



**SOUTH DAKOTA STATE  
UNIVERSITY EXTENSION**

# Spinach

**In season:**



**Summer**

## Lesson Plan

### Objectives

Participants will:

- identify spinach as a vegetable and the part of the plant it comes from.
- increase knowledge in harvesting, storage and use of spinach.
- demonstrate use of spinach in a recipe.

### Items Needed for the Lesson

- MyPlate poster
- Parts of a Plant visual
- Regional chart of in-season fruits and vegetables
- Spinach Nutrition Information sheet
- Vegetable Subgroups visual

### Handouts or Take Home Items

- Pick It! Try It! Like It! Preserve It! fact sheet

### Recipe Choices

- Colorful Quesadillas
- Chicken Florentine

### Cooking and Food Safety Skill Sheets

- Handwashing
- Washing Fruits and Vegetables
- Knife Safety and Cutting Boards
- Stove Top Safety
- Measuring Liquid and Dry Ingredients

### Other Cooking and Food Safety Skills

- Storing fresh vegetables
- Kitchen terms - grate and sauté

### Supplies for Spinach Lesson

- Chicken Florentine
  - » Measuring cups
  - » Measuring spoons
  - » Cutting board
  - » Knife
  - » Liquid measuring cup
  - » Grater
  - » Skillet and lid
  - » Spatula
  - » Strainer
  - » Baking dish
  - » Pot holders
  - » Oven
- Colorful Quesadillas
  - » Table knife
  - » Small bowl
  - » Mixing spoon
  - » Measuring cups
  - » Measuring spoons
  - » Skillet
  - » Spatula
  - » Knife
  - » Cutting board
  - » Optional-aluminum foil

### Notes

- If preparing Chicken Florentine, preheat oven before starting lesson.

What You Say:	What You Do:
<p>Every class we are going to learn about a different fruit or vegetable. I am going to give you some clues and I want you to try to think of what it is. After each clue, raise your hand if you think you know what it is.</p> <ul style="list-style-type: none"> <li>• It was brought to North America by colonists.</li> <li>• Popeye received his strength from eating it out of a can.</li> <li>• It can be harvested in spring or fall.</li> </ul> <p>(Answer: Spinach.)</p>	<ul style="list-style-type: none"> <li>• Name off each clue; allow a few guesses before moving on to the next clue.</li> <li>• After someone guesses the answer, or you tell them, show them visuals of spinach.</li> </ul>
<p>We should be filling <math>\frac{1}{2}</math> our plates with fruits and vegetables. Depending on your age and gender, we should be eating between 1-4 cups of vegetable a day.</p>	<ul style="list-style-type: none"> <li>• Point to MyPlate poster.</li> <li>• Refer to the Daily Recommendations visual for specific amounts.</li> </ul>
<p>Different vegetables come from different parts of the plant. Vegetables are either a root, stem, leaf, fruit, flower or seed.</p> <p>What part of the plant do you think spinach is? (Answer: Leaf.)</p> <p>Do you know why plants need their leaves? (Answer: They catch sunlight and turn it into food for the plant (photosynthesis). There are also small holes in the leaves that allow air and water to go in and out of the plant, and small veins in the leaves that carry water.)</p>	<ul style="list-style-type: none"> <li>• Show Parts of Plant visual, call on people to answer questions.</li> </ul>
<p>Spinach can be harvested in spring and fall. If planting for a spring harvest, seeds can be started indoors around Feb. 23-March 8. Seedlings can be transported April 5-19 (or when the ground is workable), or the seeds can be planted directly into the ground during this time as well.</p> <p>If planting for a fall harvest, start seeds indoors June 15-July 30. Transplant July 15-Aug. 29, or plant seeds directly during this time.</p> <p>Spinach leaves are best if harvested when the leaves are young. Depending on the variety, it takes approximately 40 days to harvest. The outer leaves can be picked when they are approximately 3 inches long, this will allow the younger leaves to develop, and they can be harvested later.</p> <p>If harvesting the entire plant, cut the plant just below the soil surface. Make sure to harvest the entire plant before the seed stalk develops. The leaves will break down quickly once the plant begins to flower.</p>	<ul style="list-style-type: none"> <li>• If you are using fresh spinach, show the group.</li> </ul>

What You Say:	What You Do:
<p>When purchasing spinach look for fresh, green leaves that are crisp. The leaves should be dull green on top and bright green underneath. Avoid purchasing limp, damaged or spotted leaves.</p> <p>Spinach can also be bought canned or frozen.</p>	
<p>To clean freshly picked spinach, tear off the stems, place the leaves in a large bowl of water. Let the dirt and debris fall to the bottom of the bowl and lift the leaves out of the water. Blot the leaves dry with paper towels if eating raw.</p> <p>To store fresh spinach, poke small holes in a plastic bag and store in the vegetable crisper (separate from fruits) in the refrigerator. Spinach can be stored for up to 4 days in the refrigerator.</p>	<ul style="list-style-type: none"> <li>• Can demonstrate how to clean if using fresh picked spinach and short-term storage if using fresh spinach.</li> </ul>
<p>Why should we eat spinach? (Possible answers: Low in calories, vitamin A, vitamin K, rich in iron, calcium, and protein.)</p>	<ul style="list-style-type: none"> <li>• Discuss benefits of eating spinach, use Spinach Nutrition Information as reference.</li> </ul>
<p>What are different ways you can eat spinach? (Possible answers: Raw in salads or sandwiches, steamed, boiled, sautéed, stir-fried, microwaved or added to soups and smoothies.)</p>	<ul style="list-style-type: none"> <li>• Discuss different ways to eat spinach.</li> </ul>
<p>Are you ready to try out a spinach recipe?</p> <p>What is the first thing we always do before preparing food? (Answer: Wash hands.)</p>	<ul style="list-style-type: none"> <li>• Call on someone for the answer.</li> <li>• Refer to Handwashing skill sheet.</li> </ul>

## Use this page if you are going to prepare Chicken Florentine

### Equipment Needed

- |                                                                                                                                          |                                                                                                                                          |                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Measuring cups</li> <li>• Measuring spoons</li> <li>• Cutting board</li> <li>• Knife</li> </ul> | <ul style="list-style-type: none"> <li>• Liquid measuring cup</li> <li>• Grater</li> <li>• Skillet and lid</li> <li>• Spatula</li> </ul> | <ul style="list-style-type: none"> <li>• Strainer</li> <li>• Baking dish</li> <li>• Pot holders</li> <li>• Oven</li> </ul> |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|

What You Say:	What You Do:
<p>Today we are going to make Chicken Florentine. If we look at the ingredients in this recipe, how many food groups do we have? Which ones? (Answer: 2. Vegetable – spinach and onion; protein – chicken.)</p> <p>This recipe uses fresh or frozen spinach. If using frozen, make sure to thaw in the refrigerator or use the defrost setting on the microwave. Drain the spinach well before using.</p>	<ul style="list-style-type: none"> <li>• Pass out recipes, read recipe aloud.</li> <li>• Call on people.</li> </ul>
<p>We will be using the stove top and oven for our recipe today.</p>	<ul style="list-style-type: none"> <li>• Review Stove Top Safety and Oven Uses and Safety skill sheets.</li> </ul>
<p>When we use fresh fruits or vegetables remember to rinse them under cold running water. The lemons will need to be washed before grating them. We use the skin (the zest) of the lemon for flavor, when grating lemons (or other citrus) make sure to only grate the colored part of the peel, the white part (the rind) will taste bitter.</p>	
<p>We will need to chop up our onion before cooking.</p>	<ul style="list-style-type: none"> <li>• Review Knife Safety and Cutting Boards skill sheet.</li> </ul>
<p>Sauté means to cook or brown food in a small amount of hot fat. We are using olive oil as our fat.</p>	
<p>If we have leftovers from this recipe, what should we do with them? (Answer: Place in a container with a lid in the refrigerator within 2 hours.)</p>	<ul style="list-style-type: none"> <li>• Call on people.</li> <li>• Prepare recipe with participants.</li> </ul>



## Use this page if you are going to prepare Colorful Quesadillas

### Equipment Needed

- Table knife
- Small bowl
- Mixing spoon
- Measuring cups
- Measuring spoons
- Skillet
- Spatula
- Knife
- Cutting board
- Optional-aluminum foil

What You Say:	What You Do:
<p>Today we are going to make Colorful Quesadillas.</p> <p>How many food groups do we have in this recipe? (Answer: 3. Dairy – low-fat cheese, vegetable – sweet red pepper, spinach leaves, grain – tortillas)</p>	<ul style="list-style-type: none"> <li>• Pass out the recipes.</li> <li>• Call on people or prompt after naming out each ingredient, point to each food group you discuss.</li> </ul>
<p>As we talked about earlier, when we look at MyPlate, <math>\frac{1}{2}</math> our plate is fruits and vegetables. We should be eating between 1-4 cups of vegetables per day depending on our age and gender.</p>	<ul style="list-style-type: none"> <li>• Refer to the Daily Recommendations visual for age and gender specific recommendations.</li> </ul>
<p>There are 5 subgroups of vegetables: dark green, red and orange, beans and peas, starchy and others. We need to make sure we are eating vegetables from each of these groups because each have different vitamins and nutrients in them.</p> <p>How many subgroups of vegetables are in this recipe? (Answer: 2. Spinach is in the dark green subgroup, sweet red peppers are in the red/orange subgroup.)</p> <p>It is important to eat a rainbow of fruits and vegetables to make sure that we are getting all of the vitamins and minerals our bodies need.</p>	<ul style="list-style-type: none"> <li>• Show Vegetable Subgroups visual and talk about vegetables in the different groups.</li> <li>• Call on people to answer.</li> </ul>
<p>We will be using a skillet today to prepare our quesadillas.</p>	<ul style="list-style-type: none"> <li>• Refer to Stove Top Safety skill sheet; if using an electric skillet review safety precautions of that.</li> </ul>

## Visuals



**Young Spinach Plants**



**Freshly Harvested Spinach Leaves**



**Spinach Growing in a Raised Bed**



**Salad Using Fresh Spinach**

## Spinach Nutrition Information

Types	Serving Size/ Weight in grams	Calories	Fiber (g)	Vitamin A (International Units)	Vitamin C (mg)	Potassium (mg)	Folate (mcg)
<b>Spinach, raw</b>	1 cup, packed leaves; 30 g	7	0.7	2813	8	167	58
<b>Spinach, cooked</b>	½ cup; 90 g	21	2.2	9433	9	419	131
<b>Daily Recommendations</b> <b>RDA=Recommended daily allowance</b> <b>AI=Adequate intake</b>	1-4 cup servings of vegetables per day depending on age	Varies according to age and activity level	AI (depending on age) ranges from 14-33.6 g	RDA (depending on age) ranges from 300-900 mg	RDA (depending on age) ranges from 25-90 mg	AI (depending on age) ranges from 3,000-4,700 mg)	RDA (depending on age) ranges from 150-400 mcg)

# Spinach Sources

## Recipe

- [myplate.gov/recipes/supplemental-nutrition-assistance-program-snap/colorful-quesadillas](https://myplate.gov/recipes/supplemental-nutrition-assistance-program-snap/colorful-quesadillas)

## Information

- [extension.illinois.edu/veggies/spinach.cfm](https://extension.illinois.edu/veggies/spinach.cfm)
- SD Harvest Calendar – [pickyourown.org/SDharvestcalendar.htm](https://pickyourown.org/SDharvestcalendar.htm)
- How long to store – [foodsafety.gov/keep/foodkeeperapp/index.html](https://foodsafety.gov/keep/foodkeeperapp/index.html)
- How to store – [extension.purdue.edu/foodlink/food.php?food=spinach#:~:text=Store%20spinach%20leaves%20in%20a,water%20and%20squeeze%20it%20dry](https://extension.purdue.edu/foodlink/food.php?food=spinach#:~:text=Store%20spinach%20leaves%20in%20a,water%20and%20squeeze%20it%20dry)
- Cooking Glossary – [reallifegoodfood.umn.edu/kitchen-skills-and-tips/cooking-terms-glossary](https://reallifegoodfood.umn.edu/kitchen-skills-and-tips/cooking-terms-glossary)
- Daily Nutrition Goals – [dietaryguidelines.gov/resources/2020-2025-dietary-guidelines-online-materials](https://dietaryguidelines.gov/resources/2020-2025-dietary-guidelines-online-materials)

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UNIVERSITY EXTENSION

In season:



Summer

# Spinach

## Pick it!

Select green, crisp leaves with fresh fragrance. Avoid limp, damaged or spotted leaves.

Leave should be dull green on top and bright green on the underside.

Available all year round.

Dry and pack fresh spinach loosely in a plastic bag and store for 3-4 days in the refrigerator crisper.

## Try it!

Use cooked or raw in salads and sandwiches.

Can be steamed, boiled, microwaved, sautéed or stir-fried.

Tear off the stem and separate the leaves. Place in a large bowl of water; let dirt and debris drift to the bottom of the water and remove leaves by lifting out. Repeat until leaves are clean.

## Types of Spinach

**Smooth leaf:** Flat, smooth, easy to clean; picked young as baby spinach for salads

**Semi-Savoy:** Crinkled leaves with some texture; not difficult to clean

**Savoy:** Dark green, crinkled, curly leaves; sold in fresh bunches for salads

## Did you know...

Vitamin K, known as the clotting vitamin, is found in green leafy vegetables and made by the bacteria that line the gastrointestinal tract.





**Like it!**

## Chicken Florentine

### Ingredients

- 10 ounces package frozen, chopped spinach, thawed and drained well
- 1 teaspoon dried thyme leaves, crushed
- 1 Tablespoon olive oil
- 2 teaspoons garlic powder
- ½ cup onion, finely chopped
- 1 Tablespoon white flour
- 1 cup low-sodium chicken broth
- 3 cups cooked chicken, cubed
- 2 Tablespoons grated lemon peel

### Directions

1. Preheat oven to 300 degrees F.
2. Put spinach in a large skillet, cover and cook over medium heat until heated through.
3. Remove and drain liquid.
4. Heat thyme, oil, garlic and onion until onion is transparent.
5. Add broth and heat until thick. Add cooked spinach.
6. Put chicken in a baking dish and add spinach sauce and lemon peel.
7. Place in oven and cook for 10 minutes.

Yields 4 servings

Nutrition Facts per Serving:  
Calories 220; Fat 7g; Cholesterol 75mg; Sodium 150mg;  
Carbs 8g

Sources: [urbanext.illinois.edu/](http://urbanext.illinois.edu/)

## Colorful Quesadilla

### Ingredients

- 8 ounces fat-free cream cheese
- ¼ teaspoon garlic powder
- 8 6-inch flour tortillas
- 1 cup sweet red pepper, chopped
- 1 cup low-fat shredded cheese
- 2 cups spinach leaves

### Directions

1. In a small bowl, mix cream cheese and garlic powder.
2. On each tortilla, spread 2 Tablespoons of the cream cheese mixture and add 2 Tablespoons bell pepper, ¼ cup spinach, and 2 Tablespoons cheese on ½ of the tortilla. And fold in half.
3. Heat a skillet over medium heat.
4. When skillet is hot, cook tortillas for 1-2 minutes on each side or until golden brown.
5. Remove and cut into 4 wedges.

Yields 8 servings

Nutrition Facts per Serving:  
Total Calories 156; Total Fat 4g, Saturated Fat 1g;  
Cholesterol 6mg; Sodium 483mg; Carbohydrates 19g,  
Dietary Fiber 2g, Total Sugars 3g, Added Sugars included  
0g; Protein 11g

Sources: [myplate.gov/recipes/supplemental-nutrition-assistance-program-snap/colorful-quesadillas](https://myplate.gov/recipes/supplemental-nutrition-assistance-program-snap/colorful-quesadillas)

**Find more recipes  
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