



Seasonal Gardening: Kale

Part 2

Health Standards Addressed

Kindergarten 1.1.N Name a variety of healthy foods and explain why they are necessary for good health.

1.2.N Identify a variety of healthy snacks.

7.1.N Select nutritious snacks.

First Grade: 1.3.G Identify a variety of behaviors that promote healthy growth and development.

Second Grade: 1.1.N Name a variety of healthy foods and explain why they are necessary for good health.

1.2.N Identify a variety of healthy snacks.

7.4.N Examine the criteria for choosing a nutritious snack.

Third Grade: 5.1.G Examine why a variety of behaviors promote healthy growth and development.

Fourth Grade: 1.1.N Identify and define key nutrients and their functions.

7.1.N Practice how to take personal responsibility for eating healthy foods.

Fifth Grade: 1.6.N Differentiate between more-nutritious and less-nutritious beverages and snacks.

5.1.N Use a decision-making process to identify healthy foods for meals and snacks.

7.1.N Identify ways to choose healthy snacks based on current research-based guidelines.

8.1.N Encourage and promote healthy eating and increased physical activity opportunities at school and in the community.

CCSS Math Standards Addressed

SMP 1 Make sense of problems and persevere in solving them.

SMP 2 Reason abstractly and quantitatively.

SMP 3 Construct viable arguments and critique the reasoning of others.

SMP 4 Model with mathematics.

SMP 6 Attend to precision.



Materials

Kale from Harvest of the Month (uncut), knife, student copies of Kale article (optional, 3rd-5th)

Success Skills

- **Collaboration** with their peers during their discussion of food and food choices.
- **Communication** of ideas with peers as students discuss the topic.
- **Creativity** as students illustrate and write about what they have learned about food and food choices.



Challenging Question

Does learning about kale fit the Seed to Table Cycle?

(K-5) Access Prior Knowledge

Remind students that food (vegetables and fruits) are grown and harvested.

Review: A vegetable is considered any part of herbaceous plants eaten as food by humans. Given this general rule of thumb, vegetables can include leaves (lettuce), stems (asparagus), roots (carrots), flowers (broccoli), bulbs (garlic), seeds (peas and beans) and of course the botanical fruits like cucumbers, squash, and pumpkins.



Explore

Kindergarten and First Grade Explore

Observe: Look at this kale. (Hold up the kale.)

Ask: Do you think there are any seeds in this kale plant?

- Cut the kale in small pieces. What does kale look like?

Explain: Most people eat kale *raw*, but they also cook kale.

- Pass out a taste of the kale to every student. Generate some words students can use to describe the taste of kale.

Ask: What are some words that describe the taste of kale? How else could you describe the kale?

Ask: How do vegetables get planted and grown if there are no seeds?

Kindergarten and First Grade Revision and Reflection

- In their response journals, have students draw a picture of the kale.
- Have students respond to this prompt. How did the kale taste?
- Write the sentence: The kale tasted _____. Teachers can use a highlighter to write the words for students or students may write independently.

Second and Third Grade Explore

Observe: Look at this kale. (Hold up the kale.)

Ask: Do you think there are any seeds in this kale plant?

- Cut the kale in small pieces. What does kale look like?

Explain: Most people eat kale *raw*, but they also cook kale.



- Pass out a taste of the kale to every student. Generate some words students can use to describe the taste of kale.

Ask: What are some words that describe the taste of kale? How else could you describe the kale?

Ask: How do vegetables get planted and grown if there are no seeds?

- Have students talk in their table groups to try to find an explanation.

Second and Third Grade Revision and Reflection

Students respond to the following questions in their journals:

- How do vegetables get planted and grown if there are no seeds?
- Do you think kale would taste different if it was not raw?

Fourth and Fifth Grade Explore

Observe: Look at this kale. (Hold up the kale.)

Ask: Do you think there are any seeds in this kale plant?

- Cut the kale in small pieces. What does kale look like?

Explain: Most people eat kale *raw*, but they also cook kale.

- Pass out a taste of the kale to every student. Generate some words students can use to describe the taste of kale.

Ask: What are some words that describe the taste of kale? How else could you describe the kale?

Ask: How do vegetables get planted and grown if there are no seeds?

- Have students talk in their table groups to try to find an explanation.

Fourth and Fifth Grade Revision and Reflection

Students respond to the following questions in their journals:

- How do vegetables get planted and grown if there are no seeds?
- Do you think kale would taste different if it was not raw?
- Do you think making good food choices will make a difference in your health as an adult?

The Truth about Kale

Move over Popeye and make room for the “queen of greens,” kale. Gaining in popularity, kale is an amazing vegetable being recognized for its exceptional nutrient richness, health benefits, and delicious flavor.

Eating a variety of natural, unprocessed vegetables can do wonders for your health, but choosing super-nutritious kale on a regular basis may provide significant health benefits, including cancer protection and lowered cholesterol.

Kale, also known as borecole, is one of the healthiest vegetables on the planet. A leafy green, kale is available in curly, ornamental, or dinosaur varieties. It belongs to the Brassica family that includes cruciferous vegetables such as cabbage, collards, broccoli, and Brussels sprouts.

What makes kale so exceptional? Here is why it’s a superstar vegetable— and ways to work it into your diet.

Kale is a Nutritional Powerhouse

One cup of chopped kale contains 33 calories and 9% of the daily value of calcium, 206% of vitamin A, 134% of vitamin C, and a whopping 684% of vitamin K. It is also a good source of minerals copper, potassium, iron, manganese, and phosphorus.

Kale’s health benefits are primarily linked to the high concentration and excellent source of antioxidant vitamins A, C, and K—and sulphur-containing phytonutrients. Carotenoids and flavonoids are the specific types of antioxidants associated with many of the anti-cancer health benefits. Kale is also rich in the eye-health promoting lutein and zeaxanthin compounds.

Beyond antioxidants, the fiber content of cruciferous kale binds bile acids and helps lower blood cholesterol levels and reduce the risk of heart disease, especially when kale is cooked instead of raw.

Super-Rich in Vitamin K

Eating a diet rich in the powerful antioxidant vitamin K can reduce the overall risk of developing or dying from cancer, according to a study in the *American Journal of Clinical Nutrition*. Vitamin K is abundant in kale but also found in parsley, spinach, collard greens, and animal products such as cheese.

Vitamin K is necessary for a wide variety of bodily functions, including normal blood clotting, antioxidant activity, and bone health.

But too much vitamin K can pose problems for some people. Anyone taking anticoagulants such as warfarin should avoid kale because the high level of vitamin K may interfere with the drugs. Consult your doctor before adding kale to your diet.

Kale might be a powerhouse of nutrients but is also contains oxalates, naturally occurring substances that can interfere with the absorption of calcium. Avoid eating calcium-rich foods like dairy at the same time as kale to prevent any problems.

<http://www.webmd.com/food-recipes/features/the-truth-about-kale>



