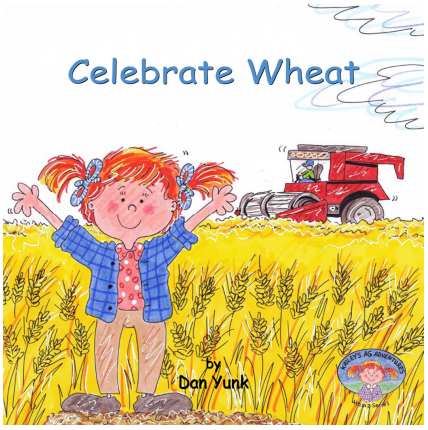
Pizza, Pizza, Pizza!

A Lesson on where all the ingredients of pizza come from.



A lesson based on the book, Celebrate Wheat, *by Dan Yunk.*

America's food supply is safe, affordable and abundant but misunderstood by the public. Kansas Farm Bureau seeks to improve consumer knowledge of the importance of farming and ranching through the Kailey's Ag Adventure Series, of which this book is a part.

BACKGROUND INFORMATION:

After reading Celebrate Wheat, you learned with Kailey how farmers plant, grow and harvest wheat. You also learned wheat is what makes the yummy crust in pizza we eat. Did you know today Americans eat 22.5 pounds of pizza a year! As a nation that means we eat 90 acres of pizza per day. An acre is about the size of a football field so that means as a nation we eat 90 football fields of pizza each day! Only hamburgers sell more often than pizza.

Since we eat so much pizza do you think it is important that we know where it comes from? Well, actually in Kansas we grow the ingredients to make pizza like, wheat, tomatoes, mushrooms, peppers, and onions. We also raise animals who produce the cheese, pepperoni and sausage for the pizza. Today we are going to learn about where all the different ingredients of pizza comes from!

ACTIVITY 1:

After reading Celebrate Wheat to the students and discussing about pizza from the information listed above start discussing about the different ingredients of pizza which are listed below. Use the **PowerPoint** to explain each ingredient. Pass out **Worksheet 1** and help students fill out the worksheet as you discuss each ingredient. *There is a lot of information listed in the PowerPoint and below, it is up to the teacher to decide how much information to teach the students.*

Crust:

Pizza is made from wheat, which has traveled through many processes before we take a bite.

- The farmer plants wheat kernels in the ground. When the wheat is ready to harvest, the farmer harvests the wheat with a combine. Then the wheat is loaded into trucks and hauled to the elevator.
- The wheat is taken from the elevator to a terminal where it is put through a cleaning process.
- Next the wheat is sold to various industries that use it to make food or feed.
- If the wheat will be used for food, it is shipped to a mill where it is processed to become flour.
- Wheat flour contains a protein called gluten. To make bread, active yeast, warm water and other ingredients are added to the flour. The gluten traps the air bubbles the yeast releases and causes bread to rise.

LEVEL: 1st-2nd Grade

SUBJECTS/STANDARDS:

Writing: 1st Grade

CCSS.ELA-Literacy.RI.1.1
Ask and answer questions about key details in a text.

CCSS.ELA-Literacy.RI.1.2
Identify the main topic and retell key details of a text.

Math: 1st Grade

CCSS.Math.Content.1.G.A.3
Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

Standards may be adjusted to fit other grade levels.

ACTIVITY DESCRIPTION:

The students will learn about the different ingredients of pizza by increasing their math and reading skills. They will match up the ingredient with the farm product and cut up pizza to make fractions.

Optional Activity (Yeast Experiment):
To demonstrate to students how yeast causes pizza crust to rise.
Yeast causes pizza to rise. When warm water is added to yeast, it activates enzymes in the dough that convert starch into sugar. Carbon dioxide gas is created and the gas bubbles cause the dough to rise. The gas bubbles remain trapped in the bread and give it a light, airy texture.
Try this experiment to see yeast in action:

1. Mix a teaspoonful of sugar and a half teaspoon of yeast in a two-liter pop bottle. Add two or three inches of warm water and shake the mixtures.
2. Stretch a balloon over the top of the bottle.

The balloon should blow up due to the carbon dioxide gas that is released from the yeast.

Tomato Sauce:
Tomatoes were first grown as ornamental plants and thought to be poisonous. During the 19th century, people realized they were not poisonous and they became a popular food.

- Tomatoes require 75-85 days to develop into mature plants with ripe fruits.
- The seeds are usually started indoors and then transplanted outdoors after seedlings are four to six weeks old.
- In gardens or greenhouses, most tomato plants are supported with stakes to keep them from spreading on the moist ground.
- When tomatoes are ripe, they are carefully packed into boxes and sent to grocery stores.
- Some tomatoes are sent to canneries where they are processed for sauces or ketchup.
- Special herbs such as oregano, dill, and garlic are added to give pizza sauce its special taste.
- On average, you eat 72.7 pounds of processed tomatoes a year.

Cheese:

- Cheese is made from the milk of dairy cows. The process of cheese-making involves five basic steps:

1. **Process the milk.** The milk is heated and quickly cooled in a process called pasteurizing. This kills harmful bacteria.
2. **Separate the curd.** The processed milk is treated to form a soft, custard-like substance called curd. The curd contains a liquid called whey, which must be taken out through a special process before cheese can be made. Knives cut the curd into thousands of small cubes and then whey oozes from them, forming a curd "ball".
3. **Treat the curd.** The "ball" is broken up into small pieces for pressing. The curd for most cheeses is packed into metal hoops or molds for pressing. The containers are put into presses that keep the cheese under great pressure for few hours to a few days. During pressing, more whey drains from the curd. Then it is shaped into blocks or wheels, removed from the metal hoops, and immediately wrapped in plastic.
4. **Ripen the cheese.** Cheese is aged in cooled storage rooms or warehouses (aging helps give cheese its flavor). Aging times vary for different cheeses. Brick cheese needs two months to age while Parmesan requires a year. The longer the ripening time, the sharper the cheese's flavor.
5. **Package the cheese.** After being aged, cheese is packaged in a wide variety of shapes and sizes. Some cheeses are sliced at the factory and sealed in foil or plastic.

STUDENT LEARNING OUTCOMES:
The student will know where pizza ingredients come from.
The student will have number sense of fractions.

ESTIMATED TEACHING TIME: 45 MINUTES
(GREATLY VARIES ON TEACHER AND ACTIVITIES.)

NEW VOCABULARY:
FRACTIONS
TOMATO
SAUCE
SAUSAGE
CRUST
SAUCE
PASTEURIZING
BACTERIA
PROCESSED

MATERIALS NEEDED:
Celebrate Wheat
Pizza PowerPoint
Copies of Worksheet 1
Copies of Worksheet 2
Copies of Worksheet 3
Pizza Ingredients (Optional)
See slide 9 in PowerPoint
Optional Yeast experiment:
1 t. of sugar
1/2 t. of active yeast
2 liter pop bottle
balloon

SOURCES:
Pizza Ag Mag produced by American Farm Bureau
Exploring Plant Pizza produced by Indiana Farm Bureau

Pepperoni & Sausage:
You only need a few minutes to eat a piece of pizza, but do you know it takes almost six months from the time a pig is born to produce a 250 pound animal ready for processing?

- Farmers often have many sows (mother pigs) in their care and depend on these sows to produce pigs for their income. Therefore, it is in the farmer's best interest to have healthy well cared for animals.
- Pigs may be sold at an auction market or sale barn, or may be bought directly by an order buyer who comes to the finishing house to buy for a packer.
- Meat inspectors employed by United States Department of Agriculture inspect live pigs, pig carcasses and the entire packing plant to make sure that pork is safe to eat.
- About half of the pork produced in the United States is sold in supermarkets. The remaining pork is consumed in restaurants, hospitals, schools and business cafeterias.

Mushrooms:
There are close to 3,300 types of mushrooms throughout the world and 3,000 of them grow in the U.S. Mushrooms lack chlorophyll, the green substance used by plants to make food, but survive by soaking up food material from their surroundings. The most popular mushroom is the table mushroom. It is grown in specially designed mushroom houses where the farmer can control the temperature.

Peppers:
There are many varieties of garden peppers, but most Americans gardeners prefer the large-fruited sweet pepper. Peppers are usually eaten in their immature green stage but are also delicious after they have fully ripened and turned red or yellow. Green peppers grow on small bushy plants. The peppers have seeds in them so they are the female part of the plant, thus they are actually fruits.

Onions:
They are raised either from seed or from "sets." Onion bulbs grow underground and have long green tops. Onions are often picked by hand or machine, cleaned, and sent just as they are to grocery stores or processing plants. There they are diced or processed to become ingredients for foods such as spaghetti, barbecue sauce, and pizza.

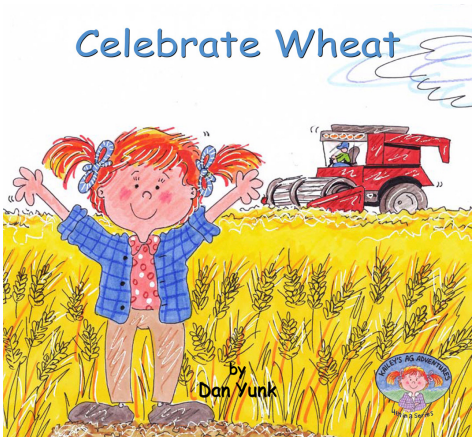
After the teacher has gone through all the materials assess the students by questioning them or by using worksheet 3. At the end of the PowerPoint there is also a pizza recipe; while making the pizza ask the students where the ingredients came from and the students should know. When cutting the pizza tie in fractions, show students 1/2, 1/4, 3/4. The pizza recipe is listed on the Power Point, slides 9-10.

ADDITIONAL ACTIVITIES:
Worksheet 2- This worksheet helps students to comprehend and understand fractions. Help the students to complete the worksheet by doing an example for them so they see how to draw the lines. It would tie in very well if the class made a pizza and then you cut up the pizza to show the different fractions.

Worksheet 3– This worksheet can be used if there is extra time and the teacher really wants the students to understand what farm product produces what material on the pizza. The students draw a line to connect the pictures of the farm product to the material that is used on the pizza.

Did you know?

- It is believed that the first pizza was made in Italy between 730 and 130 B.C. The pizza was flat, round bread baked with oils, garlic, herbs, olives, and vegetables, and covered with cheese. A rim of crust was left around the outside to hold on to.
- When Italians immigrated to the U.S., they brought the pizza idea with them. The first pizzeria was opened in N.Y.C.
- Soybean oil is used to make pizza dough.



Pizza Who?

Name_____

Directions: Place the correct vocabulary word from the word bank in the sentence that best describes the vocabulary term.

Word Bank:

farm peppers onions pigs
Cheese tomatoes wheat mushrooms

1. Pizza crust starts with ___ ___ ___ ___ ___.

2. Tomato sauce is made from ___ ___ ___ ___ ___ ___ ___ ___.

3. A cow makes milk. ___ ___ ___ ___ ___ ___ is made from milk.

4. Pigs are raised by farmers. Pig meat is called pork. Sausage is made from ___ ___ ___ ___.

5. There are 3,300 differ kinds of ___ ___ ___ ___ ___ ___ ___ ___ ___.

6. ___ ___ ___ ___ ___ ___ ___ can be red or green. They are actually fruits.

7. ___ ___ ___ ___ ___ ___ are white bulbs grown in the ground. They are used on pizza.

8. Everything in pizza begins on a ___ ___ ___ ___.

Pizza Who?

Name: ANSWER KEY

Directions: Place the correct vocabulary word from the word bank in the sentence that best describes the vocabulary term.

Word Bank:

farm peppers onions pigs
Cheese tomatoes wheat mushrooms

1. Pizza crust starts with WHEAT.

2. Tomato sauce is made from TOMATOES.

3. A cow makes milk. CHEESE is made from milk.

4. Pigs are raised by farmers. Pig meat is called pork. Sausage is made from PIGS.

5. There are 3,300 differ kinds of MUSHROOMS.

6. PEPPERS can be red or green. They are actually fruits.

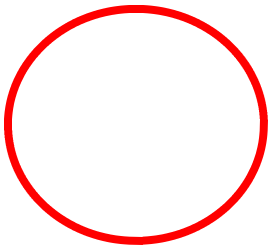
7. ONIONS are white bulbs grown in the ground. They are used on pizza.

8. Everything in pizza begins on a FARM.

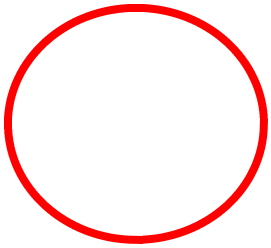
PIZZA CUTS COUNT

Name_____

1. Sam is having pizza for supper. His mother asked him to cut the pizza into 2 pieces. Draw lines on the pizza to show how Sam will cut it.

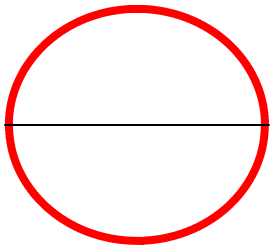


2. Sam has another pizza to cut. His mother wants it cut into 4 pieces. Draw how it will look when Sam is done.

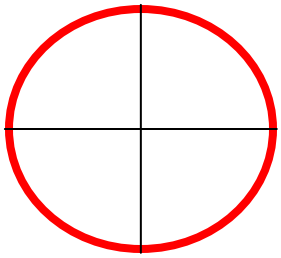


Each piece is _____ of the whole piece 4

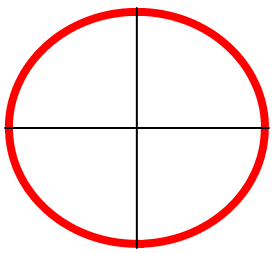
3. The pizzas below are cut into pieces. Shade in the number of pieces that is listed on the top part of the fraction.



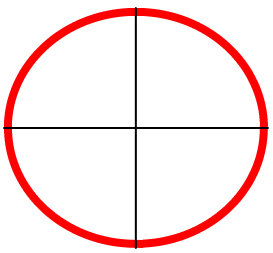
$\frac{1}{2}$



$\frac{2}{4}$



$\frac{3}{4}$



$\frac{1}{4}$

PIZZA CUTS COUNT

Name ANSWER KEY

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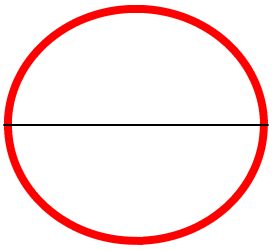
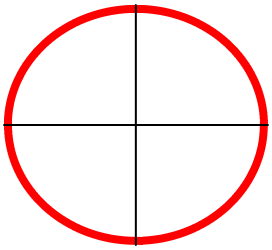
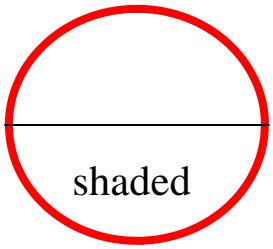


2. Sam has another pizza to cut. His mother wants it cut into 4 pieces. Draw how it will look when Sam is done.

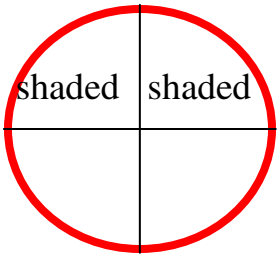


Each piece is $\frac{1}{4}$ of the whole piece

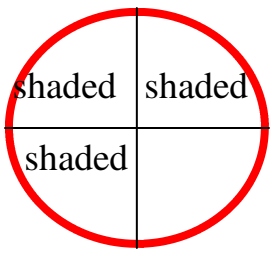
3. The pizzas below are cut into pieces. Shade in the number of pieces that is listed on the top part of the fraction. Do not have to be the exact piece that says shaded, just have to have correct number shaded.



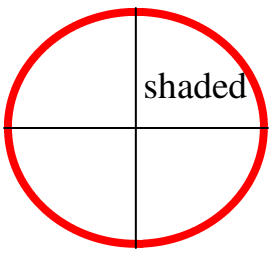
$\frac{1}{2}$



$\frac{2}{4}$



$\frac{3}{4}$

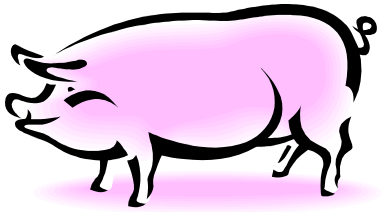


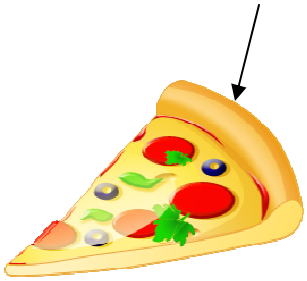
$\frac{1}{4}$

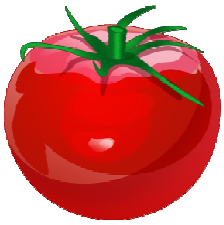
Pizza Match-UP

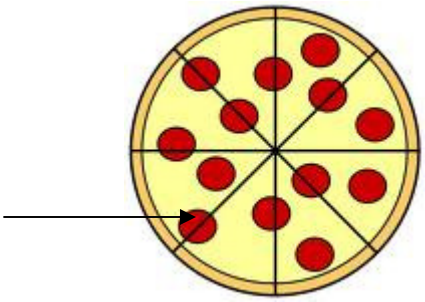
Name_____

Directions: Match the farm product with what you would eat on a pizza.









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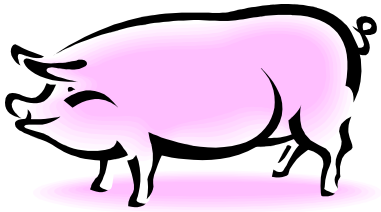
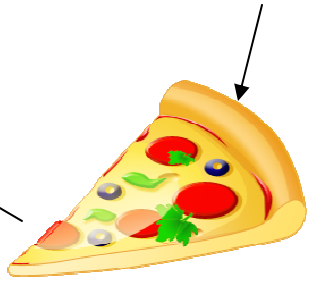
Worksheet 1

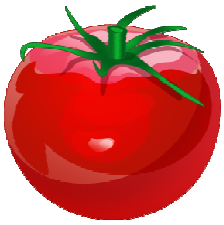
Pizza Match-UP

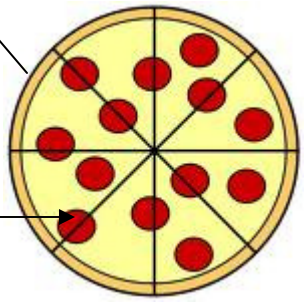
Name ANSWER KEY

Directions: Match the farm product with what you would eat on a pizza.









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