



FN2123-1

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# Specialty Crop Fruits and Vegetables

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## Lesson 1: North Dakota Fruits and Vegetables

### What you need for this lesson:

- Match 'em Up Cards (copy and cut)
- Fruits/vegetables of choice (if applicable)

### Objectives:

- Participants will learn about common fruits and vegetable grown in North Dakota.
- Participants will be able to classify fruits and vegetables based on the part of the plant they come from.

### Introduction:

“Field to Fork” focuses on how our food is grown and makes its way to our table. We will be talking about the fruit and vegetable specialty crops that are grown in North Dakota and neighboring states. We will learn about the process they go through to get to our plate and ways that we can consume these foods to keep us healthy and strong.

### Fruits and Vegetables: (10 minutes)

Lots of fruits and vegetables are grown in North Dakota. They can be grown in backyards, or in fields by farmers.

Some vegetables grown in large quantities by North Dakota farmers include potatoes and edible beans. In 2017, 75,000 acres of potatoes were grown in North Dakota. That's the size of about 75,000 football fields! You even can grow your own fruits and vegetables in a garden at home. Let's look at a list and figure out which ones you could grow in your backyard.

*List the following on the board or name them, and have participants discuss if the fruit/veggie can be grown in North Dakota and why. Note: Students also have this list in their handout and are encouraged to follow along.*

Pineapple, sweet corn, avocado, onions, apples, potatoes, oranges, cabbage, tomatoes, kiwi, strawberries, squash, beans, pomegranate.

### Fruit and Vegetable Classification (10 minutes)

Fruits and vegetables can be classified in multiple ways. We can classify them according to class, which is what part of the plant they are from. Classes that we categorize fruits and vegetables into are roots, stems, flowers, fruits, leaves and seeds. To practice classifying plants, we are going to play “Match 'em up,” so please listen carefully to directions.

We will disperse six Match 'em Up cards with the six main classes and a definition for each class. The other cards have pictures of

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## Lesson 1: North Dakota Fruits and Vegetables

different fruits and vegetables on them. The goal is to correctly match the fruits and vegetables to their classes.

**Roots** – Grow underground to collect nutrients and water for the plant; they also hold the plant in the ground

- radish, carrot, potato

**Stems** – Support the plant so that it stands; also have an inner system that helps transport nutrients throughout the plant

- celery, asparagus

**Flowers** – Often brightly colored to attract bees to the plant so that it can produce fruits

- broccoli, cauliflower

**Fruits** – Grow from flowers on the plant and contains the seed

- squash, strawberry, cucumber, tomato, pumpkin

**Leaves** – Collect light for the plant and helps produce food for the plant

- lettuce, spinach, cabbage

**Seeds** – Part of the plant that may be used to grow a new plant under the right conditions

- corn, peas, beans

*After completion of Match 'em Up, invite students to complete the classification matching on their own in their handout.*

### Food Activity (15-20 minutes)

Have a variety of specialty crop fruits and vegetables for students to try. (Note: Remember to consider food allergies.) Prepare samples ahead of time and provide enough for each participant to try each type of fruit or vegetable.

Have students wash their hands prior to doing this activity.

As students try each fruit or vegetable, have them determine:

- If it is a fruit or vegetable
- What part of the plant it is from
- What color group it fits into (red, yellow/orange, green, blue/purple or white)

Specialty Fruit/Vegetable examples to taste test:

- Apples (have three varieties for them to compare), strawberries, raspberries, grapes, leafy greens (lettuce, spinach, beet leaves, etc.)

### Closing

Today we learned about different fruits and vegetables. Throughout the next few lessons, we are going to learn about how these fruits and vegetables are grown and make their way to our plates.

### What you need for this lesson:

- Soil
- Foam cups or planter
- Specialty crop seeds (beans, onions, lettuce, etc.)

### Objectives:

- Participants will recognize what specialty crops are and which ones are grown in North Dakota.
- Participants will implement learned knowledge to develop a plan to produce their own vegetables.

### Introduction:

Today we are going to talk about specialty crops. Can anyone tell me what you think specialty crops are? (Take answers). Great answers! Specialty crops are different types of crops that are grown and need to be harvested in special ways. The crops often are grown in smaller quantities, or amounts, because they may take longer to harvest.

### North Dakota Specialty Crops

Many types of crops are grown in North Dakota. Some of the main ones are soybeans, corn and wheat. However, some crops are grown in smaller quantities and are classified as specialty crops. Do you have any ideas of what some of these crops may be?

*Some of the specialty crops grown in North Dakota are squash, leafy greens, onions, grapes, strawberries, apples, pumpkins, raspberries, potatoes and corn.*

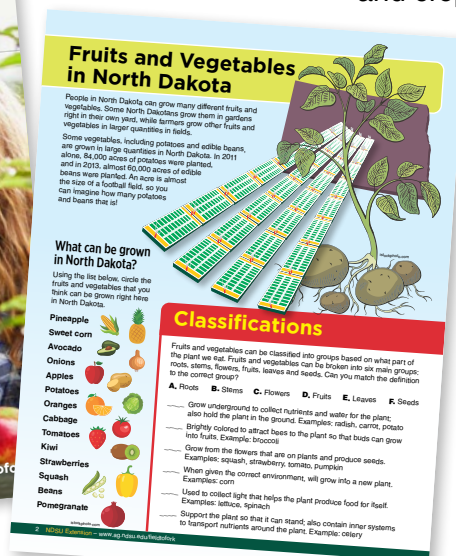
### Growing Fruits, Vegetables and Specialty Crops

All food, including specialty crop foods, go through the agriculture cycle. The agriculture cycle is a series of steps that products go through, from being a seed to being food on our plates.

The first step of the cycle is called “production” because in this step, food products are grown, or produced. Whether it is growing in a large field or in your backyard, it still is considered the production step of the cycle.

Who wants to produce our own specialty crops? We are going to choose some different crops that we would like to grow, which means we will be producers!

- Decide whether the students will plant their own specialty crop or if this will be a class “garden.” Provide foam cups or a planter, depending on the decision.
- Have soil to use for planting; bagged soil or black soil will work for this.
- Follow directions on given seed packets. You can provide one type or multiple types to sow seeds into the soil. Keep seeds moist until they emerge, and follow seed packet instructions to care for the seed/plant. Be sure to remember sunlight, watering rate, etc.
- Discuss with students the conditions that may influence the growth of the plants. If time allows, talk about each of the specialty crops grown and how they are used.
- If time in the year allows, the plants may be grown and crops may be harvested.



### What you need for this lesson:

- Around the U.S. cards

### Objectives:

- Participants will classify processing and distribution and share examples of each one.
- Participants can explain why processing of fruits and vegetables sometimes is necessary, and the reason for importing and exporting.

### Introduction:

Does everyone remember what the first step in the agriculture cycle was? That's right, production! After specialty crops such as fruits and vegetables are done growing, they must go through a few more steps of the agriculture cycle before reaching our plates.

*List the words "processing" and "distribution" on the whiteboard.*

Write the next two steps of the cycle on the board: "processing" and "distribution." Who can tell me what they think these steps include?

*Take answers and have discussions with students about their thoughts and their thought processes.*

### Processing

Fruits and vegetables are naturally perishable foods, which means that they spoil or go bad in a short amount of time. Many foods are processed to keep them safe to eat longer.

Some examples of processing include canning, freezing and drying. This can be done by businesses or in your own kitchen. Food processing also can be as simple as washing a head of lettuce that came from the field and placing it in a container. This is done to keep it fresh until a customer buys it at a grocery store and eats it.

Let's create a list of different specialty crop foods that have been processed. Who has some ideas?

*Compile a list of student responses on the whiteboard. Some examples include: jelly/jam, tomato sauce, pickles, raisins, banana chips and apple sauce.*

### Distribution

After food is processed and ready to be consumed, it must be transported, or distributed, to grocery stores, farmers markets or even other countries, so that it can be available for those who are going to end up eating or using the food.

Distribution allows us to have access to fruits and vegetables that we can't grow here because of the climate. We sometimes get these foods from other parts of the U.S., or even from other countries around the world.

### Activity — Around the U.S.

Processing and distribution are two big pieces of the agriculture cycle. Let's get some practice with how this all works with an activity:

Fruits and vegetables can be grown in many states. Why do you think some fruits or vegetables grow better in certain states?

Distribute Around the U.S. cards. Each participant should receive at least one card. (The lesson plan includes 12 fruit/vegetable cards and 12 state cards.) Have the students move about the room for a set amount of time (such as 5 minutes). Have them exchange cards according to which state grows which fruit/vegetable best. Have them place the pairs of cards side by side on a table. Review the answers and rearrange the cards if needed.

Were any of the answers surprising?

### Answers to Around the U.S.

These are a few of the "famous" fruits or vegetables of some of the states:

Oranges – Florida	Russet Potatoes – Idaho
Cabbage – Alaska	Corn – Iowa
Avocados – California	Blueberries – Maine
Strawberries – Delaware	Cranberries – Massachusetts
Pineapple – Hawaii	Honeycrisp Apples – Minnesota
Georgia – Peaches	Beans – North Dakota

### Closing

Today we talked about and experienced just a little bit of the processing and distribution steps of the agriculture cycle. These two steps often are forgotten but are an important part of bringing food from the fields to our plates.

Processing food can be done right in our own kitchen or at big companies. Distribution happens all around us. Often, we don't realize that it is happening. These steps lead to the final step of the cycle that we will talk about in the next lesson. It is the step that we are most familiar with: consumption.

### What you need for this lesson:

- Food Safety Activity cards
- MyPlate poster

### Objectives:

- Participants will identify the nutrient benefits that they receive from consuming fruits and vegetables.
- Participants will recognize key steps to food safety.
- Participants will learn about the suggested amounts of foods that their bodies need to function correctly.

### Introduction:

We have talked about how our food is grown or produced in the production step. Next, food goes through processing to prepare it for human consumption. We also talked about how food is distributed throughout the country, or even the world, to reach the consumers.

Who can tell me what the word “consumer” means? A consumer is the person who consumes or eats the food. That brings us to the last step of the agriculture cycle: consumption.

### Consumption

Eating fruits and vegetables, such as the ones grown as specialty crops in North Dakota, are important for our health. Fruits and vegetables provide our bodies with important nutrients such as vitamins and minerals.

To ensure that we get the nutrients from vitamins and minerals in a safe way, handling fruits and vegetables safely is important to prevent food poisoning. We can do simple things to keep all our food safe to eat.

Can you name some things we do to keep our food safe to eat? (*Take suggestions.*) Safe handling of our food is very important and keeps us from getting sick. We have six steps to keep our food safe to eat. They are check, clean, separate, cook, chill and throw away.

- Do nutrition activity on handout and discuss.

### Activity

Present students with the scenarios that they will have to solve.

- Maria got home after school and realized that *she still had apple slices leftover from breakfast sitting on the counter*. She decided the apple slices would be a good after-school snack even though the pieces had turned slightly brown.

Answer: Maria didn't refrigerate cut fruit.

- Ben had just finished preparing chicken breasts to go in the oven for dinner. He also decided that he should cut up some carrots to cook for a side. He realized that the *cutting board still had some chicken juices on it, so he decided to get a clean cutting board and knife out to use for his carrots*.

Answer: Ben avoided cross-contamination.

### MyPlate

Does anyone know what tool has been created to help us remember the correct amount of fruits, vegetables, dairy, protein and grains to have on our plates at each meal? It is called MyPlate.

According to MyPlate, we should fill one-fourth of our plate with fruits, and one-fourth of our plate with vegetables. That means half of our plate should be filled with fruits and vegetables.

*Display the MyPlate graphic on the board/in the front of the room, talk through each category with the students and have them list examples of foods in each of the categories. If time allows, create a breakfast, lunch and dinner example of meals that satisfy the MyPlate requirements.*

### Closing

Today we learned about the final step of the agriculture cycle, consumption. This allows us to complete the entire cycle of production, processing, distribution and consumption. We also were able to identify the purpose of MyPlate and the importance of getting a well-balanced diet to provide us with all of the nutrients that our bodies need.

Optional: taste test recipe of choice at [www.ag.ndsu.edu/fieldtofork](http://www.ag.ndsu.edu/fieldtofork)