

MAPPING ILLINOIS AGRICULTURE

4th Grade Ag in the Classroom Lesson Plan



What students will learn and do:

- What products do we get from Illinois agriculture?
- How do you find locations on a road map?
- How does agriculture connect to our lives?
- Students will use highway maps to locate ag-related sites across Illinois.

Length of presentation: 50-55 minutes.

Materials Needed:

1. Laminated, large-print Illinois highway map – *1 per presenter*
2. White board magnets – *8 per presenter*
3. Top 4 product posters: #1-Corn, #2-Soybeans, #3-Hogs, #4-Beef Cattle – *1 set per presenter*
4. Basket of products (15) – *1 per presenter*
 - 1) **bar soap**
 - 2) **barbed wire**
 - 3) **canned pumpkin**
 - 4) **toy car**
 - 5) **Corn Flakes**
 - 6) **ear of corn**
 - 7) **hamburger**
 - 8) **popcorn**
 - 9) **peach**
 - 10) **pig**
 - 11) **horseradish**
 - 12) **soybean plants**
 - 13) **Swiss cheese**
 - 14) **Tootsie Roll**
 - 15) **wheat plants**
5. Mystery cards (15, corresponding with above products) – *1 set per presenter*
6. Plastic bowl containing product photo cards with Velcro (15, corresponding with above products + 1 photo of Super Slurper) – *1 set per presenter*
7. 2 x 2" zip-close bag containing ½ tsp. Aqua-Keep superabsorbent polymer – *1 per class, plus extra for presenter to experiment with in advance*
8. Clear plastic 9 oz. cup marked with line at ¼ cup level – *1 per presenter*
9. Clear plastic 9 oz. cup (unmarked) – *1 per class*
10. Bottle of water *or* access to a sink
11. Illinois highway maps – *15 per presenter*
12. Student handouts – *1 per student*
 - DeKalb County Farmers Ag Mag
 - Certificates of Participation (signed by you in advance)
13. Teacher gift bag – *1 per teacher*

Procedure:

When you arrive in the classroom:

- Determine how many children are present. If there is an odd number, the teacher will need to be involved in the matching activity. In your basket, place **exactly** the number of items and their **matching** mystery cards that you will need. (E.g., if there are 17 students present plus the teacher for a total of 18, choose 9 items and their matching mystery cards to place in the basket.) Set aside remaining/extra items to discuss if time allows. ~ See *mystery card answer key at end of lesson.* ~
 - Select the photo cards (with Velcro to attach to map) that correspond with the items/mystery cards in the basket. Set aside remaining photos with extra items.
 - Use magnets or tape to securely attach laminated Illinois map to whiteboard.
1. **Introduce yourself.** Thank teacher & class for inviting you. Explain your connection to agriculture (farming, ag lender, ag student, etc.)
 2. **Begin lesson by discussing agriculture in Illinois:**
 - *“We live in an amazing state! Every day you use or benefit from something produced by Illinois agriculture.”*
 - *“Can you think of anything you’ve used today that may have come from farms in Illinois?” “Maybe this will help. The top four things Illinois farmers grow are CORN, SOYBEANS, PIGS, and CATTLE.”* (Show and hang photo posters.) *“Can you think of anything we get from these four farm products?”*
 3. *“Illinois farms provide us with many everyday products. The Illinois agriculture industry provides us with amazing inventions!”* **Conduct superabsorbent polymer demonstration:**
 - a. Pour contents of 2x2” zip-close bag (1/2 tsp. Aqua-Keep) into clear 9 oz. cup. Invite students to guess what the substance is. Guesses may include flour, salt, sugar, cornstarch, etc. Do not say what the substance is.
 - b. *“One way to identify a substance is to see how it behaves when water is added. Will it sink? Float? Dissolve? Explode? Obviously I wouldn’t bring something dangerous into your classroom, so we can count out explosions! What are your guesses? What do you think will happen when I add water to this mystery powder?”* (Avoid referring to the substance in a way that could conjure the idea of illegal drugs, as a few students may unfortunately have seen such illicit substances outside of school.)
 - c. After soliciting guesses and increasing the sense of mystery and suspense, add ¼ cup of water to the cup, swirling gently as you do so. The powder will quickly gel. Act surprised! Show that you can turn the cup upside down without it pouring out.
 - d. *“Wow, what IS this stuff?”* Explain that the substance is known as a superabsorbent polymer because it can hold many times more water than its own weight. It was invented in Peoria, Illinois by agricultural scientists at a USDA research laboratory. The original polymer was called Super Slurper and was made using corn starch. The polymer you demonstrated is not made with corn starch but it uses the same technology that was developed by Illinois scientists.

- e. *“Okay, this stuff is really neat, but what’s it used for?”* Invite guesses. An item students will relate to is baby diapers. If you cut open a (clean!) diaper, chances are a white powder—a superabsorbent polymer—will fall out. Superabsorbent polymers are also sold to be used in potting soil to conserve water. (Soil Moist™ is a common brand.) They can also be used in industrial applications like fuel filters, and a sheet version has been developed that can be used to dry out library books after floods.
4. **Transition to matching/mapping activity:** *“This isn’t the only amazing thing to come from Illinois agriculture. I’m going to give you a chance to discover several more.”*
5. Distribute an Illinois maps, two students per map. (Have students push desks together if needed.) Ask students to carefully unfold their maps. Review basic map skills:
 - *“This is a map of what?”*
 - *“Where is north? South? East? West?”*
 - *“Can you point to where we are located on the map right now?”*
6. Explain: *“We are going to use mystery cards to discover items from Illinois agriculture.”*
 - Read the Super Slurper mystery card as an example. The card gives clues that describe Super Slurper. The card also names a location on the map. *“How do we find Peoria on our map?”* Explain how to use the Index to Cities and Villages by finding the name of the city on the list, then using the map coordinates to locate it. Emphasize that this is important because it is how each pair of students will find the location named on their mystery card.
 - Ask students to find Peoria using the index on their own maps. Model the process on the large map and attach the Super Slurper photo card to the Velcro dot near Peoria. (For more practice, ask students to find the coordinates for the town in which their school is located.)
 - *“I am going to pass out several mystery cards and items. Half of you will receive mystery cards. Half of you will receive items.”* (Consider asking the teacher to pass out the cards and items. This allows him or her to distribute the mystery cards to students with higher-level reading skills.)
 - Hand out mystery cards and items from the basket. *“If your item is a package or container, please do **not** open it.”* Once all the cards and items have been distributed, ask students who have an item to stand in a line on one side of the classroom, while students who have a mystery card stand in a line on the other side. (Highway maps should be left on the desks. They will be needed again.) Each line of students should face the other so that the mystery card-holding students can see the items their classmates across the room are holding.
 - *“Now we’re going to discover some amazing things from Illinois agriculture!”* Ask one of the students holding a mystery card to read the clues on his or her card, one at a time, loud enough for the class to hear. After each clue is read, classmates should try and guess which item the card describes. When the correct item has been identified, praise the class for figuring out the mystery, then have the student read the remaining clues out loud to reinforce learning.
 - Continue until all the mystery cards have been read/items identified.

7. *“Now we’re going to map Illinois agriculture! Here’s what you need to do…”*
 - *“The person who has the item matching your card is now your partner. I want you and your partner to go find a map. Do not worry if you are sitting in someone else’s seat... just find a map that you and your partner can share and sit there.”*
 - Explain that each pair of students should use their map to find the location shown in **bold print** on their mystery card.
 - Once all students have found their match and pinpointed the location mentioned on their mystery card, call attention back to the classroom map.

8. *“Now we’re ready to map Illinois agriculture!”*
 - *“I have a set of photos that matches the items and clue cards you have. I’m going to have you help me place each photo in the correct place on our large map (indicate hanging map). Remember the location you found on your map, because you will be placing a photo at that same spot on our classroom map.”*
 - To start the process, draw a photo card from the stack that corresponds with students’ items. Call up the pair with that item. *“Okay, I drew photo of barbed wire. Who has the barbed wire... come on up!”*
 - Have the student with the item hold it up so the class can see it again. Then, give them the photo card to place on the classroom map. Collect the item and mystery card from each student.
 - Every so often, challenge the rest of the class to use their own maps to find the location mentioned on the mystery card. *“Raise your hand when you can give me the coordinates for this location.”* This will help the rest of the class stay engaged.
 - Allow one of the pair to select the next photo card and call the next pair forward.
 - Continue this process until all the students have come forward and all the locations have been marked on the map.
 - Read any extra mystery cards. Allow the class to guess what they describe, show the item, and place the corresponding photo on the large map.

9. *“Now we’ve mapped out several connections to agriculture in our state. Obviously there are many, many more. And, guess what? We also live in an amazing agricultural COUNTY within our state.”* (Keep in mind that depending on where you present, some students may live outside the county.) Show DeKalb County on the classroom map and invite students to find it on their own maps.

10. Hand out “DeKalb County Farmers” Ag Mags to each student. Discuss:
 - *“What is the title of the very first story in the Ag Mag? Yes, it’s “Who Grows Our Food?” Who DOES grow our food? Right—farmers! We depend on farmers! Say it with me: **WE DEPEND ON FARMERS!**”*
 - If you are a farmer, tell what you grow and where it goes. If you work closely with farmers, give examples of what they raise. Use this opportunity to help

students understand that farmers take their jobs very seriously and care about the health of their own families, our environment, and the people they feed.

- Explain that every farmer shown in the Ag Mag lives and farms in DeKalb County. *“These are our neighbors. They work for us every day, by growing food for us and for people all over the world.”*
- Have students open the Ag Mag. Call attention to the map of DeKalb County in the center and ask them to find their own town.
- Call attention to the farmer quotes printed around the edges of the inside pages. If time, invite a few students to share their favorite farmer quote and what it means to them.
- Have students look at the back of the Ag Mag. Explain that it gives more detail about the top 4 farm products, or commodities, produced on DeKalb County farms. If time, ask students to read some of the information and share an interesting new fact they learned.
- *“I know your teacher will want to give you more time to read your Ag Mag. You can also take your Ag Mag home and share it with your family. Maybe you can quiz your family about what farmers grow in DeKalb County!”*

11. Wrap up with reflection questions:

- Invite several students to name one thing they learned during the presentation.
- Emphasize that we depend on farmers every day.

12. Before leaving:

- Hand out signed certificates (students may fill in their own names).
- Remind teacher/class of upcoming **placemat design contest. The deadline for entries is March 10, 2017.** The fourth grade contest theme is **“I’m Connected to Agriculture!”**
- Thank class and teacher!
- Give teacher the gift bag. Point out the evaluation link, placemat contest rules/entry forms, and other items. **Remind teacher to submit the online evaluation.**

~ ANSWER KEY ~

(Use this list to choose and match items based on the number of students present.)

	Locations printed in <u>bold and underlined</u> on Mystery Cards	Matching product/item
Ex.	<u>Peoria</u>	Super Slurper polymer
1	<u>Montgomery</u>	Dial bar soap
2	<u>DeKalb</u>	barbed wire
3	<u>Morton</u>	canned pumpkin
4	<u>Rochelle</u>	toy car/ethanol
5	<u>Danville</u>	Corn Flakes
6	<u>Ottawa</u>	ear of corn
7	<u>Elmhurst</u>	hamburger
8	<u>Joliet</u>	popcorn
9	<u>Bellevue</u>	peach
10	<u>Centralia</u>	pig
11	<u>Collinsville</u>	prepared horseradish
12	<u>Decatur</u>	soybean plants
13	<u>Stockton</u>	Swiss cheese
14	<u>Chicago</u>	Tootsie Roll
15	<u>Nashville</u>	wheat plants

