



Special Assignment: Pizza

Special Assignment: Pizza was developed to use as part of a *North Dakota* studies unit for fourth graders.

In the story, children discover that the products used to make pizza can be grown on *North Dakota* farms.

Through the lesson and activities, students will learn:

- Consumers depend upon farmers for food.
- Most food products go through processing before they are used.
- Many of the ingredients in pizza are grown on North Dakota farms and ranches.

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The Curious Kids Club was having their weekly meeting in Jack and Lucy's basement. As their name implied, they were a curious bunch. They were always wondering where things came from or where they went.

While they were munching away on their snack of pizza and fruit punch Zach questioned, "Does anyone know where pizza comes from?"

"Sure," said Jamie, it's delivered to us from the pizza shop!"

Lucy added, "Sometimes my dad makes pizza from a mix."

"No," said Zach, "I meant where does the stuff in pizza come from?"

"Oh, you meant like the pepperoni and the cheese," said Derek.

"Yuk, I hate mushrooms," said Jack. Lisa joined in "So do I!"

Ben, who had been quietly eating his pizza piped up, "I think everything that's in a pizza is grown somewhere."

"Do you think it's grown here in North Dakota?" asked Jamie.

"It might be," replied Zach. "Let's figure out what we like on our pizza and then we can figure out where the ingredients come from. We can do some real research on this one."

The Curious Kids quickly made a list of their favorite pizza ingredients:

<i>Pepperoni</i>	<i>Ground Beef</i>
<i>Canadian Bacon</i>	<i>Cheese</i>
<i>Onions</i>	<i>Mushrooms</i>

"What about the crust?" asked Derek.
"What's in the crust?"

"The crust has flour, and maybe some yeast. We can check in a recipe book," suggested Lisa.

"I'll get a recipe before our next meeting," offered Lucy. Zach took the lead in helping everyone pick an ingredient to research.

"Pepperoni is for me!" Jamie said enthusiastically.

"Cheese, please!! In fact, extra cheese please!" responded Jack. "That's my kind of pizza!"

"Who wants onions?" asked Zach. "They make me cry, but I'll take them," came from Lisa.

"My aunt and uncle raise beef cattle, so I can find out about ground beef," said Derek.

"I can do some research on flour, unless you want it Zach?" offered Ben. "Flour for Ben it is!" said Zach. He continued, "I'll start with the tomatoes for the pizza sauce and if I have time, I'll do some checking on the vegetable oil. Jamie, would you mind taking Canadian Bacon too?"

"No problem," replied Jamie.

"We can start with a visit to the library and then we can do some letter writing. We'll get to the source on this one," offered Lisa eagerly.

Zach closed the meeting by saying, "The Curious Kids Club is adjourned to work ***on Special Assignment Pizza.***"

The Curious Kids Club compiled their findings to share with their families and friends:

BUILDING A PIZZA

Pizza crust can be made from a mix, purchased ready made or be made from “scratch.” What all of these methods have in common is flour, yeast, shortening, salt, and sometimes sweetener.

- The flour in the crust comes from **wheat**. Hard red spring wheat is grown throughout North Dakota with the largest production in the northern and eastern part of the state. One acre of wheat produces enough flour for 2,000 large pizza crusts.



Located in the heart of North America’s spring wheat country, the North Dakota Mill and Elevator in Grand Forks produces superior quality flour *made only from North Dakota wheat*.

Wheat products provide complex carbohydrates which give the body the energy it needs. They also contain B-vitamins and protein to help with body repair, a good appetite, digestion and healthy nerves.

- Sources of vegetable oil include **sunflowers, corn, soybeans, safflower and canola**, all of which are grown in our state. North Dakota leads the nation in the production of sunflowers and canola.
- Sunflowers are planted in May and grow rapidly. By fall, sunflower heads have dried, turned brown and are ready to harvest. Production is high in the central and southeastern part of the state.
- Pizza sauce is made from **tomatoes**, and is blended with spices. While California is the nation’s biggest producer of tomatoes for commercial use, there are some farmers in North Dakota who grow tomatoes for the retail market.

Commercial pizza sauce is made by taking the seeds out of the tomatoes and then blending the tomatoes with spices such as garlic, oregano, basil, salt and pepper. Vegetable oil, corn starch, and high fructose corn syrup are also added.

- Cheese is made from **milk**. Farmers raise dairy cows which produce milk for cheese, ice cream, and cream, as well as milk to drink. The cows on most farms are milked twice a day by an electric milking machine. The milk is stored in bulk tanks until trucks arrive to deliver it to the cheese plant.



For the cows to produce milk, it’s important for them to eat a balanced diet of hay, silage, mixed grains and feeds containing salt, other minerals and vitamin supplements. Cows also need to drink lots of water. It’s interesting to know a typical dairy cow consumes a bathtub full (about 67 quarts) of water a day.

There are over 400 types of cheese, but most cheese makers go through the same basic steps:

1. Preparing the milk
2. Adding a starter, rennet, and color
3. Cutting the curd
4. Draining off the whey
5. Salting the curd
6. Pressing and curing the cheese
7. Ripening and packaging the cheese

Ground beef or hamburger comes from ***cattle***. Mother cows usually give birth to calves in the springtime. During the summer, cows and calves eat and sleep in the pasture where there is grass and clean water. Beef cattle are able to use land that's not suited for growing crops. This may be land that is too dry, rugged, wet or hilly for food production. Having cattle allows a rancher to use the land that otherwise wouldn't be used at all.



Through the fall and winter, calves eat hay, grain (feed) and water. The feed helps them grow. At 1100 to 1200 pounds, the cattle are ready to be marketed and sold. There are many meat processing plants across the state. Beef is a nutrient-dense food providing **ZIP** (**Zinc**, **Iron** and **Protein**).

Canadian bacon, sausage, ham and pepperoni all come from ***hogs***. Farmers feed and care for the mother pig, called a sow, so she can produce the milk to feed the baby pigs. At 8-9 weeks, or at an average weight of 50 pounds, the small pigs are sold as feeder pigs. A feeder pig is raised by a producer, who will sell the pigs when they reach market weight.

At six months of age, the pigs will weigh an average of 230 pounds, and are ready to market. They are shipped to processing centers and made into food products for human consumption and by-products.



Improved breeding and better feeding practices has resulted in a leaner market hog which is lower in calories, averaging just *165 calories per three ounce serving*. Pork products are processed in Mandan as well as other locations in the state.

Onions are another crop which isn't typical to North Dakota, but we do have several farms in the state growing onions. Onions are grown under the soil. They start from a small seed and grow until they are ready to harvest.

Potatoes can be found on a Breakfast Pizza. The potato is the second most consumed food in the United States, trailing only milk products. Potatoes are a great source of dietary fiber and Vitamin C.

The Curious Kids Club was having another of their regular weekly meetings, except this time making pizza was on the agenda.

"I've got three round crusts ready," said Lucy. "Did everyone bring an ingredient?"

"We sure did," said Zach. "I can spread the sauce, and then everyone can put ingredients on one-third of a pizza. We can put cheese on the rest of the pizza for anybody that is really hungry."

Special Assignment Pizza was a success!
The Curious Kids Club would enjoy a Perfect Pizza because now they knew where all the ingredients came from!

Perfect Pizza Recipe

1 T. dry yeast
1 C. warm water
1 T. sugar
½ tsp. salt
2 T. vegetable oil
3 ¼ C. flour
1 C. pizza sauce
Pizza toppings
2 C. mozzarella cheese

Dissolve yeast in water. Add sugar, salt, oil and ¼ C. of the flour. Beat until smooth; knead in the rest of the flour. Cover and let rise in a warm place for 1 hour. Flatten dough on a large greased cookie sheet. Spread with pizza sauce. Arrange toppings on pizza and cover evenly with cheese. Bake at 375 degrees for 15-20 minutes.

From the clues in the story and the information given below, can you tell what kind of pizza everyone is having? (The numbers indicate how many selected each ingredient.)

	Extra	Pepperoni	Canadian	Ground	Potatoes	Onions	Everything
Cheese			Bacon	Beef			
Lucy							
Ben							
Derek							
Jack							
Jamie							
Lisa							
Zach							
	2	3	2	2	2	1	1

1. Ben's favorite pizza is loaded with a variety of meat and vegetables.
2. Lisa is having one vegetable and meat from cow on her pizza.
3. Zach wanted two kinds of meat from the same animal and the vegetable that causes Lisa to cry.
4. Jamie had a double dairy product along with circles of meat from a pig.
5. Derek wanted all the meat options.
6. Lucy likes her pizza for breakfast. What vegetable will she add?
7. Jack likes a lot of meats, vegetables, and cheese when he has pizza.

Activities

MATH

- **Graphs**

Children can print their names on a square or symbol representing the topic being graphed. The class can then make one large graph. Remember to start the graph from the bottom and work up.

Supplies - pre-cut square or symbols, stickers or dots
large piece of butcher paper or tag board

Another option would be to have children conduct a survey and report their findings on individual graphs.

Supplies - graph paper

Who makes the best pizza?

Pizza Hut	Mom/Dad	Dominos	Happy Joe's
Ben			
Katie H.		Kyle	
Thomas		Mark	Elizabeth
Jamie	Sarah	Lisa	Jacob
Chris	Amanda	Angie	Laura

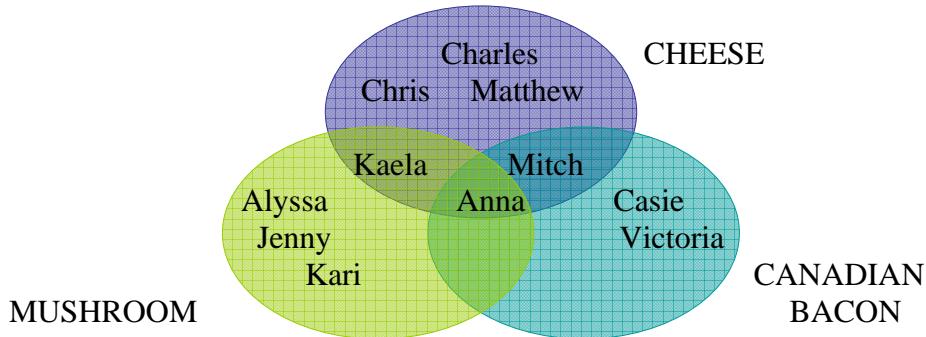
- **Venn Diagram**

A Venn Diagram is another way of recording the results. Overlapping circles represent the items in the survey. The child places his name in the appropriate circle or where two or more circles overlap. A name in the overlapping circles indicates two or more choices to the question.

Choose only 3 categories for a Venn Diagram.

Supplies - butcher paper, tag board or blackboard space; pre-cut symbols, stickers or dots.

What do you like on your pizza?



Language Arts

Write a persuasive paragraph using the topic: _____ (restaurant name) makes the best pizza.

Science

Make Curds and Whey (recipe included)

For Review and Fun

Oil Seed Samples

Word Find (included in this packet)

Connections

Visit a local pizza restaurant and interview the owner.

Set up a “Classroom Farm Corner” and invite students to bring in things relating to agriculture – toy tractors, photos of farming, seeds, ads for agricultural products, cobs of corn, etc. Have a short discussion period about each day’s new objects.

Brainstorm the crops and plants students have seen. How many have eaten or used each food?

Look at a milk carton and see what it tells us. The milk is pasteurized, homogenized and fortified. What do those processes accomplish?

Have students compare the nutritional information on the carton with the nutritional information on a soda can.

Have students locate and indicate with a marker each town mentioned on pages 3 and 4 of the activities on a North Dakota map.

Create a bulletin board showing “from farm to fork”

A Piece of Pizza – Kids’ Facts

Student Work Sheet

Wheat – a grain

Wheat is a grain. Corn, oats, rye and barley are examples of other grains. Grains consumed by humans must be processed before they can be eaten. In addition to pizza dough, what else is made from wheat?

Tomatoes – a field or garden vegetable

Vegetables are a good source of vitamins. Vegetables are sold fresh, canned or frozen. What are some other vegetable you like on pizza?

Cheese – a dairy product

Milk comes from dairy cattle. It is high in calcium which builds strong bones. Many other products besides cheese are made from milk. What are some other dairy products?

Beef – a meat from cattle

Beef is a good source of protein. Ground beef is often served on pizza or as hamburgers. What other cuts of meat come from cattle?

Pork – a meat from pigs

Pepperoni (often made from pork and beef) and Canadian Bacon are often served on pizza. What other meat products do we get from pigs?

Pizza



Anchovies
Bread Sticks
Pepperoni
Crust
Dough
Round
Hamburger
Slice
Mushrooms
Tomato

Onions
Oregano
Cheese
Pineapple
Root Beer
Ham
Sausage
Mozzarella
Take-Out
Pizza

Toppings
Cheddar
Peppers
Deliver
Extra
Sauce
Italian
Spicy
Olives

Answer Sheet

What Kind of Pizza? (page 5)

	Extra	Pepperoni	Canadian	Ground	Potatoes	Onions	Everything
	Cheese		Bacon	Beef			
Lucy					X		
Ben							X
Derek		X	X	X			
Jack	X	X	X	X		X	
Jamie	X	X					
Lisa				X		X	
Zach		X	X				
	2	4	3	3	1	2	1

A Piece of Pizza (page 8) There will be many more acceptable answers in addition to the ones listed here.

Wheat –

Bread	cereal	cookies	rolls
Pretzels	cake mixes	doughnuts	crackers

Tomatoes-

Carrots	broccoli	squash	peas
Beets	beans	onions	cauliflower
Spinach	cabbage	lettuce	cucumbers

Cheese –

Ice cream	yogurt	cream	cottage cheese
Butter	buttermilk		

Beef –

Steak	roasts	liver	brisket
Ribs	soup bones	stew meat	heart/tongue

Pork –

Chops	roasts	ribs	ham
Bacon	sausage		

Making Your Curds & Whey

Remember the Nursery Rhyme *Little Miss Muffet*? In this experiment, you will separate milk into its solid and liquid parts (curds and whey).

What you need:

- Milk
- Vinegar
- small baby food jars (or other small jars)
- tablespoons



What to Do:

1. Check with a grown-up before you begin.
2. Fill the jars with milk. Add 2 tablespoons of vinegar and stir. Allow the jar to sit for two to three minutes.

What happens?

A *colloid* is a mixture of liquids and very small particles that are spread throughout the liquid. Milk is a colloid. The solid particles in milk are evenly spread throughout a liquid.

Vinegar causes the small dissolved particles to clump together, making a solid called *curd*. The liquid part is called *whey*.