

Volunteer Teaching Outline: Traveling Seeds

After a plant flowers and produces fertile seeds, those seeds must still find a spot to grow. We'll see what the inside of a seed looks like, how it holds all that is necessary for a new plant to grow, and explore outside to see the many different ways seeds move from place to place.

UNIT VOCABULARY

Cycle	Seed
Dispersal	Embryo
Ovary	Seed coat
Cotyledon	Plumule
Hypocotyl	Radicle
Leaf	Stem
Root	

SUGGESTED OUTDOOR ACTIVITIES

Scatter to the Four Winds
Schoolyard Seed Survey
Milkweed Seed Mix-up
Closing Thoughts

BOOKS FOR KIDS

- Burns, Diane, *Berries, Nuts, and Seeds*, North Word Press, 1996. (Informational; Age 7-10; Grade 2-5)
- Gibbons, Gail, *From Seed to Plant*, Holiday House Publishers, 1993. (Informational; Age 5 and up; Grade K and up; Lexile 660L)
- Robbins, Ken, (Illustrator), *Seeds*, Atheneum Press, 2005. (Informational; Age 6-9; Grade 1-4)
- Roberts, Bethany, *The Wind's Garden*, Henry Holt Publishing, 2001. (Fiction; Age 3-7)
- Saunders-Smith, Gail, *Seeds* (Pebble Books), Capstone Press, 1998. (Informational; Age 4 and up; Grade K and up; Lexile 240L)
- Simon, Seymour and Elsa Warnick (Illustrator), *Ride the Wind: Airborne Journeys of Animals and Plants*, Browndeer Press, 1997. (Informational; Grade 3-6)

THIS MONTH'S ACTIVITIES

Professor Seed E. Backpacker: use a model to learn the parts of a seed and their functions.

Seed Look and Journal Activity: observe a lima bean through dissection and identify the parts that allow it to grow into a new plant.

Upper Grades Challenge: Seeds up Close: observe closely the structure of a seed head or seed case and its seeds and make detailed drawings of each.

Puppet Show: obtain information about some of the seed dispersal strategies that are important in a plant's life cycle.

Match Up and Sort Out: observe and compare the external parts of seeds and seed-bearing structures and sort them into groups according to dispersal strategy.

Scatter to the Four Winds: model how wind carries and scatters milkweed seeds through the air.

Schoolyard Seed Survey: collect and observe a variety of seeds and seed heads outdoors, looking for evidence of seed dispersal strategies.

Milkweed Seed Mix-up: use a model to see that the conditions where a seed lands will determine whether it can sprout and grow.

Seed Showcase and Fruit Snack: observe and compare the arrangement of seeds inside a variety of fruits, while enjoying a refreshing snack.

Closing Thoughts: review and share thoughts about seed dispersal strategies.



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TRAVELING SEEDS ALIGNMENT WITH NEXT GENERATION SCIENCE STANDARDS

The activities in this unit help children understand the basic concepts in the Disciplinary Core Ideas listed here. You can use the following list as a guide for lesson planning. These Disciplinary Core Ideas are taken from Grade Band Endpoints in *A Framework for K-12 Science Education*. Additionally, our activities give children opportunities to engage in many of the Science and Engineering Practices and reflect on the Crosscutting Concepts as identified in the Next Generation Science Standards.

Grades K-2 Disciplinary Core Ideas

- **LS1A:** Plants have different parts (roots, stems, leaves, flowers, fruits) that help them survive, grow, and produce more plants. p.144
- **LS1B:** Plants and animals have predictable characteristics at different stages of development. Plants and animals grow and change. Adult plants and animals can have young. p.146
- **LS2A:** Plants depend on air, water, minerals (in the soil), and light to grow. Animals can move around but plants cannot, and they often depend on animals for pollination or to move their seeds around. Different plants survive better in different settings because they have varied needs for water, minerals, and sunlight. p.151
- **LS2B:** Organisms obtain the materials they need to grow and survive from the environment. p.153
- **LS3A:** Organisms have characteristics that can be similar or different. p. 158
- **LS3B:** Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. p.160
- **LS4C:** Living things can survive only where their needs are met. p.165
- **LS4D:** There are many different kinds of living things in any area, and they exist in different places on land and in water. p.166

Grades 3-5 Disciplinary Core Ideas

- **LS1A:** Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior and reproduction. p.144
- **LS1B:** Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles that include being born (sprouting in plants), growing, developing into adults, reproducing, and eventually dying. p.146
- **LS2A:** The food of almost any kind of animal can be traced back to plants. p.151-152
- **LS4D:** Scientists have identified and classified many plants and animals. p.167

Grades 6-8 Disciplinary Core Ideas

- **LS1B:** Plants reproduce in a variety of ways, sometimes depending on animal behavior and specialized features (such as attractively colored flowers) for reproduction. p.146
- **LS2A:** Organisms & populations of organisms are dependent on their environmental interactions both with other living things & with nonliving factors.p.152
- **LS4D:** Biodiversity is the wide range of existing life forms that have adapted to the variety of conditions on Earth, from terrestrial to marine ecosystems. p.167

TRAVELING SEEDS ALIGNMENT WITH COMMON CORE STANDARDS

In addition to science content, activities in this unit also can help students to practice the following mathematics and language arts concepts. The Common Core Standards listed here are in addition to the ones that our activities typically address, as listed in the Four Winds document, *The Nature Program: Alignment with Learning Standards*.

Grades K-2 Common Core Standards

- **Language Standard 1:** Use frequently occurring adjectives.
- **Mathematics Standard K.CC:** Count to 100 by ones and tens. Understand the relationship between numbers and quantities; connect counting to cardinality. Count to answer “how many?” questions about as many as 20 things.

Grades 3-5 Common Core Standards

- **Language Standard 5:** Explain the meaning of simple similes and metaphors in context.

