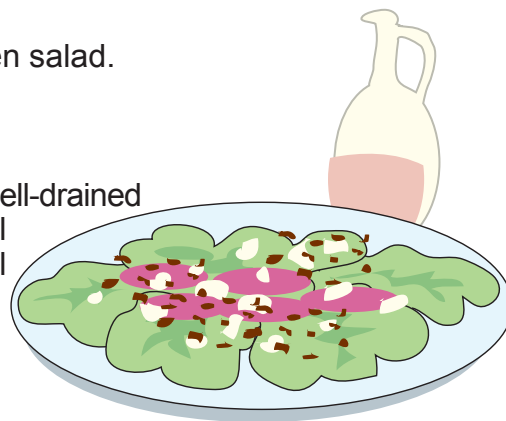
Spinach Salad with Beets, Walnuts and Goat Cheese

Observe chlorophyll on your plate with this tasty green salad.

Ingredients

- 1 bag (5 oz.) baby spinach leaves (4 cups packed)
- 1 can (14.5 oz.) Del Monte® Sliced or Diced Beets, well-drained
- 4 oz. crumbled goat cheese or feta cheese, optional
- 1/2 cup coarsely chopped walnuts, toasted, optional
- 1/4 cup bottled balsamic vinaigrette
- Freshly ground black pepper, optional

Arrange spinach on four salad plates. Top with beets, cheese and walnuts. Drizzle 1 Tbsp. dressing over each serving. Serve with pepper, if desired.



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Museum Partner: Saint Louis Science Center

GrowingGreat is a California nonprofit with the mission to empower children to make healthy food choices through hands-on science and garden education. Does your school have a garden or nutrition education program? Email info@growinggreat.org for more information.

