# Spinach

**GRADE 2-3**

**Month: May**
**Time Required: 30 minutes**
**Alternative Tastings: Kale**

## Lesson Goals

- ❑ Students will increase their knowledge of fruits and vegetables.
- ❑ Students will learn to try new fruits and vegetables and increase their preference for them.
- ❑ Students will learn that their peers like to eat fruits and vegetables.
- ❑ Students will learn how to ask their parents/caregivers for the fruits and vegetables tasted in class.

## Lesson Objectives

- ❑ Students will be able to name community members who make and provide food.
- ❑ Students will be able to describe the function of leaves.

## Materials

- ❑ Flipchart paper and markers
- ❑ Bag of leaves collected from various trees and garden plants
- ❑ Photosynthesis image (attached)
- ❑ Fresh spinach (optional: dressing)
- ❑ Napkins or paper plates
- ❑ Photosynthesis recipe cards; print one per student (attached)
- ❑ Optional book: “Before We Eat”

## Preparation

- ❑ Print attached photosynthesis recipe cards and cut in half; prepare one per student.
- ❑ Collect 25-30 leaves outdoors, from various trees or garden plants (examples: kale, collards, spinach, maple, oak, lettuces, cabbage, herbs, etc.).

## Recommended Books

“Water, Weed, and Wait” by Edith Hope Fine
“Sylvia’s Spinach” by Katherine Pryor
“Our School Garden!” by Rick Swann
“Before We Eat” by Pat Brisson

## Standards Connection

This lesson supports the following Iowa Core standards.

**Health Education**
Standards 1, 2, 3, 4, 5, 7, 8

**Science**
Second grade - 2-LS2-1
Plants depend on water and light

Third grade - 3-LS1-1
LS1.B: Growth and development of organisms

## Lesson Checklist

- ❑ Physical Activity
- ❑ Tasting
- ❑ Voting
- ❑ “Asking” Discussion
- ❑ Newsletters, Bingo cards, Stickers, Incentives
- ❑ Science Connection: Photosynthesis

## Engage

**1. Introduction:** *2 minutes*

*The "Introduction" section is a time to introduce yourself, recap previous lessons, establish norms, or introduce the day's lesson.*

**2. Engage Activity:** *8 minutes*

*The "Engage Activity" section has two purposes: 1) to activate students' prior knowledge and 2) to engage every student.*

Gather students in a circle. *Ask, Who helps you get the food you eat? Think in your head and when I say the magic word, "leaves," share your thoughts with a partner. "Leaves."* Give students a minute or so to take turns sharing with a partner. Randomly select a few students to share their responses aloud, and begin recording these responses on large flipchart paper, the board, or doc-camera. As you record ideas and support student brainstorming, ask students, *Who prepares the food we eat at school? Who helps with the food we get at a store? Who makes the food we eat at a restaurant?* Adapt the questions and conversations to fit your school and broader community. Review the list as a class.

*Now, let's say thank you! Pick someone on this list and when I say our magic word "leaves," we'll all say "thank you" and then you say who you're thinking of. Ready? "Leaves."* As a class, *Thank you _____! It is great that so many people in our community help make the food we eat. Today, we're going to learn about how leaves make food for plants.*

Book Option: If time allows, consider reading a book such as Pat Brisson's "*Before We Eat*." Ask, *Who are the people who helped make the dinner that the people ate? Who else helped?* (Adapted from FoodCorps Lesson: People Who Feed Us)

Sample list of community food helpers:

- Cafeteria cook
- Corner store clerk
- Family members who cook
- Farmer, gardener
- Fisher
- Food packager
- Food pantry volunteer
- Food truck driver
- Grocery store clerk
- Restaurant cook

## Explore

**3. Experiential Learning:** *10 minutes*

*This is a time for students to familiarize themselves with what you'll be tasting. The best way to do this is through a hands-on or exploratory activity.*

## Explore

Sitting in a circle, pass out an assortment of leaves to students; one per student. Leaves can be collected outside on trees or from the garden (examples: kale, collards, spinach, maple, oak, lettuces, cabbage, herbs, etc.). Ask students to examine their leaves. *What do you see? What does the leaf feel and smell like? Where do they think the leaves came from?*

- Option: break the classroom into 2 groups. The classroom teacher can support one group while the PABS educator works with the other.

Tell students, *We're all holding leaves. These leaves came from different plants, such as* (share plant source; consider sharing pictures of full plants over the doc-cam). *Leaves make food for plants. What do leaves do?* (choral response: *make food for plants*). *This process is called* ***photosynthesis***. Write out and repeat vocabulary word: photosynthesis. Show simple photosynthesis image (attached). *Leaves are like the kitchen of the plant - where the food is made. Leaves use a special three-ingredient recipe to make plant food: sunlight + water + air. Leaves absorb sunlight and air. Then, leaves combine sunlight and air with water from the roots, and turn it into food for the plant to eat.* Repeat these three ingredients with kinesthetic movements several times:

- *Sunlight* (wave hands and fingers overhead)
- *Water* (rain hands down from overhead to the ground)
- *Air* (put hands around mouth and blow out).

*There are many types of leaves that we can eat. Today, we're going to try a leaf called spinach.* With student or teacher helpers, pass out photosynthesis recipe cards (attached) and tasting materials. *While we pass out spinach samples, fill in the blanks on your photosynthesis recipe card* (leave photosynthesis image up on doc-camera).

**4. Tasting Activity:** *2 minutes*
*The "Tasting Activity" section is when students get to try the fruit or vegetable. Don't forget to review your food tasting norms (for example, "don't yuck my yum").*

Before students receive samples, be sure to review your brave tasting rules (for example, don't yuck my yum, we all try together, etc.). As students receive their samples, ask them to use their senses while they wait.

## Reflect

**5. Voting Activity:** *2 minutes*
*This is a time for students to give their opinion on what they tried!*

As students taste the spinach, have them vote with their thumbs. Observe their voting and offer positive reinforcement regarding the Brave Taster Rules. If a student dislikes the tasting, perhaps ask what they would change about it.

**6. Reflection:** 6 minutes
*Reflection is one of the most important processes for students to process and retain new information or experiences. Give students an opportunity to reflect on what they've learned or tried in your lesson. This is an excellent place for students to practice the "Asking Discussion."*

## Reflect (cont'd)

Make a thank you card for the folks who feed us!
Have students write and color a thank you card for someone on the list you made at the beginning of the lesson. Consider asking students how they will get their cards to the person they're thankful for, and if you can support them in any way.
(Note: Celebrate National School Lunch Hero Day. Consider organizing a classroom or school wide "thank you!" for school food service staff.)

Choral Response:
*I'm going to ask a question and you're going to quietly think to yourself. When I say "leaves," you can say your answer aloud. Let's practice…*

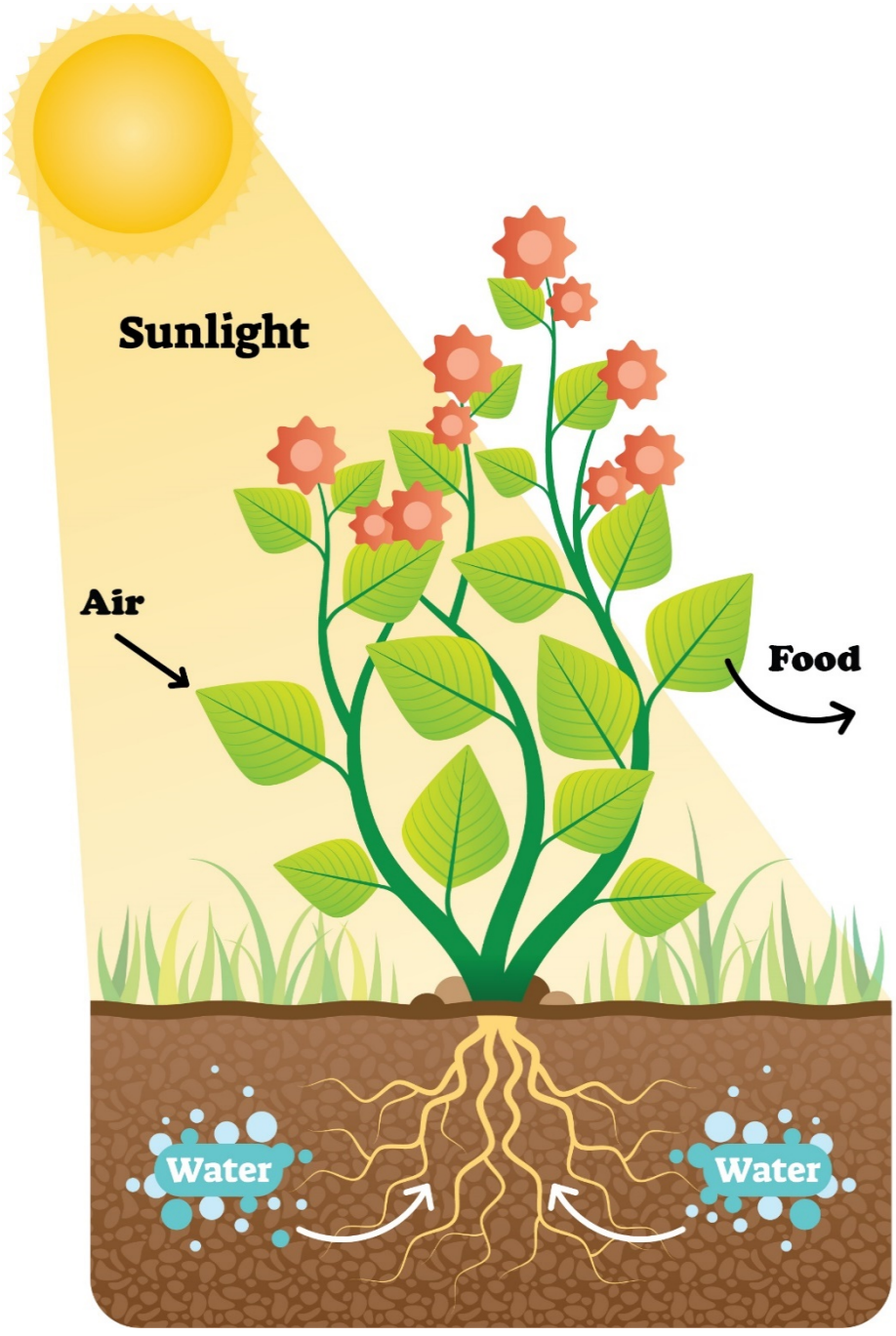
- *What month is it?* (May)
- *Whose class am I in?*
- *What food did we try today?* (Spinach)
- *What plant part is spinach?* (A leaf)
- *What are the three ingredients plants use to make food through photosynthesis?* (Sunshine, water, air)

Asking Discussion:
*Raise your hand if you're excited to go home and tell your family about tasting spinach.*

- Ask a student with a raised hand: *if you wanted to try this at home, how might you ask your grown-ups?*
- You might also ask additional questions like, *where could you buy spinach?*

*Leave newsletters, incentives, stickers, and BINGO sheets with the teachers to pass out.

Leaves make food through **Photosynthesis.**



# **Photosynthesis:** A Recipe for Plant Food!

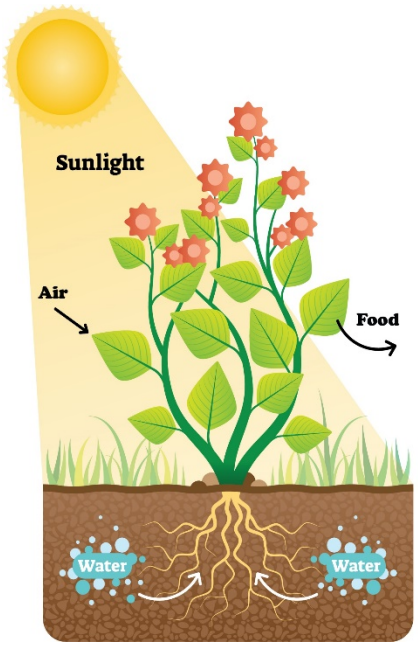
## Ingredients:

1. _____

2. _____

3. _____

Plant food is made in the _____.

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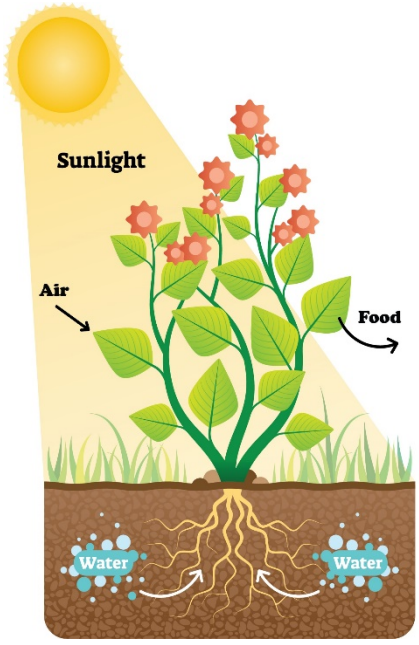


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# Additional Materials

## Physical Activity

"Stories in Motion: Working in the Garden" (page 54). Or "Shakedown" (page 13). More ideas for physical activity are available at https://idph.iowa.gov/inn/play-your-way/brain-breaks.

## What You Need to Know About Spinach

- Choose spinach with fresh, crisp green leaves with no spots or signs of damage.
- Spinach is a dark green vegetable. While all lettuces are healthy, darker leafy greens generally offer more nutrition (e.g., spinach v. iceberg lettuce).
- Spinach is available fresh, frozen and canned.
- Wash fresh spinach under clean, running water before eating. Bagged spinach is pre-washed and ready to eat.
- Spinach is an annual plant, so it must be planted each year.
- Spinach can grow in Iowa and grows best in cool, damp weather. Peak seasons are spring and fall.

## Facts About Spinach

- Spinach originated in Persia (modern Iran). It was not commonly eaten in the U.S. until the early 19th century.
- Spinach was the first frozen vegetable available commercially.
- Many Americans associate spinach with Popeye, a 1929 cartoon character who ate spinach to gain his strength.
- Annual consumption of spinach increased drastically from 1992 to 2002 according to USDA's Economic Research Service, mostly due to availability of pre-cut, bagged spinach.
- California produces the most spinach grown for commercial use in the U.S. Other states that produce much of the commercially grown spinach are Arizona, New Jersey and Texas.

## Health Connection

- Spinach is high in vitamin C, which helps to heal and protect the body. Reinforce with defense shield and cross arms in front of chest.
- Spinach is high in Vitamin A, which is important for eyes, skin and growth. Reinforce with super goggles and make circles with hands over eyes.
- Spinach is an excellent source of fiber, which helps with digestion and helps us feel full longer. Reinforce by rubbing stomach.

## References and Resources

https://spendsmart.extension.iastate.edu/produce-item/greenslettuce/
https://snaped.fns.usda.gov/seasonal-produce-guide/spinach
https://harvestofthemonth.cdph.ca.gov/Pages/default.aspx
https://www.youtube.com/watch?v=w3yIT3yCIJ0
https://www.cdc.gov/healthyschools/physicalactivity/guidelines.htm
http://togethercounts.com/wp-content/uploads/2017/11/K-2_Curriculum_ALL-1.pdf
https://fns-prod.azureedge.net/sites/default/files/growit_book3.pdf
https://lifelab.org/2013/04/garden-jokes/

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