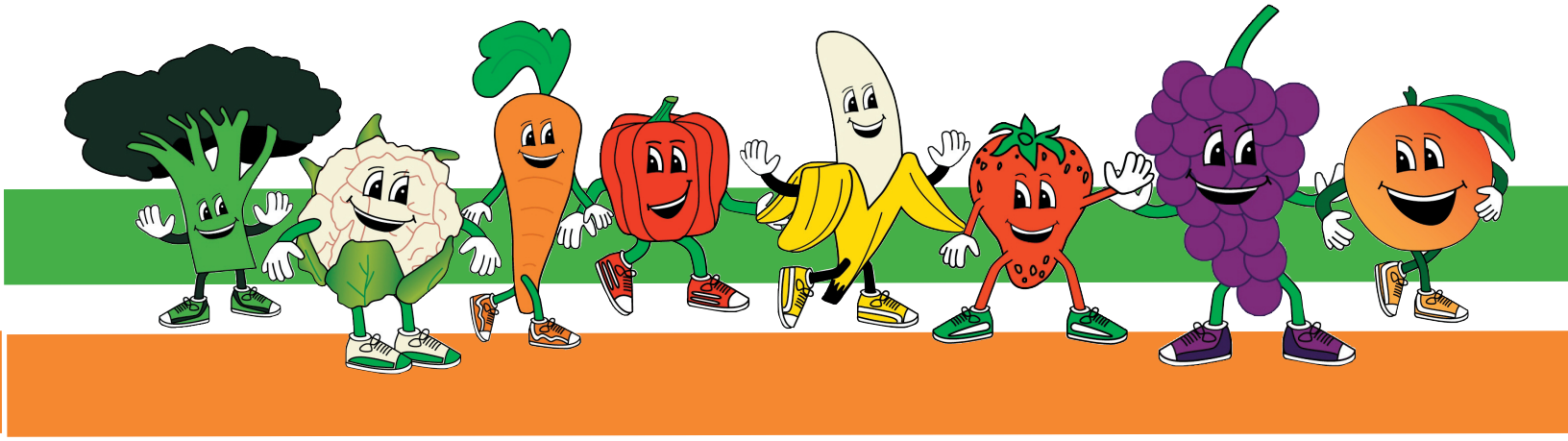
Nebraska
Fresh Fruit & Vegetable Program

Grade 5



Grade 5

Is It a Fruit or Veggie?

Math Objectives

- Developing fluency in adding and subtracting non-negative rational numbers.
- Develop flexibility in solving problems by selecting strategies and using mental computations, estimation, calculators or computers and paper and pencils.
- Identify, define, describe and accurately represent triangles, quadrilaterals and other polygons.

English Language Arts Objectives

- Compost a draft that elaborates on major ideas and adheres to the topic by using an appropriate organizational pattern that accomplishes the purpose of the writing task and effectively communicates its contents.

Materials Needed

- Large green pepper
- MyPyramid for Kids Poster

Teacher Resources

- *What foods are in the fruit group?*
- *What foods are in the vegetable group?*
- *MyPyramid for Kids*
- *Anatomy of MyPyramid*
- *Teaching MyPyramid*
- *Is It a Fruit or a Veggie?*

Handouts

- *Nutritional Seed Search*
- *How Does Your Garden Grow?*

Focus

Show the students a large green pepper and ask them to estimate how many seeds are inside. Instruct them to write the prediction in a sentence. "I predict there are _____seeds inside the pepper". Cut the pepper and remove all of the seeds. Give a portion of the seeds to each group and have them count the seeds by 10. Each group must write down their total and double check the number of seeds. Take the totals from each group and write them on the board. Add the numbers to see how many seeds were in the pepper.

Teacher Input

Using the teacher resources, *What foods are in the fruit group?*, *What foods are in the vegetable group?*, all three MyPyramid resources and *Is It a Fruit or a Veggie?*, discuss the difference between fruits and veggies with students.

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Adapted from North Carolina Nutrition Services

Talking points:

- One way to identify the difference between fruits and veggies is to look at MyPyramid for Kids. The green band represents veggies, such as tomatoes, green peppers, potatoes, corn and squash, and the red band represents fruits, such as apples, peaches, grapes and bananas.
- How fruits and veggies are defined, however, varies depending upon the person talking about them. A cook is likely to define a fruit or a veggie based on how it tastes (sweet or savory). A scientist, on the other hand, will define a fruit or a veggie based on the part of the plant from which it came; veggies are edible stems, leaves and roots and fruits are the fleshy material that covers a seed or seeds.
- Many foods that are considered veggies from the cooking perspective are actually fruits based on the scientific perspective. For example, tomatoes, cucumbers, beans (green beans), peas, green peppers, corn, eggplant and squash are all fruits.
- No matter how fruits or veggies are classified, it is important to eat many every day!
- To further their understanding of fruit and veggie definitions, relate what students ate from the USDA Fresh Fruit and Vegetable Program to this discussion. Ask students what they ate from the USDA Fresh Fruit and Vegetable Program today. Ask if it was a fruit or a veggie, according to MyPyramid. Ask how they would classify their fruit or veggie if they were scientists. Discuss how their answered varied.

Practice and Assessment

Direct students to write a paragraph about a fruit or veggie that they like to eat. Tell them to explain why they like the fruit or veggie, how it tastes and when they eat it. They can also write why it is a fruit or veggie.

Distribute the *Nutritional Seed Search* handout. Read the directions to the students. Ask the students if there are any fruits or veggies on the list that they have not eaten. Reinforce the importance of eating a variety of fruits and veggies.

Distribute the *How Does Your Garden Grow?* handout and instruct students to answer the questions.

Name: _____

Nutritional Seed Search

Directions: Look at the word puzzle. Find and circle sixteen foods that could be grown from seed in a home garden. The words may be written horizontally, vertically, diagonally or backwards. Number the sixteen kinds of seeds listed below in alphabetical order.

___tomato	___beans	___zucchini	___carrot
___watermelon	___pepper	___corn	___peas
___cucumber	___radish	___pumpkin	___cantaloupe
___squash	___lettuce	___okra	___turnip

S	R	E	R	W	A	T	E	R	M	E	L	O	N	V
C	A	N	T	E	L	O	U	P	E	D	S	A	E	P
U	D	B	E	T	Y	U	O	I	R	E	P	P	E	P
C	I	W	U	O	K	R	A	A	Q	W	E	R	T	Y
U	S	L	I	C	A	R	R	O	T	S	E	I	W	I
M	H	K	O	W	O	A	R	J	R	E	R	O	E	K
B	C	T	P	E	P	C	O	R	N	E	T	E	O	T
E	E	U	L	Z	I	U	V	J	I	H	Y	I	T	Y
R	S	R	E	X	U	Y	B	B	U	S	U	N	A	P
M	E	N	T	Z	T	R	N	E	Y	A	I	I	M	V
N	R	I	T	C	Y	E	M	A	T	U	O	H	O	B
O	Y	P	U	M	P	K	I	N	E	Q	P	C	T	N
I	U	T	C	Y	E	W	I	S	B	S	L	C	Z	M
P	I	I	E	T	R	E	O	R	V	I	M	U	W	I
A	S	F	T	H	U	I	O	O	N	M	T	Z	B	O

Nebraska Fresh Fruit and Vegetable Program
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Name: Answer Key

Nutritional Seed Search

Directions: Look at the word puzzle. Find and circle sixteen foods that could be grown from seed in a home garden. The words may be written horizontally, vertically, diagonally or backwards. Number the sixteen kinds of seeds listed below in alphabetical order.

13	**tomato**	**1**	**beans**	**16**	**zucchini**	**3**	**carrot**
15	**watermelon**	**9**	**pepper**	**4**	**corn**	**8**	**peas**
5	**cucumber**	**11**	**radish**	**10**	**pumpkin**	**2**	**cantaloupe**
12	**squash**	**6**	**lettuce**	**7**	**okra**	**14**	**turnip**

	R			W	A	T	E	R	M	E	L	O	N	
C	A	N	T	E	L	O	U	P	E		S	A	E	P
U	D								R	E	P	P	E	P
C	I			O	K	R	A							
U	S			C	A	R	R	O	T					
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			E									U		
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Name: _____

How Does Your Garden Grow?

The students of the fifth grade class at Valley Elementary are going to raise money to go on a field trip by planting a garden. The field trip will cost $250.00. They are going to plant tomatoes to sell at the local farmers' market. The garden will be in the shape of a quadrilateral.

1. Draw four examples of a quadrilateral and label each one.

2. The class will plant forty-eight tomato plants. If the garden has six rows, how many plants will there be in each row?

3. A local farmer told the class that each tomato plant will produce an average of twenty-five tomatoes. How many tomatoes will the class get from their garden?

4. When the tomatoes were ready, the class weighed them. It took an average of three tomatoes to make one pound. How many pounds of tomatoes did the class have?

5. The class took their tomatoes to a local farmers' market and sold them for $0.79 per pound. How much money did they get from the tomatoes?

6. The class made a list of their expenses for the tomatoes.

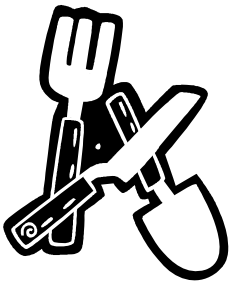
Item	**Quantity**	**Cost**	**Total Cost**
Tomato plants	48 plants	$0.55 per plant	
Fertilizer	10 pounds	$0.35 per pound	
Gas for transportation to the market	4 gallons	$2.05 per gallon	

Total cost for growing the tomato plants = _____

7. After paying for the cost of growing the tomato plants, how much money did the class have to go on their field trip?

8. Did the class have enough money for the field trip?

9. If they have money left over, how much will they have? What could they buy?



Name: Answer Key

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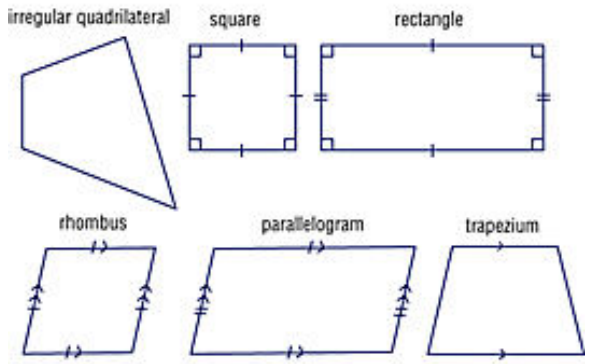


2. The class will plant forty-eight tomato plants. If the garden has six rows, how many plants will there be in each row?

   48/6 = 8 plants in a row

3. A local farmer told the class that each tomato plant will produce an average of twenty-five tomatoes. How many tomatoes will the class get from their garden?

   25 x 48 = 1,200 tomatoes

4. When the tomatoes were ready, the class weighed them. It took an average of three tomatoes to make one pound. How many pounds of tomatoes did the class have?

   1,200/3 = 400 pounds

5. The class took their tomatoes to a local farmers' market and sold them for $0.79 per pound. How much money did they get from the tomatoes?

   400 x $0.79 = $316

6. The class made a list of their expenses for the tomatoes.

Item	Quantity	Cost	Total Cost
Tomato plants	48 plants	$0.55 per plant	**$26.40**
Fertilizer	10 pounds	$0.35 per pound	**$3.50**
Gas for transportation to the market	4 gallons	$2.05 per gallon	**$8.20**

Total cost for growing the tomato plants = $38.10

7. After paying for the cost of growing the tomato plants, how much money did the class have to go on their field trip?

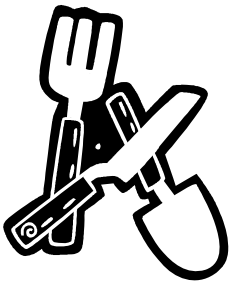
   $316.00 - $38.10 = $277.90

8. Did the class have enough money for the field trip?

   YES

9. If they have money left over, how much will they have? What could they buy?

   $27.90; answers will vary on what the class should buy



Grade 5

From the Garden

Math Objectives

- Develop fluency in adding and subtracting non-negative rational numbers (halves, fourths, eighths; thirds, sixths, twelfths; fifths, tenths, hundredths, thousandths; mixed numbers).
- Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers and paper and pencil.
- Identify, define, describe and accurately represent triangles, quadrilaterals and other polygons.
- Solve problems involving the properties of triangles, quadrilaterals and other polygons.
- Describe, extend and generalize numeric geometric patterns using tables, graphs, words and symbols.

English Language Arts Objectives

- Use meta-cognitive strategies independently and flexibility to monitor comprehension and extend vocabulary.
- Interact with the text before, during and after reading, listening and viewing.

Materials Needed

- 4-5 packages of vegetable seeds
- Poster board
- White glue
- Rulers
- Grains for mosaic such as beans, peas, popcorn and squash seeds
- Crayons or colored markers

Teacher Resources

- *MyPyramid for Kids*
- *Anatomy of MyPyramid*
- *Teaching MyPyramid*
- *What foods are in the fruit group?*
- *What foods are in the vegetable group?*
- *Making Sense of Fruit and Veggie Nutrients*
- *Digging Up Fruits and Veggies*

Handouts

- *Food from the Garden*
- *Garden of Foods*
- *Fractions in the Garden*
- *Perimeters in the Garden*
- *Areas in the Garden*

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Focus

Ask the students to look at the packages of vegetable seeds. Ask them if they have ever seen these packages and, if so, where. Ask the students if they have ever planted a garden or helped their parents plant a garden. Ask them why they think some people might plant a vegetable garden today. Ask them for a reason why someone would not plant a vegetable garden.

Teacher Input

Using the teacher resources *What foods are in the fruit group?* and *What foods are in the vegetable group?*, *Making Sense of Fruit and Veggie Nutrients* and all three MyPyramid resources, review with students the importance of eating a diet that includes many and various fruits and veggies.

Talking points:

- MyPyramid for Kids suggests that we eat a variety of fruits and veggies to get many of the nutrients we need to stay healthy and protect us from disease. Some of these nutrients are vitamins, minerals and fiber.
- Fifth graders should eat at least 2 to 2½ cups of veggies and 1 to 1½ cups of fruits every day.

Using the teacher resource *Digging Up Fruits and Veggies*, discuss with students where fruits and veggies can be obtained.

Talking points:

- Most of us purchase fruits or veggies at a store. Ask students where they usually get most of their fruits and veggies.
- There are several alternatives to purchasing fruits and veggies at the store. Alternatives include farmers' markets and personal gardens. Ask if they think of any other alternatives.
- Some people like to raise their own fruits and veggies because they taste better. Others like to garden as a hobby.

Practice and Assessment

Distribute the *Food from the Garden* handout. Allow students time for reading the selection. Discuss the reading and ask students to complete the questions at the end of the reading selection.

Divide the class into groups of three to four students and distribute a *Garden of Foods* handout to each group. Each group will need a sheet of poster board, rulers, glue and various seeds. The "garden" will be drawn according to the instructions on the handout and the sections of the garden filled with seeds to make a mosaic. Instruct students to design their garden following the directions in the handout. Suggest that they sketch their garden on another sheet of paper before putting it on the poster board.

Review the concepts of fractions, perimeters and areas. Discuss the real and relevant application of these mathematical concepts to the *Garden of Foods* mosaic and to actual gardening.

After the students have completed the mosaic, provide one task sheet to each group. Depending on the size of the class, some groups may have duplicate assignments. The tasks include: *Fractions in the Garden*, *Perimeters in the Garden* and *Areas in the Garden*. Allow students to continue working in groups to solve their task sheets.

Ask each group to report its findings to the class and share how the problems were solved. Each group will become the "expert group" to teach the class the applications of the skill on the task sheet. If time allows, the groups can complete all three task sheets.

Additional Activity (additional handouts and/or materials needed)
Ask students to choose a garden plant and create a seed packet design that would represent the plant. Relate the activity to the work of the Shakers. Identify the purpose of the packet to be informative for the consumer and a form of advertising.

Name: _____

Food from the Garden

MyPyramid for Kids says we should eat a lot of fruits and veggies. Most people do not eat enough fruits and veggies. MyPyramid says that kids in fifth grade should eat 2 to 2½ cups of veggies and 1 to 1½ cups of fruit every day.

A healthy diet has a lot of fresh fruits and veggies. Eating a mix of fruits and veggies helps keep our bodies healthy. Fruits and veggies give us vitamins and minerals, fiber and other things that are important to good health. Fresh fruits and veggies have very little salt.

One way to get a mix of fresh fruits and veggies is to grow a home garden. In a home garden, seeds are planted that will eventually give us food. Garden seeds don't cost very much. They can be found in many varieties. Many people think growing a home garden is also a good hobby. It is also a way to be more active each day.

A gardener must know about seeds when growing a garden. Some seeds need a longer growing season than others. The home gardener must know about the germination time, how deep to plant the seeds and how far apart to plant the seeds. It takes a few days for the seeds to sprout and come out of the ground. It takes some seeds longer to sprout than others. Some seeds may need more sunlight or water. This information is on the seed packet.

The seed coat protects the *embryo,* or baby plant, from rough treatment and cold temperatures. This *embryo* grows into a new plant. Water makes the seed coat soft. This lets the *embryo* push through and grow. A large portion of the seed gives the *embryo* food. The rest of the seed, the *cotyledons*, provides food for the new plant until it begins to make its own food. The *cotyledons* supply the energy for the baby plant to grow and make roots. All of the stored food will be used by the time roots have started to grow.

The Shakers, a religious group, started the first commercial seed nursery in the United States. They placed their seeds in small paper packets called “papers”. The early seed packets were decorated with beautiful line drawings. Most garden seeds today are still sold in packages very similar to those first “papers”. They are decorated with pictures of the plants. The seed packet will include the common name and sometimes the scientific name of the plant. It also will include general information about care and use. Most seed packets also include a map of the United States showing the different frost or growing zones. Most garden seed is sold by the ounce since home gardens are usually small.

Answer these questions based on the reading section:

1. What is the main idea of the second paragraph?

2. Which paragraph has information about what a gardener should know?

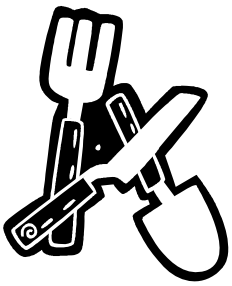
3. What information is in the fifth paragraph?

4. Which paragraph has historical information?

5. Which paragraph has information on MyPyramid?

6. Which paragraph has information on why you should consider raising a garden?

Source: Smart Nutrition-Arkansas Department of Education



Name: Answer Key

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Answer these questions based on the reading section:

1. What is the main idea of the second paragraph?
   A healthy diet includes plenty of fruits and veggies.

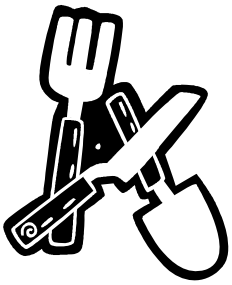
2. Which paragraph has information about what a gardener should know?
   Paragraph 4

3. What information is in the fifth paragraph?
   The paragraph includes information about seeds.

4. Which paragraph has historical information?
   Paragraph 6

5. Which paragraph has information on MyPyramid?
   Paragraph 1

6. Which paragraph has information on why you should consider raising a garden?
   Paragraph 3



Source: Smart Nutrition-Arkansas Department of Education

Garden of Foods

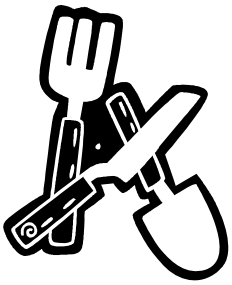
Names of Group Members:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Directions: Create a Garden of Foods mosaic by drawing a garden according to the instructions given. After the garden is drawn on poster board, spread a thin layer of white glue on each section of the garden. Next, attach the different types of seeds to the sections according to the instructions below. Use popcorn, peas, squash and beans to create a mosaic. Sketch the garden on another sheet of paper before beginning on poster board.

Instructions for drawing the garden on poster board:

1. The garden is a parallelogram with sides measuring 12 inches and 20 inches.
2. Each section of the garden is a parallelogram with one side measuring 20 inches.
3. One fourth of the garden is planted in corn.
4. One third of the garden is planted in beans.
5. One sixth of the garden is planted in squash.
6. The beans section of the garden joins the squash section of the garden.
7. One fourth of the garden is planted in peas.
8. The peas section of the garden does not touch the beans section.
9. The corn section of the garden does not touch the beans section.
10. The squash section of the garden has garden plants on both sides.



Source: Smart Nutrition-Arkansas Department of Education

Name: Answer Key

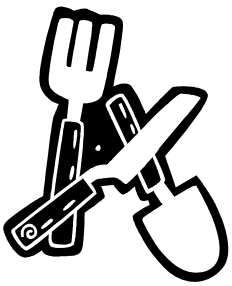
Garden of Foods

Mosaic:

- **1 inch x 20 inches per section**
- **12 sections**
- **1/4 of garden = 3/12**
- **1/3 of garden = 4/12**
- **1/6 of garden = 2/12**

One possible garden arrangement:

Peas	**Peas**	**Peas**	**Corn**	**Corn**	**Corn**	**Squash**	**Squash**	**Beans**	**Beans**	**Beans**	**Beans**



Source: Smart Nutrition-Arkansas Department of Education

Name: _____

Fractions in the Garden

Task 1: Solve the problems below based on the completed mosaic. Show your work.

1. What fractional part of the garden is planted in beans and squash? _____

2. What fractional part of the garden is planted in corn and peas? _____

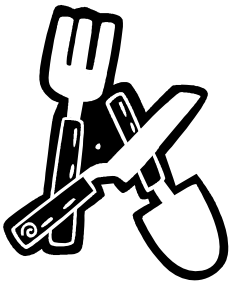
3. What fractional part of the garden is planted in beans, peas and squash? _____

4. What fractional part of the garden is planted in corn, squash and peas? _____

5. What fractional part of the garden is planted in squash, beans and corn? _____

6. If the squash, corn and peas sections of the garden were removed, what fractional part of the garden would be left? _____

7. If the beans and squash sections of the garden were removed, what fractional part of the garden would be left? _____



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Name: Answer Key

Fractions in the Garden

Task 1: Solve the problems below based on the completed mosaic. Show your work.

1. What fractional part of the garden is planted in beans and squash? **1/2**
   1/3 beans = 4/12
   1/6 squash = 2/12
   2/12 + 4/12 = 6/12 = 1/2

2. What fractional part of the garden is planted in corn and peas? **1/2**
   1/4 corn = 3/12
   1/4 peas = 3/12
   3/12 + 3/12 = 6/12 = 1/2

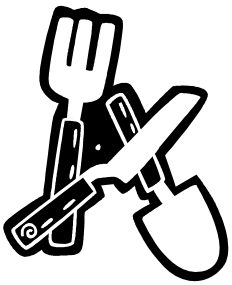
3. What fractional part of the garden is planted in beans, peas and squash? **3/4**
   1/3 beans = 4/12
   1/4 peas = 3/12
   1/6 squash = 2/12
   4/12 + 3/12 +2/12 = 9/12 = 3/4

4. What fractional part of the garden is planted in corn, squash and peas? **2/3**
   1/4 corn = 3/12
   1/6 squash = 2/12
   1/4 peas = 3/12
   3/12 +2/12 + 3/12 = 8/12 = 2/3

5. What fractional part of the garden is planted in squash, beans and corn? **3/4**
   1/6 squash = 2/12
   1/3 beans = 4/12
   1/4 corn = 3/12
   2/12 + 4/12 + 3/12 = 9/12 = 3/4

6. If the squash, corn and peas sections of the garden were removed, what fractional part of the garden would be left? **1/3**
   12/12 – 8/12 = 4/12 = 1/3

7. If the beans and squash sections of the garden were removed, what fractional part of the garden would be left? **1/2**
   12/12 – 6/12 = 1/2



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Name: _____

Perimeters in the Garden

Task 2: Solve the problems below based on the completed mosaic. Show your work.

1. What is the perimeter of the section of the garden planted in corn? _____

2. What is the perimeter of the section of the garden planted in corn and peas? _____

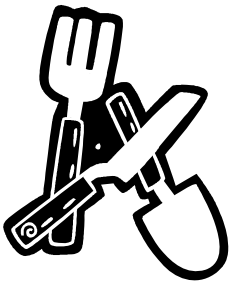
3. What is the perimeter of the section of the garden planted in corn, squash and peas? _____

4. What is the perimeter of the entire garden of foods? _____

5. What is the perimeter of the section of the garden planted in beans? _____

6. What is the perimeter of the section of the garden planted in squash and beans? _____

7. What is the perimeter of the section of the garden planted in peas? _____



Source: Smart Nutrition-Arkansas Department of Education

Name: Answer Key

Perimeters in the Garden

Task 2: Solve the problems below based on the completed mosaic. Show your work.

1. What is the perimeter of the section of the garden planted in corn? **46 inches**

2. What is the perimeter of the section of the garden planted in corn and peas? **52 inches**

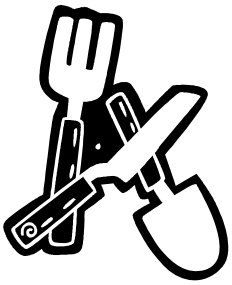
3. What is the perimeter of the section of the garden planted in corn, squash and peas? **56 inches**

4. What is the perimeter of the entire garden of foods? **64 inches**

5. What is the perimeter of the section of the garden planted in beans? **48 inches**

6. What is the perimeter of the section of the garden planted in squash and beans? **52 inches**

7. What is the perimeter of the section of the garden planted in peas? **46 inches**



Source: Smart Nutrition-Arkansas Department of Education

Name: _____

Areas in the Garden

Task 3: Solve the problems below based on the completed mosaic. Show your work.

1. What is the area of the entire garden? _____

2. What is the area of the beans section of the garden? _____

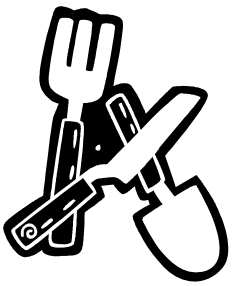
3. What is the area of the beans and squash sections of the garden? _____

4. What is the area of the corn and peas sections of the garden? _____

5. What is the area of the beans, squash and corn sections of the garden? _____

6. What is the area of the peas section of the garden? _____

7. What is the area of the corn section of the garden? _____



Source: Smart Nutrition-Arkansas Department of Education

Name: Answer Key

Areas in the Garden

Task 3: Solve the problems below based on the completed mosaic. Show your work.

1. What is the area of the entire garden? **240 square inches**

2. What is the area of the beans section of the garden? **80 square inches**

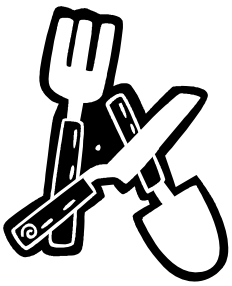
3. What is the area of the beans and squash sections of the garden? **120 square inches**

4. What is the area of the corn and peas sections of the garden? **120 square inches**

5. What is the area of the beans, squash and corn sections of the garden? **180 square inches**

6. What is the area of the peas section of the garden? **60 square inches**

7. What is the area of the corn section of the garden? **60 square inches**



Source: Smart Nutrition-Arkansas Department of Education