



HOW COWS AND BEES HELP EACH OTHER AND THE LANDSCAPE



AUDIENCE: K-5th graders

TIME NEEDED: 30-50 mins

ESSENTIAL QUESTION:

What happens when cows and bees team up on the range, and how does this partnership benefit the cows, the bees, and the landscape?

LEARNING OBJECTIVES:

By the end of this lesson, students will be able to:

- Identify the roles of cows and bees in the ecosystem and why they are important.
- Explain how cows and bees can have a mutually beneficial relationship.
- Describe the ways in which cows and bees contribute to a healthier landscape.
- Recognize the importance of biodiversity and pollination in agriculture and the environment.
- Appreciate the importance of conservation efforts to protect bees and their habitats.

LESSON DESCRIPTION

In "Buzz on the Range," students will explore the fascinating partnership between cows and bees, discovering how they can work together to benefit both themselves and the environment. Through engaging activities, discussions, and hands-on experiences, students will gain a deeper understanding of the essential roles these creatures play in our ecosystem.

LESSON ACTION STEPS

Decide who will read the book and bring students together on a rug or divide into groups.

ENGAGE (5 MINS)

- Ask students, "Why do you think flowers are so appealing and have such delightful scents?"
- Facilitate a discussion, guiding them to the concept that flowers have evolved to be attractive and alluring to certain creatures, including pollinators.
- Explain, "Pollinators are special animals like insects, birds, and other critters that help flowers by moving pollen between them. This process allows plants to create fruits, seeds, and, eventually, new baby plants!" Prompt students to mention the pollinators they are familiar with (such as bees, hummingbirds, bats, beetles, moths, and flies).
- "Now, imagine a vast, open prairie where cows graze and live. Did you know that even in these wide-open spaces, there's a special connection between cows, bees, and the landscape? Today, we'll explore how cows and bees can work together in harmony on the range, benefiting not only themselves but also the plants and flowers that surround them."

READ & DISCUSS (10 MINS)

Read out loud, in groups, or individually "Cows, Bees, and Blossoms: A Grassland Tale."

After reading, ask, How do we depend on bees and other pollinators for what we eat? Explain to students that in some places we don't see bees as much as we used to. Ask, What would the world be like without bees?



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ACTIVITIES (10-30 MINS)

Choose 1-2 activities for the class to engage in. Activities and materials on preceding pages.

1. Puppet Story Re-Telling (All grades)
2. Role-Playing (K, 1st)
3. Word Search Activity (2nd +)
4. What-If Story Writing (3rd +)
5. Ecosystem Model Activity (3rd +)

REFLECTION (5 MINS)

Bring students back together after their activity. Ask a couple questions as a way to wrap-up.

- How would you describe the partnership between cows, bees, and the landscape to a friend or family member?
- In what ways do bees and other pollinators play a crucial role in supporting the growth of plants on the range?
- As you took on the roles of cows, bees, or flowers in our activities today, what insights did you gain about their interactions and interdependence?
- Brainstorm some practical ideas: What can you do to support bees in your own backyard? (i.e. plant pollinator seed mix in the garden).



ACTIVITY OPTIONS

Puppet Story Re-Telling (15-20 mins) - All Grades

Materials:

- Paper puppets of Lily the cow and Biff the bee.
- Craft sticks or straws for handles.
- Markers or crayons for decoration.
- Tape or glue for assembly.

Preparation:

1. Print or draw simple outlines of the characters for students to color and cut out.
2. Pre-cut and assemble one set of puppets as an example.
3. (Optional) Write down key scenes or lines from the story for students to reference.

How to Do It:

1. Introduce the Activity: Explain that students will create puppets of Lily and Biff to help retell the story.
2. Create Puppets: Have students decorate, cut out, and attach their characters to sticks using tape or glue.
3. Re-Tell the Story:
 - In pairs or small groups, students take turns acting out scenes using their puppets.
 - Encourage them to recall what Lily and Biff did to help the plants grow.
 - Use the key lines or scenes as cues if students need support.
4. Share: Invite a few groups to perform their version for the class or in a circle.

Key Learning Idea for Students:

"By acting out the story, you can show how different parts of nature—like bees and cows—work together to help plants grow."



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Ecosystem Role-Play K-1st (15-20 minutes)

Materials:

- Pom-poms or paper circles (pollen)
- Beanbags or small items (seeds)
- Open space for movement

Prep:

- Cut or gather pollen and seed items
- Mark “flower” and “seed drop” zones
- Assign students as bees, flowers, or cows

Roles & Actions:

Bees

- Fly (walk or skip) between flowers, moving pollen from one to another.
- Message: “You’re pollinators! You help plants grow seeds, fruits, and flowers.”

Flowers

- Stay in place with a hoop or basket of “nectar.” Cheer bees. Once pollinated, receive a “seed” from the teacher.
- Message: “You feed the bees—and they help you grow seeds!”

Cows

- Graze around the space, picking up seeds from flowers and dropping them in new spots to “plant” them.
- Message: “You spread seeds, helping new plants grow and supporting the whole ecosystem!”



Teacher’s Role

Guide the game using prompts:

- “Bees, find flowers with nectar!”
- “Flowers, are you ready to grow seeds?”
- “Cows, time to graze and plant new life!”

How to Do It:

- Introduce the Game: Students act as bees, flowers, or cows to explore how nature works together.
- Assign Roles and begin play:
 - Bees transfer pollen
 - Flowers receive pollen, then seeds
 - Cows collect and drop seeds
- Rotate Roles (optional) so all students try each part
- Debrief: Ask:
 - How do plants grow?
 - What happens without bees or cows?
 - How do all the roles work together?

Key Takeaway:

“Every role matters—bees, cows, and flowers all help plants grow and keep the ecosystem healthy.”





HOW COWS AND BEES HELP EACH OTHER AND THE LANDSCAPE



Word Search: 2nd grade up


Materials:

- 1 copy of the word search puzzle per student (see next page)
- Pencils or crayons

Preparation:

- Print one puzzle for each student
- Review the vocabulary words together before starting to ensure students understand their meanings (e.g., pollen, seed, bee, cow, flower, grow, soil, etc.)

How to Do It:

1. Introduce the Activity: Explain that  students will complete a word search to review key words from the story and activities.
2. Complete the Puzzle: Give students time to find the words. Encourage them to work independently or in pairs, depending on the group.
3. Optional Extension: After completing the puzzle, ask students to choose one or two words and draw a quick picture or write a sentence using the word.

Key Learning Idea for Students:

“Words help us understand how nature works. These words are part of the story we acted out—and part of how plants grow!”

What-If Story Writing (15 mins)

Materials:

- Blank paper for writing or drawing
- Pencils, markers, or crayons

Preparation:

- Offer story prompts such as:
 - “What if there were no bees on the grassland?”
 - “What if cows didn’t help spread seeds?”
- Prepare an example sentence or drawing to spark ideas

How to Do It:

1. Introduce the Activity: Invite students to imagine a world where part of the ecosystem is missing or changed.
2. Create: Students write a short story or draw a picture showing what might happen. Encourage them to be creative—funny, serious, or imaginative!
3. Share: Invite a few students to share their stories or drawings with the class or in pairs.

Key Learning Idea for Students:

“Every part of nature plays an important role. When something is missing, the whole system can change!”



HOW COWS AND BEES HELP EACH OTHER AND THE LANDSCAPE



Buzz on the Range Word Search

Can you find the words hidden in the puzzle?



C	S	N	U	N	E	C	T	A	R	W	D
F	C	L	F	M	H	K	O	B	T	U	G
P	O	L	L	I	N	A	T	R	I	R	R
O	W	E	O	L	A	R	B	E	E	I	A
W	B	Y	W	O	S	F	N	E	D	C	S
E	E	G	E	S	F	O	C	Z	I	K	S
R	L	B	R	S	T	S	E	E	D	S	C
S	L	D	S	O	K	I	I	A	G	S	A
R	R	P	R	M	W	E	C	T	I	U	N
S	P	R	O	U	T	S	T	O	R	N	S
D	F	C	O	N	F	O	V	L	U	N	N
A	S	B	U	T	T	E	R	F	L	Y	E

COW

BREEZE

NECTAR

BEE

FLOWERS

SUNNY

POLLINATE

SEEDS

BUTTERFLY

GRASS

SPROUTS

GROW





HOW COWS AND BEES HELP EACH OTHER AND THE LANDSCAPE



Ecosystem Model (20 Mins)

3rd grade +

Materials:

- Printed cutouts of bees, flowers, cows, and arrows (see Page 6)
- Large sheets of paper or poster board
- Glue sticks or tape
- Markers or crayons

Preparation:

- Print and cut one set of illustrations per student or group
- Create a sample ecosystem model to show the class
- Ensure each group has glue or tape for assembly

How to Do It:

1. Introduce the Activity: Explain that students will build a visual model of how bees, flowers, and cows interact in the ecosystem.
2. Build the Model:
In small groups or individually, students:
 - Glue the bee, flower, and cow onto their paper
 - Use arrows to show how pollen and seeds move
 - Add labels, drawings, or decorations to explain the process
3. Share & Discuss: Invite groups to briefly explain their models. Highlight how each living thing supports the others.

Key Learning Idea for Students:

“This model shows how bees, flowers, and cows are all connected—and how they work together to help plants grow and ecosystems thrive.”



ECOSYSTEM MODEL

Create a simple ecosystem model to show how bees, cows, and flowers interact to support pollination, seed dispersal, and ecosystem health.

1. Place the Flower:

- Glue or tape the flower cutout in the center of the sheet.
- Label parts of the flower (e.g., pollen, seeds).

2. Add the Bee:

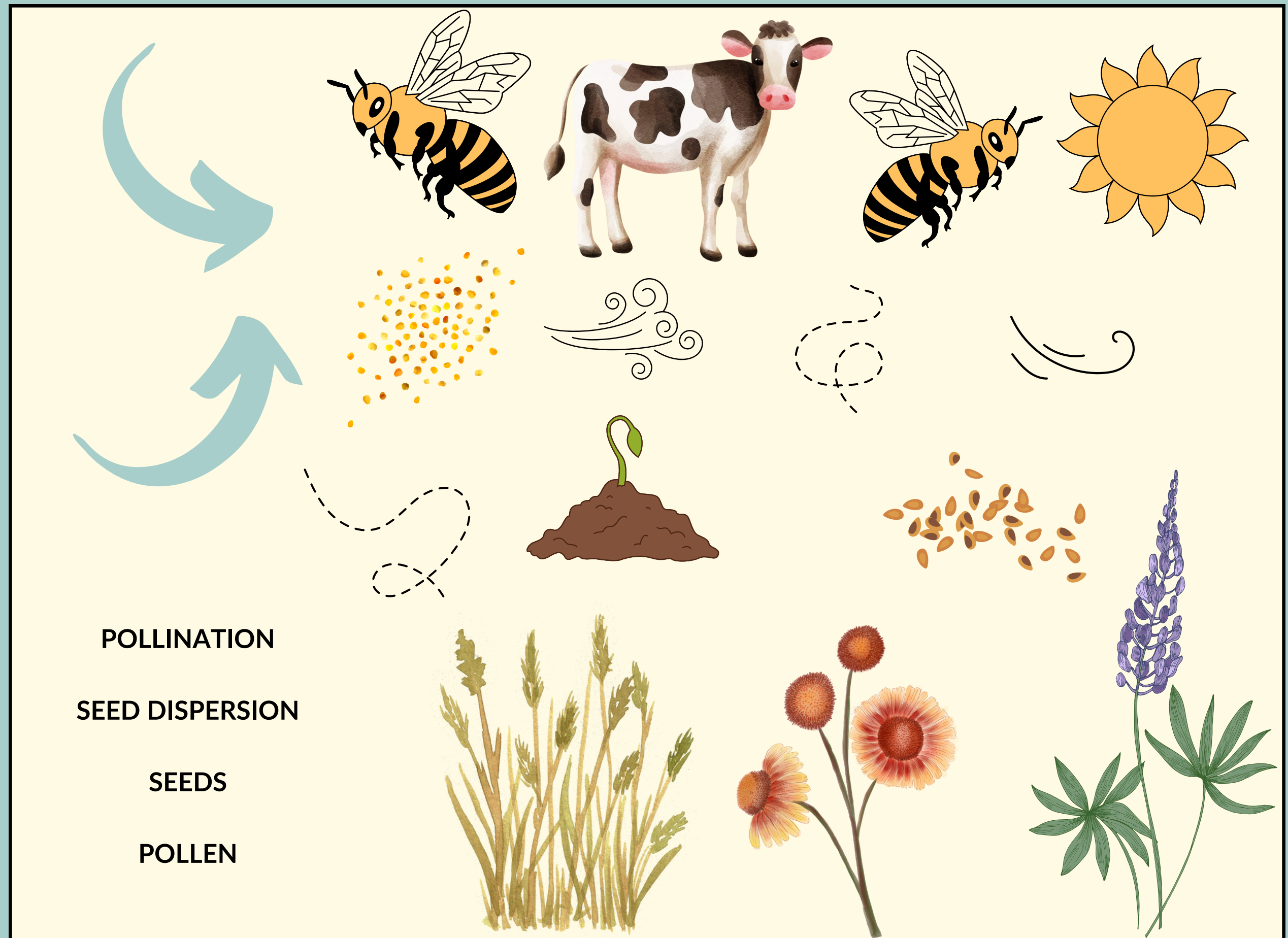
- Place the bee near the flower, showing it flying to the flower.
- Use one arrow cutout to point from the flower to the bee to represent pollination.

3. Add the Cow:

- Place the cow grazing near the flower with sprouting seeds below it.
- Use an arrow to show the cow dispersing seeds through its movements or droppings.

4. Draw or Write Connections:

- Draw additional arrows or write descriptions to explain each step (e.g., Bee collects pollen and spreads it to other flowers).





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BUZZ ON THE RANGE PROJECT

So what was the 'Buzz' all about?

The Buzz on the Range project found new ways to keep the soil healthy and help bees grow strong on Montana's rangelands. By working with ranchers, the project showed how cows can spread seeds for plants that bees love, making the land healthier and full of life. Ranchers learned through farm experiments, workshops, and fun educational events. These ideas helped them take better care of the land, their animals, and the bees, building a better future for ranching and nature in the Greater Yellowstone Ecosystem.

Buzz on The Range Ranchers



Barney Creek
Livestock



Anderson
Ranch



Blake
Ranch



Milk Maid
Meats



United States Department of Agriculture
National Institute of Food and Agriculture

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Our Soil & Bee
Professionals:



Lesson Plan: Buzz on the Range: How Cows and Bees Help Each Other and the Landscape

AUDIENCE: K-5th graders

TIME NEEDED: 30-50 mins

ESSENTIAL QUESTION:

What happens when cows and bees team up on the range, and how does this partnership benefit the cows, the bees, and the landscape?

LEARNING OBJECTIVES:

By the end of this lesson, students will be able to:

- Identify the roles of cows and bees in the ecosystem and why they are important.
- Explain how cows and bees can have a mutually beneficial relationship.
- Describe the ways in which cows and bees contribute to a healthier landscape.
- Recognize the importance of biodiversity and pollination in agriculture and the environment.
- Appreciate the importance of conservation efforts to protect bees and their habitats.

LESSON DESCRIPTION

In "Buzz on the Range," students will explore the fascinating partnership between cows and bees, discovering how they can work together to benefit both themselves and the environment. Through engaging activities, discussions, and hands-on experiences, students will gain a deeper understanding of the essential roles these creatures play in our ecosystem.

IMPLEMENTATION

MATERIALS

- Book
- Activity materials

LESSON ACTION STEPS

Decide who will read the book and bring students together on a rug or divide into groups.

ENGAGE (5 MINS)

- Ask students, "Why do you think flowers are so appealing and have such delightful scents?"
- Facilitate a discussion, guiding them to the concept that flowers have evolved to be attractive and alluring to certain creatures, including pollinators.
- Explain, "Pollinators are special animals like insects, birds, and

other critters that help flowers by moving pollen between them.

This process allows plants to create fruits, seeds, and, eventually, new baby plants!"

Prompt students to mention the pollinators they are familiar with (such as bees, hummingbirds, bats, beetles, moths, and flies).

"Now, imagine a vast, open prairie where cows graze and live. Did you know that even in these wide-open spaces, there's a special connection between cows, bees, and the landscape? Today, we'll explore how cows and bees can work together in harmony on the range, benefiting not only themselves but also the plants and flowers that surround them."

READ & DISCUSS: (10 MINS)

Read out loud, in groups, or individually "Cows, Bees, and Blossoms: A Grassland Tale."

After reading, ask, How do we depend on bees and other pollinators for what we eat? Explain to students that in some places we don't see bees as much as we used to. Ask, What would the world be like without bees?

ACTIVITY (10-30 MINS)

Choose 1-2 activities for the class to engage in. Directions, materials on preceding pages.

1. Role-Playing (K, 1st)
2. Pupper Story Re-Telling (All grades)
3. Word Search Activity (2nd +)
4. What-If Story Writing (3rd +)
5. Ecosystem Model Activity (3rd +)

REFLECTION (5 MINS)

Bring students back together after their activity. Ask a couple questions as a way to wrap-up.

How would you describe the partnership between cows, bees, and the landscape to a friend or family member?

In what ways do bees and other pollinators play a crucial role in supporting the growth of plants on the range?

As you took on the roles of cows, bees, or flowers in our activities today, what insights did you gain about their interactions and interdependence?

Brainstorm some practical ideas: What can you do to support bees in your own backyard? (i.e. plant pollinator seed mix in the garden).

SHARE ON SOCIAL MEDIA

Let us know how the lesson went!
Engage with Buzz on the Range on
Instagram with pictures and stories.

<https://www.instagram.com/wearefortheland/>

#buzzontherange

ACTIVITY OPTIONS

<p>1. <u>Role-Playing Game (15-20 minutes)</u></p> <p>Materials:</p> <ul style="list-style-type: none">• Small items to represent pollen (e.g., colored paper circles, pom-poms).• Beanbags or small items to represent seeds.• Open space for movement.	<p>Preparation:</p> <ol style="list-style-type: none">1. Cut small pieces of colored paper or gather other lightweight objects to represent pollen.2. Mark designated "flower" and "seed drop" areas in the classroom or outdoor space.3. Prepare instructions for students on their roles (bees, cows, flowers). See Role suggestions on Page 5.4. Gather beanbags or other items to represent seed.
<p>2. <u>Puppet Story Re-Telling (15-20 mins)</u></p> <p>Materials:</p> <ul style="list-style-type: none">• Paper puppets of Lily the cow and Biff the bee.• Craft sticks or straws for handles.• Markers or crayons for decoration.• Tape or glue for assembly.	<p>Preparation:</p> <ol style="list-style-type: none">1. Print or draw simple outlines of the characters for students to color and cut out.2. Pre-cut and assemble one set of puppets as an example.3. (Optional) Write down key scenes or lines from the story for students to reference.

<p><u>3. Word Search Activity (10 mins)</u></p> <p>Materials:</p> <ul style="list-style-type: none"> • 1 copy of word search puzzle per student. Word Search on page 5. • Pencils or crayons. 	<p>Preparation:</p> <ol style="list-style-type: none"> 1. Print the word search puzzle. 2. Review the words with students ahead of time to ensure they understand their meanings.
<p><u>4. What-If Story Writing (15 mins)</u></p> <p>Materials:</p> <ul style="list-style-type: none"> • Blank paper for writing or drawing. • Pencils, markers, or crayons. 	<p>Preparation:</p> <ol style="list-style-type: none"> 1. Provide prompts such as: <ol style="list-style-type: none"> a. “What if there were no bees on the grassland?” b. “What if cows didn’t help spread seeds?” c. spread seeds?” 2. Prepare an example sentence or illustration to inspire creativity.
<p><u>5. Ecosystem Model Activity (20 mins)</u></p> <p>Materials:</p> <ul style="list-style-type: none"> • Printed cutouts of the bee, flower, cow, and arrows (one set per student or group). On page 6. • Large sheets of paper or poster board. • Glue sticks or tape. • Markers or crayons for labeling and decoration. 	<p>Preparation:</p> <ol style="list-style-type: none"> 1. Print out the bee, flower, cow, and arrow illustrations. 2. Prepare an example ecosystem model for demonstration. 3. Ensure you have enough glue sticks or tape for each group.

Role-Playing Game: Explanation of Roles

1. The Bees

- **Objective:** Bees collect pollen from flowers and transfer it to other flowers, enabling pollination.
 - **How to Play:**
 - Bees pick up "pollen" (small items like colored paper or pom-poms) from one designated flower area.
 - They fly (walk or skip) to another flower and drop the "pollen" there.
 - Repeat until all flowers have been pollinated.
 - **Key Idea for Students:**
 - "You are pollinators! By moving pollen between flowers, you help plants produce seeds, fruits, and new flowers."
 - "Without you, plants couldn't grow the way they need to."
-

2. The Flowers

- **Objective:** Flowers attract bees to collect and deposit pollen.
 - **How to Play:**
 - Flowers stay in place and hold a small container or area (e.g., a hula hoop or basket) to represent nectar and pollen.
 - They cheer on bees as they collect and drop off pollen.
 - Flowers "grow seeds" (beanbags) when pollinated. The teacher or a helper can assist with distributing seeds.
 - **Key Idea for Students:**
 - "You provide bees with nectar, and in return, they help you by spreading your pollen so you can grow seeds!"
 - "Flowers are a vital part of keeping the ecosystem colorful and healthy."
-

3. The Cows

- **Objective:** Cows disperse seeds in the environment to help plants grow in new places.
- **How to Play:**
 - Cows "graze" (move around the space slowly) and pick up seeds (beanbags) from the flowers.
 - Cows can also poop out seeds.
 - They drop the seeds in different areas of the classroom or outdoor space.
 - Seeds are left to "grow" where they are dropped, completing the ecosystem cycle.
- **Key Idea for Students:**
 - "As cows eat and move, they help spread seeds

across the land, helping new plants grow."

- "You play a key role in supporting the grassland ecosystem and helping the bees by creating more flowers"
-

Teacher's Role

- Act as a "guide" for the activity, announcing when bees, flowers, or cows should act.
- Use prompts like:
 - "Bees, find the flowers with the most nectar!"
 - "Cows, graze carefully and help spread those seeds!"
 - "Flowers, who's ready to grow some seeds?"

Discussion During or After the Game

- What happened when the bees couldn't find flowers?
- How did the cows help the flowers grow?
- How would this ecosystem work differently if one group was missing (e.g., no bees or no cows)?

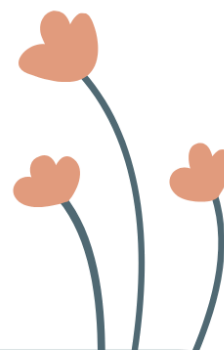
This activity can be run multiple times with role switches to help students experience all parts of the ecosystem.



Buzz on the Range

Word Search

Can you find the words hidden in the puzzle?



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W	B	Y	W	O	S	F	N	E	D	C	S
E	E	G	E	S	F	O	C	Z	I	K	S
R	L	B	R	S	T	S	E	E	D	S	C
S	L	D	S	O	K	I	I	A	G	S	A
R	R	P	R	M	W	E	C	T	I	U	N
S	P	R	O	U	T	S	T	O	R	N	S
D	F	C	O	N	F	O	V	L	U	N	N
A	S	B	U	T	T	E	R	F	L	Y	E

COW

BREEZE

NECTAR

BEE

FLOWERS

SUNNY

POLLINATE

SEEDS

BUTTERFLY

GRASS

SPROUTS

GROW



ECOSYSTEM MODEL

Create a simple ecosystem model to show how bees, cows, and flowers interact to support pollination, seed dispersal, and ecosystem health.

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- Glue or tape the flower cutout in the center of the sheet.
- Label parts of the flower (e.g., pollen, seeds).

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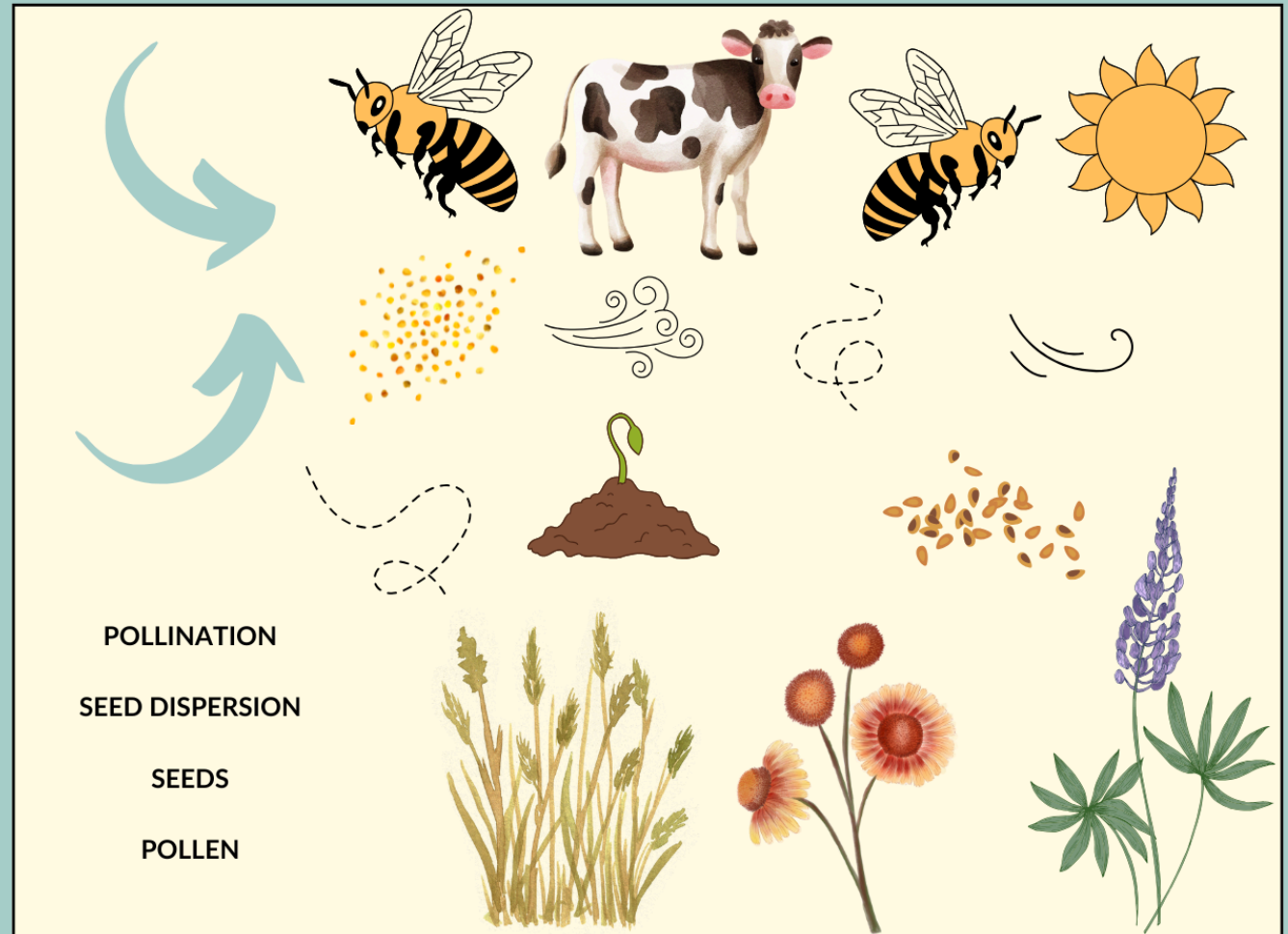
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- Use one arrow cutout to point from the flower to the bee to represent pollination.

3. Add the Cow:

- Place the cow grazing near the flower with sprouting seeds below it.
- Use an arrow to show the cow dispersing seeds through its movements or droppings.

4. Draw or Write Connections:

- Draw additional arrows or write descriptions to explain each step (e.g., Bee collects pollen and spreads it to other flowers).





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