

GARDEN MYSTERY



VIRTUAL
Field Trip
to the California Science Center

FOCUS

QUESTION:

WHY IS IT
IMPORTANT FOR
HABITATS TO
HAVE MANY
DIFFERENT
TYPES OF LIVING
THINGS?

BUZZWORD:

DIVERSITY

NGSS

STANDARDS:

PERFORMANCE EXPECTATIONS

2-LS2-2, 2-LS4-1

SEP - DEVELOPING
AND USING MODELS

CCC -STRUCTURE and
FUNCTION

OBJECTIVE:

Students will play a board game to model the role that animals play in seed dispersal. Students will investigate how a squirrel and a pigeon help to spread a variety of seeds throughout their schoolyard in order to consider how diverse plants and animals within a habitat support each other's growth and survival.

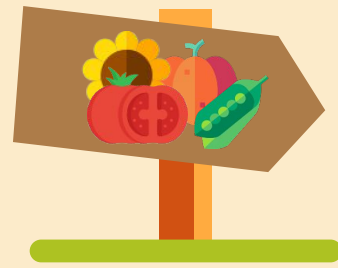
MATERIALS AND MODIFICATIONS



- **Board Game-** If you choose not to assign the [Google Slide presentation](#), you may provide printed copies of the board game and game pieces to students.
- **Die-** Search for a game die simulator or video on the internet, or use a physical die. Alternatively, a random number generator or spinner wheel could be substituted.



FACILITATING THE GAME



Students may play without a partner by rolling for both animals.

See the [digital](#) or printed game board for more directions about set up.

1. **Before students start the game:** Read the situation together and have students share their hypotheses. Allow students to share prior knowledge about planting gardens or the types of plants in the game. Note whether or not students understand that fruits and flowers contain seeds that grow new plants. If they do not bring it up, be sure to highlight this during the game.
2. **Set up the game:** Introduce students to the squirrel and pigeon who live in the school yard. Orient students to the three sections of the board: the field, the garden, and the weeds. Point out the variety, or **diversity**, of plants in the school yard. Point out that each animal has a belly where they will put the foods they eat during the game. Finally, point out the tokens that represent the food. It may help to play a round together as a class.
3. **During the game:** Follow the instructions on page 5 to play. As students play, guide them toward noticing the actions the animals take with the foods: eat, carry, or drop. Highlight that each plant contains seeds that can grow into new plants.
4. **Wrap up:** Discuss the What's Going On questions. Guide students toward noticing how the structures of the plants and seeds help them to be moved by the animals so they can grow and survive.



WHAT'S GOING ON?



- 1. Using the game board as evidence, explain how you think the fruits and flowers from the garden were able to grow where the students did not plant them. HINT: What was inside of the fruits, flowers, and animal poop?** Students may have noticed that as they searched for food, the animals either ate, carried, or dropped the foods in new locations within their school yard habitat. Students may point out mismatched colors across the game board as evidence that the plants have moved. Highlight that because they contain seeds, if pieces of fruit, flower, weeds, or the animal's droppings are left in a place with sunlight and water, more plants may grow. Scientists call moving seeds from one location to another so that they can grow, **seed dispersal**.
- 2. How would the school yard be different if the squirrel and the pigeon did not live there?** If the animals did not live in the school yard, the garden plants would only be growing where they were planted and the weeds would not have spread because their seeds would not have moved.
- 3. Based on your observations, how do the plants and animals in the school yard habitat help each other grow and survive?** The plants and animals in the school yard habitat depend on each other. The animals need to eat fruits, vegetables, and seeds from the plants to survive. The plants depend on the animals to move their seeds around so they can grow. Some seeds even have special **structures** that let them attach to animals or survive being eaten. **Diversity**, or having many types of living things in one place, is important so that all the living things get what they need to grow and survive.



ADDITIONAL RESOURCES

CONNECT WITH US!



Share your students' experience with the game on Social Media for a chance to be featured!



@californiasciencecenter



@casciencecenter

Visit the California Science Center virtually or in person to explore this standard and extend the activity with related content.

- **Watch a free video:** Join our educators to discover the diversity that exists and its importance in various habitats at the California Science Center, such as the Rose Garden and the Kelp Tank.
- **Reserve a live interactive experience:** Invite educators from the California Science Center into your classroom virtually to explore seeds and how they travel.
- **Visit us in-person:** Check out the Ecosystems Gallery to explore seven diverse ecosystems and their inhabitants.

Website: www.californiasciencecenter.org

Phone: 213-744-7444

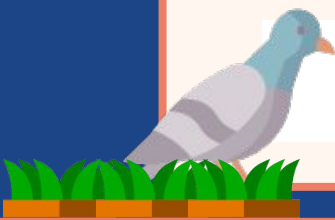
EXTENSION



- Have students make observations of seed dispersal near their school or home environments. Can they find evidence of seeds being carried, dropped, or eaten by animals?
- Some seeds are “hitchhikers”--their shape or texture helps them to stick to certain parts of animals. Have students research examples and then design their own hitchhiking seed.



HOW TO PLAY



Play the role of a pigeon or squirrel looking for food to find out what happened to the garden this summer.



- Start at square 1, in the tomatoes. Take turns rolling a die to move your animal through the school yard.
- When you land on a square, flip the matching card to see if the animal will eat, drop, or carry the food.
- Follow the directions on the card.
 - Eat:** Grab the colored dot from the seed bank and move it wherever the card tells you.
 - If you already have that food in your belly, drop it in the field.
 - Blue/purple squares:** Add or remove seeds from your animal's picture or belly. Move them wherever the card tells you.
- Play 10 turns each. Do not stop at square 14, keep going around the board as many times as you need.
- Notice where the foods from the garden and the weeds are now. Are they still where they were planted?

