



WIND AT WORK ON THE FARM

Grade Level
K-4

Length of Lesson
45 minutes

Objective

By the end of this lesson plan, students will understand wind is a type of weather that affects farming in both positive and negative ways.

Materials (per group)

- Pinwheel
- 1 pencil with eraser
- 4 Dixie cups
- 2 drinking straws
- 1 pushpin
- Markers
- Tape
- Hole punch or scissors
- Pictures of wind in ag (See resources)

Standards

NGSS:

K-ESS2-1, K-ESS3-2,
K-PS3-1, and K-PS3-2

Lesson Summary

This lesson is designed to teach students about the affect wind has on farming. Students will learn wind can both help and harm a farmer depending on the season. Students will create a wind anemometer to measure wind speed.

Suggested Sequence of Events:

1. Set Up: Print out example pictures of wind affects. Set out pinwheel and anemometer materials. For younger students, hole punch the cups before the activity.
2. Read the books *Nature Activities Weather Watcher* by John Woodward and *I face the wind* by Vicki Cobb.
3. Complete the activity following the procedures:
 - a. Engage: Using the discussion questions, get students thinking about their connections to wind.
 - b. Explore and Explain: Make the connection to farming using photos and discussion points (see next page)
 - c. Activity:
 - Divide students into groups of 3.
 - Give each group 4 Dixie cups. Have students color one Dixie cup so students can easily count rotations. Have older students hole punch each Dixie cup near the lip of the cup for a straw to slide on. Teachers should hole punch the cups for younger students.
 - Tape 2 straws together in an x shape. Make sure they cross in the center.
 - Slide each cup onto the end of a straw. *All cups must face the same directions around the circle.
 - Push a pin through the center of the straws "X."
 - Carefully push the pin into the pencil eraser.
 - d. Test: Take students outside or use a fan to observe what the anemometer does in the wind. Gentle wind= slower spinning, Strong wind= faster spinning. Have students count the number of rotations in 30 seconds.
4. Whole Class discussion and reflection on the activity.

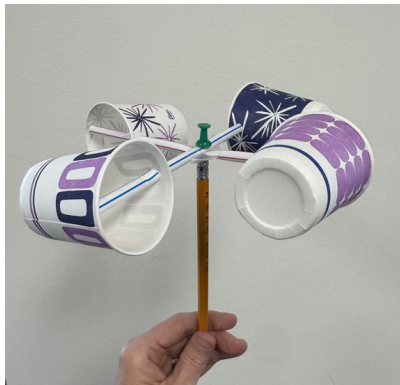
TEACHER RESOURCES

Pre-Activity Discussion Questions

- How they would describe wind?
- How can you tell wind is present if you can't see the wind like other types of weather?
- Blow the pinwheel to show wind movement.
 - Allow students to blow on pinwheel and ask additional ways they see wind.
- How do you think wind affects farming. Can wind help a farmer? Can it hurt? Hold up pictures of ways wind can assist or hurt farming. (Photos provided below.)

Explore and Explain Resources

- Explore and Explain: Wind can help farmers with:
 - Seed Distribution- spreading plants seeds to new locations.
 - Pollination- carrying pollen from one plant to another so other plants can grow seeds.
 - Drying fields- After rain, wind can dry fields so farmers can work more easily.
 - Cooling plants and animals- keeping crops comfortable in hot weather.
- Explain: Wind can hurt farmers by:
 - Crop Damage- heavy winds bend, break or flatten crops.
 - Soil Erosion- Strong winds blow valuable topsoil.
 - Drying out plans- Too much wind causes plants to dry out quickly.
 - Spraying Problems- Wind can carry fertilizer or pesticides off target.
- Ask: Why might farmers want to know how windy it is? What tools might they use? They use an anemometer!



Extension Ideas:

- *Accommodations for lesson:*
 - For younger grades (K-1), focus on observing and discussing. Use drawings to show their knowledge.
 - For older grades (2-4), count rotations, and create a simple graph with classmates. Discuss how farmers could use this knowledge to determine when to spray crops.
- For further interest show students these videos explaining wind and anemometers:
 - <https://iaitc.co/howwindworks>
 - <https://iaitc.co/howanemometerswork>
 - <https://iaitc.co/windimpactingcrops>
 - <https://iaitc.co/howwindaffectscrops>

TEACHER RESOURCES

Extension Ideas

- Wind Cards for Introduction



Image: stock.adobe.com

Wind damaged crops



Image: Shutterstock

Seed distribution

TEACHER RESOURCES

Extension Ideas

- Wind Cards for Introduction



image: Alpha Coders

Wind cooling off livestock



image: freepik

Wind causing overspray

TEACHER RESOURCES

Extension Ideas

- Wind Cards for Introduction



image: animalia life

Wind causing erosion



image: nutra boss

Wind drying out crops