



2025 Oregon Agriculture in the Classroom Literacy Project

Outdoor Farm, Indoor Farm

Description

Explore how food grows both outdoors and indoors with best friends Emma and Efrem in this lively, rhyming picture book. With vibrant illustrations and catchy verses, learn how farms thrive—no matter the season or setting! Follow the reading with an engaging activity that tests students' knowledge on indoor and outdoor farms.

Part 1: Introduction, 5 minutes

1. Briefly introduce yourself and your connection to agriculture (1-2 minutes).
2. **After choosing your call and response (see FAQ page on back), practice it with the class before you begin the rest of the lesson.**
3. Introduce the Six Fs of Agriculture (2 minutes). Say, **"Who thinks they know what the word Agriculture means?"** Allow students to answer, praise them for their answers. **"I am going to teach you The Six F's of Oregon Agriculture to help you understand how important agriculture is. The first F is for Farming. Farms are where food and fiber are produced. The second F is for Food. Agriculture feeds us. The third F is Fiber. Fiber is used to make fabric and clothes. The fourth F is Fishing. In Oregon, we harvest lots of food from the ocean. The fifth F is Flowers. One of Oregon's biggest agricultural industries is nursery and greenhouse crops like flowers. The last F is Forestry. Wood products are used to make all kinds of things, like your paper, pencils, and houses. As you can see, agriculture is everywhere and very important to all of us."** If you want to have students guess the next "F" before you tell them, this could be a good way to increase engagement.
4. Next, introduce the story (1 min.). Example, **"Today we are going to learn about the first F of agriculture, does anyone remember what it is?"** Call on one student and then say, **"The first F stands for farming. In this book, Emma and Efrem are going to teach us more about outdoor farming and a newer way of farming indoors."**

Part 2: Reading and Activity, 25-30 minutes

The reading portion and corresponding activity have been divided into two slightly different versions to better meet the needs of both younger and older students. On the next page, under your grade level, there are instructions on how to read the book and lead the follow up activity. **For more game specific rules and reading tips, please refer to the FAQ page on the back of this lesson plan.**

Part 3: Wrap-up and Comprehension, 5 minutes

1. Choose 1-3 comprehension questions to discuss with the class:
 - a. Kindergarten-2nd
 - i. **"What is an indoor farm?" or "Can someone tell me one thing that indoor and outdoor farms have in common, and one thing that makes them different?"**
 - b. 3rd-4th
 - i. **"Can you name one tool that you need on an outdoor farm? What about an indoor farm?" or "Why do you think some people grow plants indoors instead of outdoors?"** Critical thinking question example, **"If you were a farmer, would you choose to grow plants indoors or outdoors? Why?"**
2. End your visit by reviewing the major points you went over and congratulating the students on everything they learned, for example, **"Great work today, farmers! Remember, what we learned today shows how people in Oregon and around the world are finding new ways to grow food for everyone. Keep being curious and figuring out new ways to help plants grow!"** Leave Bookmarks and Book with teacher.

Overview

Learning Targets: Understand the difference between indoor and outdoor farms, recognize the tools and factors that impact them, and learn why both farming methods are important to the state of Oregon.

Time: 40-45 minutes

Materials: *Outdoor Farm, Indoor Farm* by Lindsay Metcalf, Lesson Plan

Kit Includes: 6 Puzzles and 23 Action cards

Grade Level: K-4

Essential Skills: 1&2

CCSS: K.ESS2.1/2, K.ETS1.1/3, K.PS3.1, K.2, K.6, K.9, K.11, K.12, K.17, K.20, 1.ESS.1/2, 1.ETS1.1/3, 1.2/4/8/9/19/20, 2.ETS1.1/3, 2.LS2.1, 2.1/7/21/25/26, 3.ESS3.1, 3.ETS1.1/3, 3.LS4.3, 3.LS4.4, 3.4/6/10/19, 4.ETS1.1, 4.13/20

Part 2: Reading and Activity, Kindergarten - 2nd

1. Before reading, tell students: **"I'm going to ask questions while we read, and you can ask questions after, okay?"** Read the author and illustrator's names. Below are stopping points and questions to engage students (5-8 minutes).
 - a. Pg. 5/6: **"Indoor farm, zero soil."** Pause and ask, **"Did you know you can grow plants without soil?"** Encourage kids to think about how that works. **"Let's keep reading to learn more."**
 - b. Pg. 6/7: **"Outdoor farm, sunlight beams. Indoor Farm, color streams."** Ask, **"What's different about these pages? What kind of light do you see on Emma's outdoor farm? What kind of light do you see on Efrem's indoor farm?"** Plants need light to grow no matter the type of farm.
 - c. Pg. 8: **"Outdoor farm, map the field."** Point to the drone and ask, **"Who knows what this is?"** Expect answers like "drone" and "Bob." Explain, **"Bob the drone helps Emma because he can move a lot faster than she can. The biggest farm in Oregon is about one million acres! It would take a long time to check the whole farm by foot, so the drone helps make sure all the plants and animals on the farm are okay so the farmers can focus on other jobs."**
 - d. Pg. 19/20: **"Outdoor farm, growing slows. Mend machines while fire glows. Indoor farm hums along. Fine-tune climate. Green stays strong."** Explain, **"Outdoor farms change with the seasons, but indoor farms stay the same all year long."**
2. Now it is time for questions and comments about indoor and outdoor farming (2 minutes). Prompt the students with questions such as, **"What are some things that outdoor and indoor farms have in common? What are things that might happen on outdoor farms only? What about indoor farms?"** These questions will lead to the lesson below.
3. Activity introduction (3 minutes). **"We're going to play a game! This game will show me how much you know about indoor and outdoor farming. I'll split you into groups and give you a puzzle. To win, your group must be the first to complete it. But before you add a piece, you must answer a question about farms. Answer right, you get to add a piece. Answer wrong, wait for the next question."** Pause. **"Let me give you an example."** Hold up the action card deck. **"These cards tell me what questions to ask. If it says 'Tractor,' I'll ask, 'Is this about indoor or outdoor farms?' You won't say the answer out loud, but discuss it with your group, then I'll ask a group to answer."** Pause. **"If the group says, 'Indoor farming,' I'll ask, 'Thumbs up if you agree, thumbs down if you disagree.'"** Pause. **"Tractors are for outdoor farms, so the groups with thumbs down can add a puzzle piece. Some cards apply to both types of farms, like 'light'—all plants need light, right? So the answer is both. Understand?"** (Pause for questions.)
4. Now you are going to break the classroom into groups and pass out the puzzles (2 minutes). Tell the teacher you will need 6 groups and ask if they have a preferred method (e.g., pre-set table groups or students that work particularly well together). As students are getting into their groups say, **"Please pick one puzzle piece to place in the middle of your group. You win by finishing first, but you can only add pieces by answering correctly."**
5. Reading action cards (10-15 minutes). **"Here is your first action card—do not shout out your answer. Talk with your group, and I'll call on someone to answer."** Give 30 seconds to discuss. To get their attention, say, **"You should be ready in 5...4...3...2...1, voices off, eyes on me."** If they are still talking, use your call-and-response. Call on a group, praise answers, and say, **"Thumbs up if you agree, thumbs down if you disagree."** (Pause.) Share the correct answer and allow groups who got it right to add a puzzle piece. If they don't have enough time to find the right puzzle piece they can wait for the next round and add it then (for time's sake). Repeat until one of the groups finishes.
6. Clean-up/Final Challenge (2 minutes). **"Time for the final challenge. When I say 'go,' put your puzzle pieces in the envelope. The first group to have their voices off, eyes on me, and pieces in the envelope will win. What will you do when I say go?"** Students respond. **"Ready... set... go!"** Congratulate the winning group and collect the envelopes.



Part 2: Reading and Activity, 3rd - 4th

1. Before reading, tell students, **"I'm going to ask questions while we read, and you can ask questions after, okay?"** Read the author and illustrator's names. Below are suggested stopping points and questions to engage students (10 minutes). *It is encouraged for grades 3-4 to stop on as many pages as possible to engage students with the images and content.*
 - a. Pg. 5/6: **"Indoor farm, zero soil."** Pause here, **"On this page, Efrem is growing his crops with no water, does anybody know what this is called?"** It is unlikely the students are familiar with the term hydroponics, but if they are, praise them and have the class repeat the word. If not: **"This is a really big word, but I think you can handle it. Growing plants without soil is called Hydroponics. Can you all say Hydroponics?"** Have the class repeat.
 - b. Pg. 6/7: **"Outdoor farm, sunlight beams. Indoor Farm, color streams."** On this page, ask the students what is different about these two pages. **"Can anybody tell me what plants use sunlight for?"** You are looking for the word photosynthesis. Praise a correct answer and define for class, **"Plants need light to perform photosynthesis, which is the process of taking light and turning it into food. So, if all plants need sunlight to grow, how do plants at an indoor farm survive?"** After students give a few answers, introduce the idea of grow lights, **"These are special lights that give plants the same energy as the sun so they can perform photosynthesis indoors."**
 - c. Pg. 8: **"Outdoor farm, map the field."** Point to the drone and ask, **"I want to see hands in the air, does anybody know what this is?"** Praise answers, **"Does anybody know what a drone would help with?"** Praise answers. **"The biggest farm in Oregon is about one million acres! It would take a long time to check the whole farm by foot, so the drone helps make sure all the plants and animals on the farm are okay so the farmers can focus on other jobs."**
 - d. Pg. 19/20: **"Outdoor farm, growing slows. Mend machines while fire glows. Indoor farm hums along. Fine-tune climate. Green stays strong."** Explain that outdoor farms change with the seasons. Indoor farms on the other hand are not impacted by weather. **"Indoor farms have what we call a climate-controlled environment. They control the temperature, the amount of water and light, and the airflow. These things make it easy for indoor farms to keep growing year-round."**
2. Now it is time for questions and comments about indoor and outdoor farming (2 minutes). Prompt the students with questions such as, **"Tell me some things you noticed about this book or something you had not heard/thought about until now."** Call on students to engage.
3. Activity introduction (3 minutes). **"We're going to play a game! This game will show me how much you know about indoor and outdoor farming. I'll split you into groups and give you a puzzle. To win, your group must be the first to complete it. But before you add a piece, you must answer a question about farms. Answer right, you get to add a piece. Answer wrong, wait for the next question."** Pause. **"Let me give you an example."** Hold up the action card deck. **"These cards tell me what questions to ask. If it says 'Tractor,' I'll ask, 'Is this about indoor or outdoor farms?' You won't say the answer out loud, discuss it with your group, then I'll ask a group to answer."** Pause. **"If the group says, 'Indoor farming,' I'll ask, 'Thumbs up if you agree, thumbs down if you disagree.'" Pause. "Tractors are for outdoor farms, so the groups with thumbs down can add a puzzle piece. Some cards apply to both types of farms, like 'light'-all plants need light right? So the answer is both. Understand?"** Pause for questions.
4. Now you are going to break the classroom into groups and pass out puzzles (2 minutes). Tell the teacher you will need 6 groups and ask if they have a preferred method (e.g., pre-set table groups or students that work particularly well together). As students are getting into their groups say, **"Please pick one puzzle piece to place in the middle of your group. You win by finishing first, but you can only add pieces by answering correctly."**
5. Reading action cards (10-15 minutes). **"Here is your first action card—do not shout out your answer. Talk with your group, and I'll call on someone to answer."** Give 30 seconds to discuss. To get their attention, say, **"You should be ready in 5...4...3...2...1, voices off, eyes on me."** If they are still talking, use the call-and-response. Call on a group to answer and make sure to ask them why they think that's the correct answer. Praise the thinking behind any answers, and then say, **"If you agree, give me a thumbs up. If you disagree, give me a thumbs down."** Pause. **"Here's the correct answer. Any group that got it right can add a puzzle piece."** After each answer, make sure to ask the group that answered WHY they think it's correct and HOW they came up with their answer. Continue this process until a group finishes their puzzle.
6. Clean-up/Final Challenge (2 minutes). **"Time for the final challenge. When I say 'go,' put your puzzle pieces in the envelope. The first group to have their voices off, eyes on me, and pieces in the envelope will win. What will you do when I say go?"** Students respond. **"Ready... set... go!"** Congratulate the winning group and collect the envelopes.



Tips for Classroom Management

- **Keep instructions simple-** Using clear instructions will help minimize confusion and be productive in the activity.
- **Use your tools-** Do not try to talk over students. Use your call and response or the classroom “quiet” signal provided by teacher.
- **Be on the move-** Try moving closer to a student who is distracting others to help motivate them to rejoin the activity.
- **Acknowledge good behavior-** Thank students for sitting in their seats quietly awaiting instructions.
- **Try to connect with students-** Ask their names when you call on them and use their names throughout.
- **Be positive and enthusiastic-** Explain your connection to agriculture and the community.
- **Respect all cultures, backgrounds, and beliefs.**

FAQ Page

Call-and-Response

Feel free to use any call-and-response that you already know and like, or reach out to your teacher and see if they have any suggestions. We recommend you say, **“Waterfall Waterfall...”** and the class says **“SHHHHHHHHHHHH.”** Or **“I’ll know you’re ready when your voice is off in 5... when your eyes are on me in 4... 3... 2... 1...”** then begin speaking in a low voice they won’t be able to hear unless they are quiet.

Puzzles

Your kit includes **6 puzzles** for the 6 groups that each class will be broken into. These images are broken into **9 puzzle pieces**. After you pass them out, students may take the puzzle pieces out of the bag and place **one piece in front of them at the start of the game**. They connect another puzzle piece only if they answer the action card correctly. If students can’t find the next puzzle piece in the time allotted after the action card, they may pause and add it to the puzzle during the next appropriate time (most likely when they get another answer correct).

Action Cards

You have **23 action cards** in your deck. These cards are categorized by **difficulty**, which is indicated by the color at the top of the card. **Green** is the **easiest**, **yellow** is **moderate**, and **red** is the most **difficult**. The answer to the question is written on the gray bar at the bottom of the card. These cards may be used in any order you see fit. For example, If you notice that your second-grade class is answering the yellow cards with ease, offer a challenge by incorporating some red cards into a round. It is estimated that **each scenario card will take about a minute and a half to answer (and connect a puzzle piece)**. With 9 puzzle pieces and 1 minute per question, you can **expect each game to take approximately 10-15 minutes**.

Modifications

- For Kindergarten classrooms or classes with a smaller number of students, you may choose to have a smaller number of groups.
- If you get through all of a certain color of action cards and you feel the next level is out of their ability to answer, you should quiz them on the 6 F’s of Agriculture or repeat questions from the same card level that challenged them (repeating a question that few got correct is okay).
- Keep an eye out for time. If you notice groups still have quite a few puzzle pieces to connect but you are running short on time, create a “speed round” by reading off the easiest cards in the deck and giving groups only 10 seconds to discuss before they answer.

Tips for the Game

- When reading the action cards, walk around the classroom to show each group the image displayed on the back.
- After groups have discussed the action cards for about 30 seconds, remind them, **“I’ll know you are ready when all eyes are on me and voices are off.”**
- Use your preferred call-and-response as many times as you need!

Tips for Reading

- **Practice!** Prepare by reading the book both silently and aloud before you get to the classroom. Also, review the activity materials and practice presenting it to someone else. It’s a lot easier to read fast, so **focus on reading SLOW!**
- Find a good location, make sure the students can hear you and see the pictures. If the teacher has a projector, consider using this to show students the book while you read.
- **Review the pre-written stopping points and questions** under the “Reading and Activity” segment of the lesson plan ahead of time.