Wheat and Dairy

Theme Overview: Wheat is the top grown crop in Oklahoma. Wheat is grown on more land worldwide than any other crop, and is third in total world production following rice and corn. Wheat supplies about 20% of food calories for people around the world. Besides being high in carbohydrates, wheat contains valuable protein, vitamins and minerals. Bread was first made nearly 12,000 years ago and is believed to be the ancestor of all prepared foods. Bread is such a powerful food, ancient Egyptian governments controlled citizens by controlling bread production and distribution.

Dairy is the 5th largest agricultural commodity in Oklahoma, generating $177 million a year, according to Oklahoma Ag in the Classroom. Milk is the official state drink of Oklahoma. Milk is one of the lowest-costing and more nutritionally-dense foods. It is the only food that contains all nine essential nutrients. Milk is also rich in important vitamins, including vitamin A, vitamin D, and vitamin B12. Milk even provides 1.5 times more hydration than water. In ancient cultures, milk was considered 'food of the gods'. Foods considered dairy products include milk, yogurt, cheese, and lactose-free milk. Foods high in fat content but low in calcium are not considered dairy items, even if they are produced from milk. These foods include butter, cream cheese, sour cream, and cream.

Food allergies: Recipes can be modified to accommodate food allergies and preferences. The recipes included in Food, Fun, 4-H are intended to introduce new recipes and food combinations to participants.

Recommended Preparation Order:
1. Ranch Carrots 2. Haystack Cookies 3. Ham & Swiss Baked Penne 4. Spinach Apple Salad

Reporting: August is the final month of Food, Fun, 4-H in Our Great State. Participants who submit an August report will not receive a free utensil for the following month since we are at the conclusion of our program. However, those who submitted reporting all four months of FF4H in Our Great State, including August, will be entered into a drawing for a grand prize. Submit your August reporting by September 10 to be entered into the drawing. Reporting is easy and takes less than 5 minutes. Email the following to healthyliving@okstate.edu:

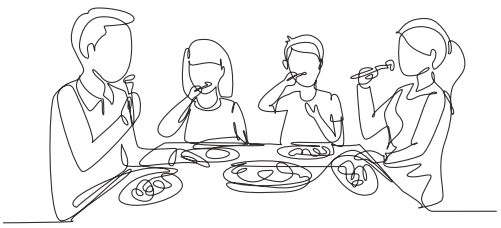
- 1 photo preparing a dish from our August recipes
- 1 photo of family meal

Complete and include in the email the following statements about this month's theme, activities and recipes:

- "I like..."
- "I wish..."
- "I wonder..."

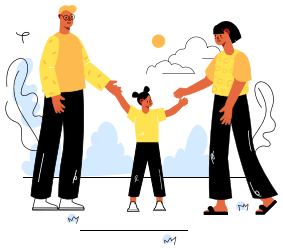
Dinner Conversation Topics:

- What are you looking forward to learning this year?
- If you could take a class in anything, what would it be?
- What makes you feel good about yourself when you're at school?
- What was your favorite Food, Fun, 4-H dish this summer?



Family Challenge:

- Go unplugged; enjoy a day with your family and no screens
- Read a book as a family
- Find and prepare new recipes together
- Go stargazing
- No phones during dinner
- Try at least one bite of everything



Fair Entry Idea: Get ready for a new 4-H year! Make a promotional poster promoting your 4-H club or Food, Fun, 4-H to tell all your friends about what you are learning and doing in 4-H. Enter your poster in section 4300 in the appropriate grade class: grades 3-5 enter in class 1, grades 6-8 enter in class 4, grades 9-12 enter in class 7.

Oklahoma Fun Fact: Oklahoma's state capitol building is the only capitol in the world with an oil well under it. Although its legal name is Capitol Site No. 1, it is referred to as Petunia No. 1 because it was drilled in the middle of a flower bed.

Let's Learn About Wheat!

Amount of Wheat: Oklahoma's wheat crop was valued at $478.4 million in 2021. As of 2020, Oklahoma ranks 6th in the U.S. for wheat production and 2nd in hard red winter wheat. This year's drought greatly affected Oklahoma's wheat production. The USDA National Agricultural Statistics Services estimated Oklahoma farmers produced 64.8 million bushels of wheat this year, which is down 44% from 2021. Bushels are a unit of measurement for crops. A bushel's weight varies from each crop. A bushel of wheat weighs 60 pounds. A bushel of wheat yields about 42 pounds of all-purpose flour or 60 pounds of whole wheat flour.

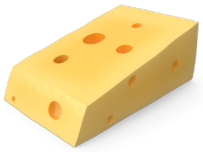
About Wheat: According to Statista, wheat is the second most important grain produced in the U.S., following only corn. Most of the wheat grown in Oklahoma is hard red winter wheat. This type of wheat is typically used to make bread. Whole wheat and all-purpose flour are made from wheat kernels. A wheat kernel is divided into three parts–bran, endosperm and germ. All-purpose flour is made using only ground endosperm. Whole wheat flour is made using the entire wheat kernel. Most wheat produced is used for human consumption. Other wheat foods produced include bulgur, wheat germ, wheat bran, wheat berry, cereal, and cracked wheat. Wheat used for animal feed is a by-product of the flour milling industry. Common wheat by-products include cosmetics, pet foods, paper products, soap, trash bags, concrete, alcohol, oil, and paste.

Raising Wheat: Wheat is well adapted to harsh environments and is grown mostly on windswept areas too dry and cold for rice and corn production. Unlike most crops, hard red winter wheat is planted in the fall and harvested late May and through the summer. The crop grows about six inches before the frost comes. When the weather gets cold, the plant stops growing. On most Great Plains farms, cattle graze on young wheat plants while they are dormant. The plant grows back and is not damaged by proper grazing. Warm, damp spring days make the plant grow quickly. Some wheat varieties can grow to be seven feet tall, but most are between two to four feet tall. An acre can produce about 2,500 loaves of wheat bread. It takes a combine nine seconds to harvest enough wheat to make 70 loaves of bread.

Let's Learn About Dairy!

Number of Dairy Animals: As of January 2021, Oklahoma had around 41,000 dairy cattle according to the USDA National Agricultural Statistics Services. In 2020, Oklahoma's dairy industry produced 733 million pounds of milk. On average, each Oklahoma diary cow produced 17,452 pounds of milk in 2020. In gallons, an Oklahoma dairy cow produces an average of 6.8 gallons of milk per day, that's more than 2,476 gallons a year.

About Dairy: Milk is produced after a mammal gives birth. Each species produces its own special blend of milk best suited for that species's babies. Dairy cattle produce 81 percent of the world's milk. Buffalo contribute 15 percent, goats with 2 percent, sheep with 1 percent, and camels with 0.5 percent. Yaks, reindeer, horses and donkeys account for the remaining share. According to the Food and Agriculture Organization of the U.N., about one-third of milk produced in developing countries comes from buffaloes, goats, camels and sheep. Almost all milk in developed countries is produced by dairy cows.



According to legend, cheese was discovered thousands of years ago by an Arabian traveler who placed milk into a pouch made of a sheep's stomach. During the day's journey, the combined action of the sun's heat and the enzymes in the lining of the stomach changed the milk into a snowy white curd of cheese and the thin liquid called whey. Now, hundreds of varieties of cheese are produced. Cheese has little flavor when first produced. It takes three months to make mild cheese and at least a year to make sharp cheese. It takes about 10 pounds of milk to make a pound of cheese, 12 pounds of milk to make a gallon of ice cream, and 23 pounds of milk to make a pound of butter.

Raising Dairy Animals: There are seven breeds of dairy cattle: Ayrshire, Brown Swiss, Guernsey, Holstein, Jersey, Milking Shorthorn and Swedish Red & White. The breed that produces the most milk is the Holstein. A dairy cow must be milked twice a day to prevent milk build up. If milk build up does occur, it makes a cow feel uncomfortable. Milking machines are widely used to milk cows. It can milk a cow in just 5 minutes. Dairy farms have become more efficient than in the past. Cows produce twice the milk today than in the 1960s. Per the Animal Agriculture Alliance, dairy farms use 10 percent of the land, 23 percent of the feed, and 35 percent of the water that was required to produce the same amount of milk in 1944. Cows producing milk need to eat and drink more than cattle not milking. A cow in milk consumes about 100 pounds of feed a day and will drink between 30 to 50 gallons of water a day. Over 98% of all U.S. and Oklahoma dairy farms are family-owned.

In Our Great State

Cooking Whole Grains and Pasta

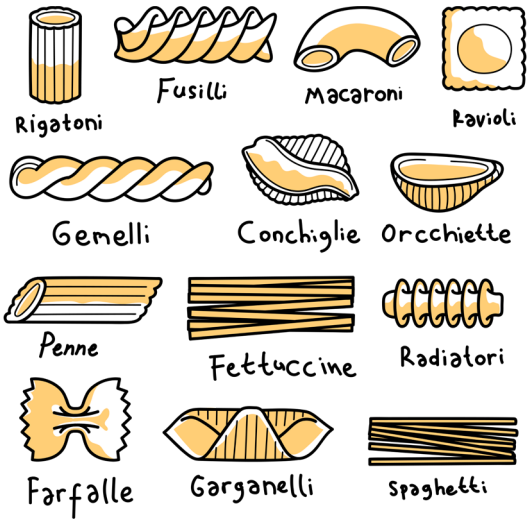
Cooking Whole Grains

- Cooking times and techniques may vary by whole grain. For best results, follow package directions.
- Using a pot with a lid, add water and place on high heat. Bring water to a boil.
- Add grain, stir and bring to a boil.
- Turn heat down to low. Place lid on pot. Do not take lid off or stir grains while cooking unless package directions say otherwise.
- After 25 minutes, remove from heat. *Times may vary. Refer to package directions.*
- Use a fork to fluff. This allows grains to separate, release unwanted moisture, and adds air. It also prevents grains from clumping into large chunks.
- Place lid back on pot. Let stand for 5 minutes, then serve.

Examples of whole grains: barley, brown rice, buckwheat, bulgur (cracked wheat), corn, popcorn, millet, oats, rye, quinoa, and wheat.

Cooking Pasta

- Add water to a large pot. A general rule of thumb is to add 4 quarts of water for every pound of pasta.
- Place on high heat and bring water to a boil.
- Add pasta to boiling water.
- Stir pasta frequently while cooking. This prevents pasta from sticking together.
- Follow cooking time on package.
- Taste pasta before draining to ensure it is done. It should be slightly chewy.
- Drain in colander. Be careful of the steam and hot water.



Source:

Happy Healthy. Cook Whole Grains and Pasta. Mississippi State University Extension. Retrieved from http://happyhealthy.extension.msstate.edu/tips-videos/cook-whole-grains-and-pasta

Reducing Food Waste

According to the U.S. Food and Drug Administration, food takes up more space in U.S. landfills than anything else. The U.S. Department of Agriculture estimates between 30 to 40 percent of food grown, processed, transported and purchased by consumers goes to waste. Although food is wasted at every stage, the highest waste comes from consumers. More than 80% of Americans discard perfectly good food because they misunderstand expiration labels. Reducing food waste is a key factor to saving resources and money. Below are a few tips on what you can do to reduce your household's food waste.

Plan

- Stay organized. Arrange items so the oldest foods are in the front. These items are then easy to see. Use oldest foods first.
- Plan meals and snacks. This help you determine what you need to buy and how to use the food you already have. Plan for leftovers. If you do not want to eat the same thing multiple times a week, use your leftovers by adding them to a new dish.
- Check what you already have. Look in the fridge, freezer and cupboards for foods that need to be used. Include those items in your meal plan.
- Make a grocery list. Write down the item and amount needed.

Shop

- Buy only what you need. If you buy extra food, have a plan for how you will use or store it before it goes bad.
- Check dates on food. When purchasing perishable food with a short use by date, plan to cook or freeze it quickly.

Cook

- Create a ready-for-soup container. Add cooked or raw vegetables to a freezer bag when available. Once full, use those items to make a stew or soup. Leftover meat and beans can also be added, or mixed with rice, pasta or vegetables.
- Cut up damaged or blemished fruits and vegetables and use for salads or snack cups.
- Use nearly-too-ripe fruit in smoothies, muffins, cobblers, crisps or yogurt.
- Nearly stale bread can be used for French toast, stuffing, breadcrumbs or croutons.

Storage Tips

Dairy

- Refrigerate within two hours of purchase.
- Store milk in the fridge's main compartment; it is colder than the door.
- Milk generally stays fresh for a week after opening if stored properly.
- Refrigerate all cheeses in their original package until opened. After opened, wrap cheese tightly to prevent mold from growing.

Fruits and Vegetables

- Have a plan for using fresh berries, cherries and salad greens as they spoil quickly. Freeze fresh fruit and vegetables if it will not be eaten soon.
- Store fruits and vegetables in different fridge drawers. Generally, fruits like low humidity and vegetables like high humidity.

Protein

- Eggs will keep in the fridge for three weeks after its sell-by-date. Store in the main compartment; it is colder than the door.
- Store fresh meat on the lowest self of the refrigerator to prevent any juices from contaminating other foods.
- Raw ground beef stays fresh in the freezer for three to four months. Larger, whole muscle cuts will be good for four to 12 months. Frozen foods remain safe indefinitely, but quality may be affected. If storing meat for longer than two months, place the store package inside a plastic freezer bag.

Grains

- Store bread in airtight container at room temperature. Storing bread in a fridge can cause it to dry out.
- If not using the bread soon, freeze in an airtight freezer package and use within six months.
- Whole grain products like pasta and rice can be stored at room temperature.
- Whole grain flour is best kept in the freezer. If stored at room temperature for too long, it may go rancid.

Source:
Reducing Food Waste at Home. (2018). Spend Smart. Eat Smart. Iowa State University Extension. Retrieved from https://store.extension.iastate.edu/product/15386