# Tour Host Guide

## Your guide to educational ag-tivities as a tour host.

Iowa Agriculture in the Classroom

SILOS & SMOKE STACKS NATIONAL HERITAGE AREA

ialf
Iowa Agriculture Literacy Foundation

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# Table of Contents

# Introduction

This publication was made in collaboration between the Iowa Agriculture Literacy Foundation (IALF), The Sawmill Museum (Clinton, Iowa), and Johnson County Historical Society (Coralville, Iowa). It was developed to provide tour sites with information on how to engage guests of all ages both virtually and in-person at their sites.

Providing a tour for a group of people is an exciting adventure that gives opportunity for many. It allows a site to showcase artifacts and information that could be missed if patrons explore on their own. Tours can also engage patrons on a deeper level, increasing learning and questions as they immerse themselves in the site. This type of engagement allows patrons to feel welcomed and the likelihood for them to revisit or share their experience with others. Though tours have many positives, it can be difficult to know how to engage with a group. Which is why this kit was put together; to help you prepare for tour groups.

The toolkit is broken down into four sections: Preparing for a Tour, In-Person Tours, Virtual Tours, and Activities. This organization allows you, the reader, to jump to sections that are most beneficial for you. Throughout the resource you will also find documents (outlines, activity sheets, etc.) for your reference and use. Feel free to make copies or change them to best fit your needs.

# Preparing for a Tour

Providing a tour for a group is an exciting adventure that provides opportunity for many. Most commonly, a group tour is initiated by an outside source such as a teacher, district administrator, or company lead. When preparing to host a tour group it's important to communicate with the requester. You may ask them:

- Number of participants
- Age of participants
- Amount of time they will be at the site
- Are there any mobility accommodations that should be considered
- Are there any participants that have fears that could be encountered on the tour
- Topic they'd like to have covered
- Overall goal from the visit, or what they'd like to get out of the visit
- Are they working with a team and communicating expectations with the team

Having answers to these questions will help focus the tour and make it the best experience for the participants. When participants have a good experience, they are more likely to return to the location and to share it with others.

The rest of this section will provide you tips, tricks, and tools for being a tour location both in-person and virtually.

# In-Person Tour Tips

## General Tour Tips

When conducting a tour in-person, whether for students or adults, there are a few general tips that can help make the experience beneficial and impactful.

- **Be prepared:** consider the overall goal of the visit and develop an outline of how your site can meet that goal. It might be helpful to create a script of what you want to say. This will also help you stay on topic and hit key points. If you want to have participants walk to different locations on your site, walk them beforehand to determine obstacles and how much time is needed.

- **Pacing:** be aware of how fast you are talking. Everyone processes information at different paces. If the information is too fast participants may get lost and not know what's important. This could lead to participants tuning out and not listening. The same goes for too slow. Consider practicing what you want to say beforehand and time yourself.

- **Voice:** participants of a tour can be of varying ages with varying hearing abilities. Be aware of your surroundings and speak up. If people can hear you, they are more apt to stay engaged. Be aware of participant background knowledge and avoid using jargon like acronyms. If you do use jargon, build in a definition while speaking. For example, "Inputs, such as pesticides and fertilizer." Finally, use passion and excitement while talking! Excitement is contagious, and if you're excited the participants will be too.

- **Flexibility:** no matter the level of planning, some things cannot be planned for. For this reason, it's important to be flexible the day of the visit. It's okay if things veer from the original plan.

# Engaging With Students

A common question from tour sites and guest speakers is, "How do I keep students' attention?" Managing students can be a difficult part of any presentation, but there are six simple things you can do to keep students engaged and on their best behavior!

### 1. Have clear expectations for the classroom teacher during the tour or presentation.

It is suggested that you expect them to be engaged and manage misbehaving students. It should not be your role to discipline students. Furthermore, if the teacher is aware of what you are saying they can provide valuable information to students and can refer to it in future lessons.

### 2. Have clear expectations for students during the tour or presentation.

If you want students to raise their hands, tell them. If you want students to only walk, tell them. When students know what is expected right away you can avoid many disciplinary issues. Sure, the teacher may have gone through this with them already, but it never hurts to hear it again!

### 3. Adopt an attention-getter.

You can use a call and response clap (clap a rhythm and wait for students to repeat), bring a rattle, tell students to "put a bubble in their mouth," or speak quietly and say, "if you can hear me, clap once (twice, etc.)". Use this same attention-getter each time and with every presentation. Students will remember it! You can also ask the teacher if they have a specific attention getter they use. This can help students focus.

### 4. Ask questions throughout your program.

With younger students, review what a question is and appropriate ways to ask and answer questions (save stories for the end if there's time!). Use quick polls to gather an understanding of student prior knowledge by asking for a show of hands or thumbs-up/down. Ask open-ended questions with students to let them think critically and creatively. Then, give them lots of time to think or have students discuss with a partner!

After asking a question, have students talk with the person next to them. Then use your attention-getter for students to come back together. Have groups share what they learned. Using group talk is especially helpful when you're trying to gain information on student prior knowledge, when you have an open-ended

question, or when students are reluctant to share out loud. Sometimes students don't know and are afraid of sharing a wrong answer. Talking through it with a partner can increase confidence and build a positive sharing network.

Ten seconds is the recommended minimum wait time when asking a question for an individual to answer before prompting with a follow up question. When allowing partner talk or group talk 1-2 minutes is suggested. You may need to practice your awkward silence tolerance, but you can do it!

**5. Connect to what students are currently learning.**

This can help to make your site information and experience relevant to students, increasing their engagement. Before presenting to students ask the teacher what students are learning about such as vocabulary or concepts. Then, during the presentation connect some of your questions or materials to that information.

**6. Include hands-on activities that include manipulation, demonstrations, movement, or exploration in every tour/ presentation.**

Current movements in education have shifted from a "give-get" method of instruction to "teacher as facilitator" method. This provides room for students to ask their own questions and to engage as a learner. The inclusion of activities can enhance the opportunities for students to ask questions and expand their own knowledge. This may look different from tour to tour, or presentation to presentation, but will keep students excited and paying attention. But – remember not to hand out materials before you want students to use them in case they get distracted! The second half of this guide includes activities that can be incorporated.

Students are goofy, excited, and curious. You will have so much fun working with these young people and engaging them!

## Open-Ended Question Stems

- What conclusions can you make about...?
- How do you know...?
- What do you think will happen if...?
- Why do you think...?
- What evidence do you have...?
- What if...?
- How might this affect...?

# Engaging With Adults

Another common question from tour sites and guest speakers is, "How do I engage with adults?" Engaging with adults can seem intimidating as it might seem that adults know a lot or are closed off from learning. But, engaging adults is much like engaging students and youth. Both audiences want to be entertained and learn. However, how you approach engagement can be different.

Not all adult audiences come with a group that has a similar goal. Asking open-ended questions can provide an idea of what the participants' goals are and prior knowledge. With an understanding of prior knowledge, you can gain insight on jargon that can and cannot be used. Questions like, "what brought you here," "where are you from," or "where do you find connections to [topic] in your life," can help gather information to focus the tour. Questioning can also prepare the guest's mind for what they are about to engage in.

Adults, like youth, like to participate in hands-on activities. Provide something for the participants to do, such as an activity, participate in a demonstration, or a task. This will provide direction for participants, and in turn, will help them feel they are engaging in an experience. You may choose to use the activities provided in this guide or come up with your own.

# Virtual Tour Tips

Virtual field trips are a great way to engage with an audience that is unable to make it to the tour site. Whether people can't visit because of mobility or health issues, cost restraints, or anything in-between, a virtual trip can provide opportunities to those that otherwise cannot visit. Furthermore, a virtual tour is a way to interactively market your location which can increase foot traffic.

These trips use an internet connection (e.g. Wi-Fi, cellular data, etc.) and live video chat such as Zoom, Teams, FaceTime, and Facebook Live to connect with participants. The tour host has one person run the video camera while the other person is the main speaker. The audience then joins on their own device to watch and ask questions through chat features.

This section of the Tour Host Guide will walk you through choosing technology, making a virtual tour plan, engaging participants, and general tips for success.

## Choosing Your Technology

Before doing a virtual tour determine the way participants will join. Is this a private event or is the public welcome? Will this be recorded for future use? Knowing the answer to these questions will help you determine what program to use to host the virtual tour. Though there are many programs available for video chat, the following table describes common ones. No matter the program you choose, be sure to take time to review security measures to ensure your program is not interrupted by unexpected guests. This may include having signup features or either activating or deactivateing cameras and microphones.

| Program | Description |
|---|---|
| **Zoom** | Only the organizer needs the account and can provide the information publicly by sharing a link or can turn on features to require sign up. A total of 2-100 participants can join but does require a paid feature for larger numbers and for times over 40 minutes. This program provides a recording option for later viewing. Participants can use the chat feature or unmute to ask questions and engage. |
| **Facebook Live** | Live video streamed from a Facebook account. Viewers can type in questions or comments into the chat box. There is unlimited reach, and the video defaults to recording and can be viewed on the host's Facebook page after the event.<br><br>Some schools block Facebook, so be sure to identify if the program is blocked before using it. |
| **FaceTime** | All participants must have an Apple device (iPad, iPhone, Mac computer). This program is very easy to use as it is a direct call and requires no web interface. |
| **Microsoft Teams** | A program within Office 365, it provides chat and video options. An account is necessary for the use of Teams. There is a recording feature that can be initiated. Participants can use the chat feature or unmute to ask questions and engage. |
| **YouTube Live** | Live video streamed from a YouTube account. Viewers can type in questions or comments they have into the chat box. There is unlimited reach, and the video defaults to recording and can be viewed on the host's YouTube channel after the event.<br><br>Some schools block YouTube, so be sure to identify if the program is blocked before using it. |

**Once you know the program that will be used, you'll need to choose the best technological equipment for the tour. Each tour will need a video camera and a microphone.**

## Video Camera

Choose a video camera that is simple to use, connects to the internet, and is portable. This could be an iPad, smart phone, or tablet. The video camera should also have access to the program that is being used. For example, if you are using Zoom, the Zoom app should be on the device. Keep in mind that no matter the device you use for the video, holding it horizontal will provide the best image for participants.

## Microphone

Though most video cameras come with a microphone built in, having an external one can improve the sound quality. We suggest using a Bluetooth microphone or microphone with a receiver that plugs into your video camera. This will allow flexibility in movement.

# Writing Your Virtual Tour Plan

The use of a structured outline for the virtual tour helps to keep things moving in a logical manner. Though you can develop this on your own, it's suggested that you work with the group requesting the tour. Below are examples of outlines and a template.

## Example Environmental Day FarmChat® - Cowles Elementary - Friday, April 19

Theme: Conservation
Date: Friday, April 19, 2022
Contact Teacher: Mrs. Anderson
Grade: 2, 4-6 grade sections (55 students) during each session

**Session 1**
9:00 – Start of 1st Session – begin intro discussion in classroom
9:10 – Start Skype
9:35 – End Skype. Wrap-up discussion in classroom
9:40 – Switch groups

**Session 2**
9:45 – Start of 1st Session - begin intro discussion in classroom
9:55 – Start Skype
10:20 to 10:25 – End Skype. Wrap-up discussion in classroom
10:35 – Switch groups

**Discussion Before FarmChat®:**

- What words come to mind when you hear the word Agriculture
- What's grown in Iowa (crop and animals)?
- What are crops grown in Iowa used for?
- What do you think of when I say "Water Quality and Farmers" or "Farmers and the Environment"

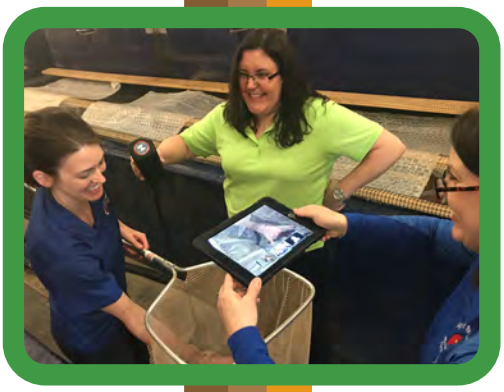
**Discussion After FarmChat®:**

- What do you think of when I say "Water Quality and Farmers" or "Farmers and the Environment"
- List Agriculture Careers

**FarmChat® Outline:**

- Overview of where we are & Introductions (Cindy) 2 minutes
- NRCS Introduction and Overview Nutrient reduction (Jason) 2 minutes
    - VERY Brief Overview of what you do (more covered later)
    - Why is conservation on farm land important?

    - What is nutrient reduction and the Nutrient Reduction Strategy?
- Break for 3 Questions from Students
- Overview of Engler Farm, Candi's family farm, and why conservation and water quality are important to her (Candi)  3 minutes
    - Background of growing up on a farm Candi's family farm –
    - Why are you in Agriculture?  - John Deere & farming
    - Background on your operation
    - Overview of this property
        - When & why purchased?
        - Size?
        - Show picture
        - What do you raise/will you raise here?
- Break for 3 Questions from Students
- Conservation projects at Engler Farm (Candi) 4 minutes
    - Explain Nutrient Reduction and why it is important to you and your family.
        - Nutrients make plants grow.  We want to keep them where the plants grow. As a result of that we keep them out of the water.  Ie: Clean drinking water. Fresh water for fish, and creek life.
    - Overview of what you've done.
        - Waterway project
        - Dry Dam Structure
- Break for 3 Questions from Students
- Walk down to Creek, Show clear water (Cindy)
- NRCS Perspective 2 minutes (Jason)
    - Recap why is conservation on farm land important?
    - How do you work with farmers? –  Info resource and advice, funding available, etc?
    - Any stats on farmer's contributions to protecting natural resources
- 3-5 Questions from students
- Cindy Wrap Up



**Total Talking Time: 13 minutes**
**Total Time for Questions: 10-15 minutes**

## Example Christmas Tree FarmChat® for Facebook Live

**Date:** Monday, September 19
**Time:** Connect at 1:00, End by 1:30 p.m.
**Theme:** Christmas tree farming
**Farm:** Carlson Christmas Tree Farm

**Program Outline**
30 Minutes: Talking Time: 11-12 minutes Questions: 6-8 minutes

**Introduction *(1 minute)*** – *Chrissy*
Introduce and show yourself
Welcome everyone to FarmChat® - Ask folks to type in a comment where they're watching from
Switch camera to farm and Carlson family, introduce

**Overview of farm operation *(4 minutes)* –** *Camera to Dennis*
Brief history of family farm/Overview of farm operation today
Why do you farm? How did you learn to farm?
How big is the field you are at?
How many trees can you plant in one area? How do you organize the farm?

***1 question about Dennis's farm (2-3 minutes)***

**Tree Management Practices *(5 minutes)*** – *Camera to Dennis at first. Show features of the farm when appropriate.*
What do you do during the year or during each season?
What kinds of trees do you grow here? How do they differ?
How long does it take to grow an average Christmas tree?
How should people take care of the trees once they get them home?

***1-2 Questions about tree management (4-5 minutes)***

**Business Practices *(5 minutes)*** – *Camera to Dennis at first. Show features of the farm when appropriate.*
When is your sales season?
What all products do you sell?
Do you try to have certain products ready for trends or specific customers?
Do you hire seasonal help? What kinds of careers are there?

***1-2 Questions about business practices (4-5 minutes)***

**Closing *(1-2 minutes)***
End by reviewing why where farm is and name of farm (name social media handles, website, other pertinent information)
Thank everyone who tuned in!

# FarmChat® Template

**FarmChat® Title:** _____
**Date:** _____
**Time:** _____
**Theme:** _____
**Farm:** _____

**Introduction *(1 minute)*** – *Led by* _____
Introduce and show yourself
Welcome everyone to FarmChat®
Switch camera to _____ and introduce

**Overview of** _____ ***(4 minutes) –*** *Camera to* _____
Prompt questions:
_____
_____
_____

***1 question about Overview topic (2-3 minutes)***

**Topic 2:** _____ ***(5 minutes)*** – *Camera to* _____
Prompt questions:
_____
_____
_____

***1-2 Questions about Topic 2 (4-5 minutes)***

**Topic 3:** _____ ***(5 minutes)*** – *Camera to* _____
Prompt questions:
_____
_____
_____

***1-2 Questions about Topic 3 (4-5 minutes)***

**Closing *(1-2 minutes)***
End by reviewing key highlights and thanking host
Thank everyone who tuned in!

# FarmChat® Idea Page

Use this space to jot down ideas about hosting a FarmChat® and find more resources.

### Potential FarmChat® Theme Ideas

### Potential FarmChat® Teachers or Classrooms to Connect With

### Potential FarmChat® Hosts or Helpers

### FarmChat® Considerations for my Site

**For More Resources, visit:** www.iowaagliteracy.org/tools-resources/other/farmchat

# Keeping Virtual Participants Engaged

Even though participants are not in person, you still want them engaged. When participants are engaged, they are learning and more likely to revisit a site. Here are some tips for engaging with participants virtually.

### 1. Build in questions

Make sure that within your outline you include pauses for questions. Questions allow participants to get involved and this also gives you a way to interact with them. You can use the chat feature in public events or large groups. If you are working with a small or private group, you could have the participants unmute to ask their question. Having a person dedicated to watching the chat is helpful in making sure everyone's questions are answered.

### 2. Use names

Many video chat programs allow for the participant to name themselves. When possible, call on the person or acknowledge them by name. This helps the audience know they are part of the group and important.

### 3. Create polls

This tool allows a host to gather participant understanding and to break up talking with an interaction. Some video chat programs have polls integrated as a feature, but you don't have to use those to make a poll! Simply ask a question and give multiple choice answers. Then have participants put their answer in the chat feature. Another option is to have participants hold up a number with their fingers or give a thumbs-up/down.

### 4. Make a scavenger hunt

Create a list of items, ideas, or words that participants can look for during the tour. Share the scavenger hunt with them before or during the virtual tour.

### 5. Show them around

Participants join to see your location and to get a tour. So, show them around! If you're talking about something specific, bring the camera in close for the audience to see. If you want to show participants something specific, be sure it's easy to get to. Walk your site and take note of areas that have poor internet connection, that are loud, or that are quiet and make note of them. This will help to avoid any connection issues.

# Ag Transportation

## Hands-on Activity

**SSNHA Theme:**
- Farm to Factory

**Curriculum Connections:**
- Social Studies

**Grade Level:**
K-5

**Time:**
5-10 minutes

**Materials:**
- Supply Chain Cards (in lesson plan linked below)

https://agclassroom.org/matrix/lesson/660/

**Description:**
Students learn about transportation methods that move agricultural products.

**Instructions:**
1. Ask students how food gets from farms to the consumer. Help guide them to different modes of transportation, like trucks, trains, barges, and airplanes.
2. Ask students if all foods are transported the same. Are pigs and ice cream transported the same? Are eggs and walnuts transported the same? Why or why not?
3. Next, tell students that they will work in teams to put pictures of a food's tranportation sequence in order. The first team to get all items correct wins!
    - Optional: Make the sequencing activity a relay race by having students run to a location, jump rope five times, or hop/skip/run at certain locations.
4. Sort the students into groups and give each group one commodity's supply chain cards set. Walk through the groups and discuss and help them as necessary.

**Talking Points:**
- Iowa is a hub for trucks, rail, and barges.
- Barges are common on the Mississippi River on the east side of Iowa.
- Over 80% of train cargo in Iowa is agricultural goods.
- One barge can carry 15 jumbo rail hoppers or 58 semi-truck loads.

# Antique Farm Tools

**Description:**
Students engage with antique farm tools and learn about modern equivalents.

**Instructions:**
1. Split students into groups and give each group a real antique farm tool or a photo of one.
2. Instruct students to observe the tool with their eyes (not hands!) and discuss how they think it may have been used.
3. Walk around to each group and help guide them to the correct answer.
4. Bring the group together and discuss each item and show photos of the modern tool equivalent and how it changed the workload of farmers.

**Talking Points:**
- The average farm size in Iowa today is around 300 acres (about 300 football fields).
- One acre of corn today can produce about 200 bushels of grain (about the size of a small laundry basket).
- Some modern tools take the place of multiple antique tools. A combine *combines* several jobs, like cutting the corn stalk, husking the ear, and shelling the kernels.


## Hands-on Activity

**SSNHA Theme:**
- Higher Yields
- Farmers & Families

**Curriculum Connections:**
- Social Studies

**Grade Level:**
3-12

**Time:**
15-20 minutes

**Materials:**
- Antique farming equipment and photos of modern equivalents, such as:
- Corn husking glove
- Corn knife
- Corn sheller
- Antique planter

https://www.iowaagliteracy.org/Article/Farm-Machines-Then-Now

# Apple Genetics

## Hands-on Activity

**SSNHA Theme:**
- Higher Yields
- The Changing Farm

**Curriculum Connections:**
- Science

**Grade Level:**
6-8

**Time:**
5-10 minutes

**Materials:**
- Paper plates
- Braeburn Apple
- Royal Gala Apple
- Jazz Apple
- Knife

agclassroom.org/matrix/lesson/490

**Description:**
Students learn about heredity and how apples are developed and propagated.

**Instructions:**
1. Show students Gala and Braeburn apples. Take some time to describe each apple and any physical similarities and differences.
2. Cut each student a small slice of each (Gala and Braeburn) apples and describe any taste or texture differences or similarities.
3. Next, introduce the Jazz apple. Have students sample and discuss look, texture, and taste of the Jazz.
4. Tell students the Jazz apple is a cross of the Gala and the Braeburn. Each variety of apple is actually cloned trees using grafting. The seeds inside the apple won't produce a tree full of apples the same as the apple the seed came from.
5. Discuss some traits that apple farmers might look for and why.

**Talking Points:**
- The Red Delicious Apple was developed near Winterset, Iowa by Jesse Hiatt.
- Apples require pollination to develop.
- New varieties of apples can be produced through cross-pollination and knowledge of genetics and heredity.

# Blues the Clue

**Description:**
Students learn about pasteurization of milk and the effect of temperature on bacteria growth.

**Instructions:**
1. One week ahead of the program, prepare materials:
    - Three test tubes of UHT milk (boxed, shelf-stable milk); freeze one, refrigerate one, and leave one on the counter.
    - Three test tubes of 2% pasteurized milk (refrigerated); freeze one, refrigerate one, and leave one on the counter.
2. On the day of the program, add a single drop of methylene blue solution to each test tube and swirl it to evenly mix it.
3. Milk that has not spoiled will be blue, milk that has spoiled will be white.
4. Next, have students test the pH of a test tube of their choice to decipher if the milk has spoiled.
5. Fresh milk has a pH around 7, which is slightly acidic. When milk spoils, the pH falls, which means it gets more acidic.
6. Discuss with students which test tubes have spoiled and how temperature of storage and pasteurization could have impacted this.
7. Optional: let students taste test fresh UHT milk and fresh 2% pasteurized milk to compare.

**Talking Points:**
- UHT or shelf-stable milk has less bacteria than conventionally pasteurized milk because it is heated to a higher temperature. It only needs refrigerated after opening.
- Pasteurization is the process of heating milk to a high temperature for a short time to kill bacteria.

## Hands-on Activity

**SSNHA Theme:**
- Higher Yields

**Curriculum Connections:**
- Science

**Grade Level:**
6-12

**Time:**
5-10 minutes

**Materials:**
- Six large test tubes
- UHT milk
- 2% pasteurized milk
- Methylene blue solution
- pH strips

https://agclassroom.org/matrix/lesson/283/

# Build a Calf

## Hands-on Activity

**SSNHA Theme:**
- Higher Yields
- The Changing Farm

**Curriculum Connections:**
- Science

**Grade Level:**
K-5

**Time:**
5-10 minutes

**Materials:**
- Pennies
- Student worksheets*
- Coloring sheets*
- Black and red crayons
- *Available at link below

https://www.iowaagliteracy.org/Article/Build-a-Calf

**Description:**
Students learn about simple genetics by flipping a coin to discover the traits of a calf.

**Instructions:**
1. Tell students they will be building a calf by flipping a coin to discover what their calf looks like.
2. Tell students they will flip a coin twice for each trait. Heads will mean the dominant trait is passed on and tails will mean the recessive trait is passed on. One flip will give the trait the mother is passing on and the second flip will give the trait the father is passing on.
    - Note that the sex of the calf is different - X and Y are not dominant/recessive, but XX is female and XY is male
3. Help students understand the relationship between dominant and recessive traits and how that dictates physical traits (phenotypes.)
4. When students have the genotypes for all traits, they can color a picture of their calf with the correct characteristics!

**Talking Points:**
- Parents pass on characteristics to their offspring randomly. The offspring then looks somewhat like, but not exactly like, their parents.
- Genotype means what the DNA is coded as.
- Phenotype means what the organism looks like.
- Genotype and environmental factors dictate phenotype.

# Cover Crop Monsters

**Description:**
In this activity students learn about germination, growth, root structures, and conservation practices by making a Cover Crop Monster and helping it grow.

**Instructions:**
1. Fill the toe of your sock with a teaspoon of grass seed and add a cup of potting soil on top. Fasten tightly with a knot as close as possible to the soil.
2. Form a small ball for a nose and twist an elastic band around to hold it in place. Form two ears using the same method.
3. Stand the stocking ball in the plastic cup with the grass seed at the top. Add some eyes by firmly pressing the googley eye nails into the ball.
4. Add water to the cup and keep it damp up with water. The grass seeds in the cover crop monster will sprout up and make some wild hair dos!

**Talking Points:**
- Cover crops help protect the soil while cash crops are not growing.
- Rye is a common cover crop in Iowa due to quick germination.
- The roots of the cover crop help hold soil in place.
- The leaves of the cover crop help protect the soil from the force of rain droplets.

## Hands-on Activity

**SSNHA Theme:**
- The Fertile Land

**Curriculum Connections:**
- Science

**Grade Level:**
3-8

**Time:**
5-10 minutes

**Materials:**
- Nylon footie stockings
- Ryegrass seed
- Potting soil
- Mini rubber bands
- 2 oz. plastic cups
- Googley eyes
- Small, sharp nails (roofing nails have a large, flat head and are easy to attach googley eyes to)
- Super glue (to glue eyes to nails)

https://youtu.be/9FsNGo0TAk4

# Many Hats of an Iowa Farmer

## Hands-on Activity

**SSNHA Theme:**
- Farmers & Families

**Curriculum Connections:**
- Social Studies

**Grade Level:**
K-5

**Time:**
20-30 minutes

**Materials:**
- Props for each "hat" you'd like to include, like:
- Ball caps or hard hats
- Calculator
- Briefcase
- Dumbells (athlete)
- Scrubs (vet)
- Tools
- Name tags for each "hat"
- Storage for each costume

https://www.iowaagliteracy.org/Article/Many-Hats-of-an-Iowa-Farmer

**Description:**
Students learn about the many types of duties that farmers have in an interactive activity.

**Instructions:**
1. Ask students about jobs in their community and if they know what farmers do.
2. Introduce the idea that farmers do lots of tasks. Throughout the year, there can be many different "hats" they wear to do what is necessary.
3. For each "hat" a farmer wears, ask for a student volunteer to put on costumes or hold props one item at a time and have other students guess what the associated career is. Some ideas of careers to include are:
   - **Veterinarian:** taking care of livestock health
   - **Business Manager:** assessing business and financial decisions
   - **Mechanic:** fixing trucks, tractors, and implements
   - **Construction Worker:** fixing fence and buildings
   - **Electrician:** install electricity to barns, grain dryers, etc.
   - **Agronomist:** monitoring and treating plant health
   - **Truck driver:** hauls grain and livestock to and from the farm
   - **Nutritionist:** calculates and prepares feed rations for livestock
   - **Athlete:** does lots of physical labor, like lifting bags, walking around the farm, and working with livestock
   - **Computer Technician:** use computers and tablets with high-tech in vehicles and buildings to be efficient
   - **Meteorologist:** understands weather and climate and pays attention to weather changes
   - **Environmental Scientist:** works to protect and conserve natural resources

# Soil Dirt Cups

**Description:**
Students will learn about the layers of soil and interact with them while making a snack.

**Instructions:**
1. *Ensure you are mindful of food safety practices and any participant food allergies.
2. Tell students they will be learning about the layers of soil, layer by layer as they make a food model. Draw a diagram to illustrate the layers as you discuss them.
    - **R Horizon** (bedrock): Add broken up Oreos to mimic the large mass of rock several feet below the soil surface.
    - **C Horizon** (parent material): Add mini chocolate chips to symbolize the more weathered materials that tell us how our soil was formed, whether that be glacial till, water movement, or even wind!
    - **B Horizon** (subsoil): Add butterscotch pudding to model the layer of soil that is richer in clay, and less rich in organic material about a foot below the soil surface.
    - **A Horizon** (topsoil): Add chocolate pudding to symbolize the dark topsoil that is rich in organic material and nutrients.
    - **O Horizon** (organic matter): Add gummy worms and coconut to mimic living organisms that decompose and help form our rich, Iowa soils.

**Talking Points:**
- Iowa has rich, deep soil that is good for growing crops.
- Iowa was once covered with water, which helped form the limestone bedrock of our soil. (R horizon)
- Iowa has been covered by multiple glaciers. The glaciers deposited sediment called *glacial till*.

## Hands-on Activity

**SSNHA Theme:**
- The Fertile Land

**Curriculum Connections:**
- Science

**Grade Level:**
3-12

**Time:**
15-20 minutes

**Materials:**
- Coconut, dyed green
- Gummy worms
- Chocolate pudding
- Butterscotch pudding
- Mini chocolate chips
- Oreos, broken in big pieces
- Clear plastic punch cups
- Spoons
- Serving spoons
- Serving dishes
- Napkins
- Hand sanitizer

# Tour Site BINGO

| Things Found Outside | Things Found Inside | Unique to Iowa | Connections to Science | Connections to Social Studies |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | FREE | | |
| | | | | |
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# Other Helpful Resources

### Guides and Printables

Find the Ag on the Go document with quick activities, The How-To Guide for Ag Safety Days, the Outreach Toolkit with information on outreach education, a coloring sheet, and more!

https://www.iowaagliteracy.org/Tools-Resources/Other/Links-Downloads

### Iowa Agriculture Literacy Foundation

Find lesson plans, resources to borrow, student publications, and more!

www.iowaagliteracy.org | info@iowaagliteracy.org

### National Agriculture in the Classroom Organization

Find lesson plans, kits to purchase, book recommendations, and more!

www.agclassroom.org

# My Notes:

# Thank you!

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