

6. Agriculture, Food and Natural Resources Cluster - Farms, Crops and Careers (4 hours)

Purpose/Abstract: To introduce students to the careers related to farms and crops in the Agriculture, Food and Natural Resources Cluster.			
NCCCS Adult Education Standards: R.2.3.4, R.3.2.1, R.3.2.3, W.1.2.1, S.1.1.1, M.1.1.3			
Learning Objective: By the end of the session, students will be able to: <ul style="list-style-type: none"> • Describe the growing process from seed to harvest for apples • Identify agricultural careers available in North Carolina • Create a profile of a farmer using student-friendly materials 			
Soft Skills	communication and teamwork	Resources	<p>Skills to Pay the Bills (STPTB) (for instructor reference to define each soft skills category)</p> <p>Agriculture, Food and Natural Resources Cluster (direct students to this page for the group activity)</p> <p>OneStop Career Clusters (for instructor reference)</p> <p>Handouts:</p> <ul style="list-style-type: none"> • Vocabulary Words - 1 for each pair • Reading Comprehension Handout - 1 for each student • Career Research - 1 for each group • Farmer Profile - 1 for each student
Additional Materials <ul style="list-style-type: none"> • Video: GPS for Success Agriculture, Food and Natural Resources PBS • Video: https://www.youtube.com/watch?v=Vxrrl9bDrXQ • Vocabulary Words, one for each pair • Reading Comprehension handout, 1 for each student (print scaffolded version as needed) • Career research, one for each group • Farmer Profile, one for each student • Art supplies (glue, glitter, markets, etc.) • OPTIONAL but encouraged: Place value unit manipulatives • Pencils, paper • Computers for student use 			
Icons	 Activity	 Check-In	 Review

PREPARATION

- Ahead of the lesson, assign students the Education.com this [lesson](#) in addition, and the following games and download/print the worksheets given below.
 - Games:
 - [Elliot's Museum: Addition and Subtraction Word Problem Story](#)
 - [Three-digit Addition Word Problems](#)
 - Worksheets:
 - [Word Problems: Addition and Subtraction | Worksheet | Education.com](#)
 - [Two-Step Addition & Subtraction Word Problems Check-In | Worksheet | Education.com](#)

- Review the [Instructional Support Guide](#) and print/prepare referenced scaffolds.
- Print handouts.
- Familiarize yourself with the [OneStop Career Clusters](#).
- Familiarize yourself with [O*NET](#)
- Familiarize yourself with [Skills to Pay the Bills](#), though it won't be used directly in this lesson.

INTRODUCTION (30)

Welcome students to the class!

Begin by asking students what they know about farming and agriculture, maybe even specifically about apples. Consider using these questions to help students share.

- Have you ever visited a farm or apple orchard before? If so, what did you see or do there?
- What are some different types of jobs that are involved in the agriculture and food industry?
- How important do you think it is to have a strong understanding of where our food comes from and how it is produced?

Explain that this lesson will introduce students to the agriculture, food, and natural resources cluster and that they will explore a few jobs related to farms and crops.

Project this video on the agriculture, food and natural resources cluster - [GPS for Success | Agriculture, Food and Natural Resources | PBS](#)

Guide a short discussion on what they watched using the following questions:

- What are some modern technologies used in farming and agriculture today?
- Why is it important for farmers to have the right skills and training for their jobs?
- What are some ways that farmers can protect the environment while still growing crops and raising animals?
- How can people in the community support local farms and farmers?

Share the learning objectives for the lesson and explain how they will be met.

Instructor notes:

Consider turning on subtitles, replaying specific parts, or pausing to answer any questions while playing the video.

VOCABULARY, READING, and WRITING (60 minutes)

Remind students that throughout your time together, every lesson will focus on soft skills.

VOCABULARY (20 minutes)

Write these terms on the board or project them on a screen:

- seed
- harvest
- crop
- farmer
- soil

- livestock

Assign partners and distribute the Vocabulary Words handout to each pair.

Instruct them to work together to match each term to the correct definition in the handout.

Once the students have matched the words to the definitions, ask them to form simple sentences with the correct punctuation for each term.

Allow 15 minutes for this activity, and encourage students to use their creativity and imagination.

Have 3-4 volunteer pairs share their sentences with the rest of the class.

Instructor notes: Consider having a set of images for each term for students to understand the terms better. If pairs complete this activity early, challenge them to create a short story that includes all these terms.

READING COMPREHENSION (20 minutes)

Ask students to stay with the same partner for the reading comprehension activity. Provide each student a copy of the comprehension passage and questions.

Instruct the pairs to take turns reading the article aloud to each other. Encourage them to stop and ask questions or clarify information as needed.

After each partner has had a chance to read the passage, ask them to individually write the answers to the comprehension questions in the handout.

Once the students have finished filling in the answers, have them share their answers with their partner and discuss any differences or similarities in their interpretation of the passage.

Allow 20 minutes for this activity.

WRITING (20 minutes)

Tell students that North Carolina is well known for its apple orchards, and to help them understand how apples are grown, they will watch a video. Play this [video](#) and ask students to take notes as they watch. Instruct students to independently write a short summary of the information from the video about how apples are grown and how bees help. Students can also choose to draw the growing process of an apple from seed to fruit.

REFLECTION (10 minutes)

✓ Facilitate a short discussion about the passage and encourage students to share their responses to the comprehension questions.

Instructor notes: Not all students might be willing/able to write, so allow them to draw their responses or share them verbally.

Lower Level

Higher Level

Provide these questions to help students structure their summary.

What is the main topic of the video?

What are some steps involved in growing apples?

How do bees help in the process of growing apples?

What are some ways that apples are used in food and other products?

After watching the video, have students conduct further research on the process of growing apples and the role of bees in pollination. They can present their findings in a written report

MATHEMATICS (45 min)

Tell students that adding and subtracting numbers using place value concepts is an important skill. Ask 2-3 volunteers to share what they remember about place values and adding or subtracting numbers by aligning the place values.

Have students share where they might use addition or subtraction if they were apple farmers.

Solve the following problems on the board and explain how addition and subtraction will help farmers.

1. An apple orchard has 120 trees. If 25 more trees are planted, how many trees will the orchard have in total?
2. A farmer harvested 480 apples from his orchard. If he sells 267 apples at the local market, how many apples does he have left?

Assign this [lesson](#) and have students complete the following games before assigning them the worksheet.

- [Elliot's Museum: Addition and Subtraction Word Problem Story](#)
- [Three-digit Addition Word Problems](#)

Distribute this [worksheet](#) and solve the first problem on the board and ask students to fill their sheets as you take them through the steps.

Ask them to complete the rest of the worksheet independently.

Circulate the classroom to provide assistance as needed.

Allow 30 minutes for this activity.

 REFLECTION (10 minutes)

Review answers with the class, discussing common mistakes or misunderstandings.

Wrap up this section by asking students to share how understanding place values in relation to money will help them in their lives.

Lower Level

Higher Level

Consider pairing students up if they need support with the word problems. Extend the time if required.

Provide an additional [worksheet](#) if students finish the previous worksheet before the end of the allotted time.

GROUP PROJECT (60 min)

RESEARCH and PRESENTATION

Inform students that they will work in small groups to research careers in the different pathways within the Agriculture, Food and Natural Resources Cluster. Tell students that for this lesson, they will focus on a few occupations within the Agribusiness Systems, Plant Systems and Power, Structural and Technical Systems pathways. Emphasize that they will explore other pathways and careers in future sessions.

Divide the class into groups of 3-4 students.

Assign each group one of the listed occupation groups under the following pathways within the agriculture, food and natural resources cluster from <https://tools.nccareers.org/careerguide/>

- Agribusiness systems
 - Farm labor contractors
 - Farmers, Ranchers, and Other Agricultural Managers
- Plant systems
 - Farmworkers and Laborers, Crop, Nursery and Greenhouse
 - Pesticide Handlers, Sprayers, and Applicators, Vegetation
 - Soil and Plant Scientists
 - Tree Trimmers and Pruners
- Power, Structural and Technical systems
 - Agricultural Equipment Operators
 - Farm Equipment Mechanics and Service Technicians

Ask groups to research the education and training requirements, job duties, and potential earnings for their assigned pathway.

Distribute the research handout with guiding questions to help students structure their presentations.

- What are the job duties of this occupation?
- What education or training is required to work in this occupation?
- What skills or qualities are important to have for this occupation?
- What are some of the challenges and rewards of working in this occupation ?
- What are some of the different job titles or roles within this occupation?
- What is the job outlook or demand for this occupation in North Carolina?

Have each group create a poster on their assigned occupation group and present it to the class.

Allow 30 minutes for research and 30 minutes for groups to present their posters.

Instructor note: Students may not be able to summarize all the tasks, skills and work activities for the assigned occupation group within the allotted time. You can help them identify the key information to look for under each occupation group. Encourage them to visit this website in their free time to explore these occupations in more detail.

Lower Level

Provide visual aids, such as pictures or diagrams, to help students understand the different pathways within the agriculture, food, and natural resources cluster.
Simplify the guiding questions to help students structure their research and presentations

Higher Level

Encourage students to explore current issues or trends in the assigned occupation groups using videos or articles.

INDEPENDENT WORK TIME (30 min)

Ask 2-3 volunteers to share what they know about farmers. Add to their responses with information on important tasks a farmer might be responsible for and explain that they will be creating a profile of a farmer using student-friendly materials.

Provide the students with a range of materials to use, such as poster paper, markers, cut-out pictures, or drawings, and explain that they should use these to create the profile.

Explain that the profile should include details about the farmer's education, job duties, and daily life, and encourage students to be creative with their presentation.

Set a timer for 20 minutes for this activity and allow students to work independently or in pairs.

Once the profiles are complete, ask volunteers to share their work with the class. Encourage them to share why they chose certain images or words to create the profiles.

Lower Level

Provide sentence starters or fill-in-the-blank outlines to guide them in writing the short story. For example, "My farmer's name is _____. They live in a _____ and work on a _____ farm."
"One thing my farmer grows is _____ and it takes _____ months to grow from a seed."
"My farmer's job duties include _____, _____, and _____."
"My farmer wakes up at _____ o'clock every morning and starts their day by _____."
"My farmer loves to _____ in their free time."
"My farmer went to school for _____ years to learn how to be a farmer."

Higher Level

Encourage them to use descriptive language and details paint a vivid picture of a day in the life of a farmer and Include information about how farmers play an important role in all of our lives.
Allow them to peer review and provide feedback on their classmates' profiles.

"Something my farmer needs to be good at is _____."

"My farmer's favorite thing about their job is _____."

"One challenge my farmer faces is _____ and they overcome it by _____."

"If I were a farmer, I would grow _____ and my favorite part would be _____."

Encourage them to use pictures or drawings to represent the events in their story.

Provide one-on-one assistance during the writing process.

WRAP-UP & REFLECTION (15 min)

◊REVIEW

Ask students to share how communication and teamwork helped during their research on the occupations. Highlight that in occupations in the agriculture, food, and natural resources cluster, teamwork and communication are important people skills to have as most of the jobs involve working with other people. Ask volunteers to share their thoughts. Clear communication and understanding how to work with others will help students be efficient in the jobs they choose.

Have 1-2 volunteers who were interested in the agriculture cluster in the previous sessions share what they like about the sector and what they're looking forward to learning more about.

Tell students that in the next couple of lessons, they will continue exploring this career cluster. Ask them to bring a stuffed animal to class for the next lesson, as they will explore careers in this cluster related to caring for pets.

Distribute exit slips to students.

Ask for a few volunteers to share their reflections.

Collect and review the answers.

Instructor notes:

Inform students that the reflection slip will be the same after every lesson. Take some time to review each question on the slip and pause for student questions. Provide any assistance completing the slips for this and the next few classes until students are comfortable with the process.

Vocabulary Words

Name: _____

Date: _____

Directions: Match each word in column A with the correct definition in column B. Create a sentence for each of the vocabulary words in the space below.

Matching

Column A	Column B
Seed	A plant that is grown for food or other products
Harvest	Domesticated animals, such as cows, pigs, or sheep, that are raised for food, wool, or labor.
Crop	A small object produced by a plant, from which a new plant can grow.
Farmer	The material that plants grow in, made up of rock particles, minerals, and organic matter.
Soil	The time when crops are gathered from the fields or plants are picked.
Livestock	A person who owns or works on a farm.

Sentences

Reading Comprehension

Name: _____

Date: _____

Directions:

- Read the passage out loud to your partner.
- Write down the answers to the questions in the space provided, independently.
- After writing all the answers, discuss them with your partner.
- Ask your instructor for help if you need it.

Exploring Agricultural Careers in North Carolina

North Carolina is a state in the southeastern United States that is known for its many farms and agricultural jobs. People who work in farming are called farmers. They grow crops like corn, wheat, and vegetables, and raise animals like cows, pigs, and chickens. Farmers have to know how to take care of their land and animals so they can grow and stay healthy.

Other jobs in farming include ranchers, who work with cattle, and agronomists, who study how plants grow and what kind of soil they need. Agricultural engineers design and fix equipment that farmers use to work on their farms. Food scientists study food to make sure it's safe and tastes good. Agricultural educators teach people about farming.

In addition to these jobs, North Carolina also has many other agricultural careers. For example, there are agricultural inspectors who make sure that food is safe for people to eat. There are also farm managers who oversee the day-to-day operations of a farm, and animal breeders who work to produce healthy and high-quality animals. Some people work in the agriculture business, managing the finances and marketing of farms.

All of these jobs are important to the agriculture industry in North Carolina. Without farmers and the other people who work in agriculture, we wouldn't have enough food to eat!

Questions:

1. What do farmers do?	
2. What are some other jobs in farming besides farming itself?	
3. Why is the role of agricultural inspectors important?	
4. What do farm managers do?	

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Name: _____

Date: _____

Directions:

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Questions:

1. What do farmers do?	Farmers are people who...
2. What are some other jobs in farming besides farming itself?	One job related to farming besides farming itself is...
3. Why is the role of agricultural inspectors important?	Agricultural inspectors are important because they..
4. What do farm managers do?	Farm managers are responsible for..

Career Research

Directions:

- In your groups, read about the assigned occupation and discuss the occupation specific information.
- Use the questions given below to help you structure your presentations.

Guiding Questions:

- What are the job duties of this occupation?
- What education or training is required to work in this occupation?
- What skills or qualities are important to have for this occupation?
- What are some of the challenges and rewards of working in this occupation ?
- What are some of the different job titles or roles within this occupation?
- What is the job outlook or demand for this occupation in North Carolina?

Farmer Profile

Directions:

- Create the profile of a farmer using the provided materials.
- Include details about the farmer's education, job duties, and daily life.
- Optional: You can use the format given below to write the profile.
- Use pictures or draw images to complement the text.

"My farmer's name is _____. They live in a _____ and work on a _____ farm. One thing my farmer grows is _____ and it takes _____ months to grow from a seed. My farmer's job duties include _____, _____, and _____. My farmer wakes up at _____ o'clock every morning and starts their day by _____. My farmer loves to _____ in their free time. My farmer went to school for _____ years to learn how to be a farmer. Something my farmer needs to be good at is _____. My farmer's favorite thing about their job is _____. One challenge my farmer faces is _____ and they overcome it by _____. If I were a farmer, I would grow _____ and my favorite part would be _____.

Reflection Exit Slip

In one sentence, describe what you learned in this lesson.

Today, I learned _____.

Is there anything you still need help understanding?

One question I have is...

Circle the emoji that shows how you feel about your mastery of content in this lesson.



Happy



Smart



Confused



Sad



Angry