

Wild Seed Project

RETURNING NATIVE PLANTS TO THE MAINE LANDSCAPE

LESSON 4: DISPERSING SEEDS ON THE MOVE



LESSON FOCUS: THE MANY STRATEGIES FOR, AND THE IMPORTANCE OF, PLANTING SEEDS IN OUR ENVIRONMENTS

STANDARDS:

Next Gen Science: 2-LS2-2

The shape and stability of structures of natural and designed objects are related to their function(s).

Next Gen Science: 2-LS2-2

Plants depend on animals for pollination or to move their seeds around.

OBJECTIVES:

Students will understand...

1. That all plants have unique seeds.
2. That plants have many different seed dispersal strategies.
3. That humans can help disperse seeds to help plants grow.

TEACHER NOTES:

PREP WORK: The most important part of this lesson is making sure you have a diversity of seeds to explore as a class. You will hopefully have the seeds you collected as a class, but I would encourage having 5-8 types of seed, some surrounded by fleshy fruit, some that have burrs, some that have fluff and move by wind, and some nuts like acorns or beech nuts. If you have access to an area with lots of plants (on your school yard, at a local park or land trust, etc.) you can likely collect some seeds. If collecting seed does not feel feasible, you can find pictures of seeds on the internet, but the tactile experience is important.

SOME RECOMMENDED SEEDS FOR THIS ACTIVITY:

Goldenrod (wind)	Crab apple (animals)	Jewel weed (bursting)
Aster (wind)	Maple samara (wind)	Burdock (animals)
Milkweed (wind)	Ash seed (wind and animals)	Acorns (animals)

MATERIALS:

- “How Seeds Move” Worksheet
- Print-out of Seed Sowing Instructions (optional)
- Collected seeds
- Amendments for Planting
- Pots or plastic milk cartons
- Sand
- Wire mesh (if using pots)

VOCABULARY:

- Life cycle
- Strategies
- Diversity
- Evolution
- Adaptation
- Embryo
- Fruit

TEACHER RESOURCES:

You can read about best practices for collecting and sowing seed here:

<https://wildseedproject.net/2015/09/seed-dispersal-growing-the-future-landscape-one-seed-at-a-time/>

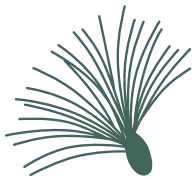
You can find a great lesson plan from Food Corps about seed travel in gardens here:

<https://foodcorps.org/wp-content/uploads/2018/07/Grade-2-How-Seeds-Travel.pdf>

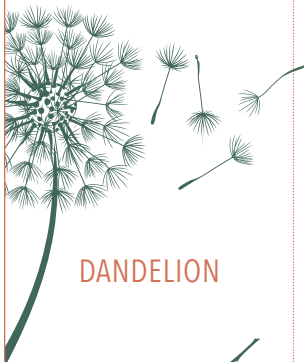
HELPFUL IMAGE:

HOW SEEDS TRAVEL

BY THE WIND



MILKWEED



DANDELION



MAPLE

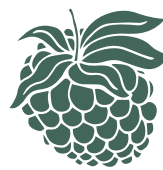
BY ANIMALS



BEGGAR-TICKS

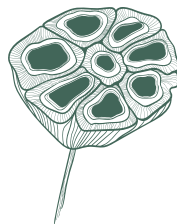


SANDBUR



BLACKBERRY

BY WATER



LOTUS



CATTAIL



COCONUT

BY BURSTING



VIOLET



JEWELWEED



WITCH HAZEL

BY HUMANS



BEAN



WHEAT



CHERRY

INTRODUCTION: HOW SEEDS MOVE

Explain to students that we are going to explore why seeds move, and how they move, before we plant our plants (a process by which we will move the seeds away from the parent plant, and be the mechanism of seed dispersal).

First, have students brainstorm the ways that they have seen seeds move before. Have they seen maple seed “helicopters” fall in the fall? Have they watched squirrels dig piles of acorns all around? Have they seen birds eat fruit? Have they watched a gardener plant a seed? Have they blown on a dandelion? Have they touched jewel-weed (also called “touch me not”)? All of these are examples of ways seeds move! Draw, act out, or explain that there are four main ways seeds move away from their parent plant:

- Wind
- Animals (including humans!)
- Water
- Bursting

Ask students why they think seeds move in the first place. Have students turn and talk to a friend for 5 minutes to think through 2 reasons why it would be beneficial for seeds to be on the move.

Have each pair share their 2 reasons. Depending on age group and comprehension, you can then move into a discussion about how different seed movements are the evolutionary adaptations of plants so that they can keep growing and have the most number of successful offspring possible! Either way, end the introduction talking through how humans are an important way seeds move, and we can move these seeds to ideal conditions and help the plant’s population grow.

ACTIVITY: SEED EXPLORATION

Using the worksheet and the seeds you have collected, the class will explore the difference between how each of the seeds move. Let each student choose two types of seeds, pick out an individual of each of those seeds, and take them back to their desk with their worksheet. Give the students 10-15 minutes to explore the seeds (bonus: if you have magnifying glasses, these would be amazing to use now!), and label the part of the seed that is the actual seed, which will turn into a new plant, and the part that is the fruit, or the part that helps the seed move. Have them label at the top of their drawing the type of seed, and its mechanism for dispersal. Once students have filled out the worksheet, have them get into groups of 3, making sure all of the types of seeds are represented in the group, and talk through what they noticed.



ACTIVITY: PLANTING OUR SEEDS

Planting in pots: Follow the “Autumn and Winter Seed Sowing in Nine Easy Steps” worksheet, attached to this lesson, to plant the seeds! The steps for planting are as follows:

1. Fill pots to the top with damp soil and then press the soil down (using your hands or another pot) so that it fills $\frac{1}{2}$ - $\frac{3}{4}$ of the pot. Make sure pots are labeled with name of plant, name of student, and date.
2. Sow the seeds thickly but evenly over the top of the soil.
3. Cover the soil with sand to cover up the seeds.
4. Cover pots with wire mesh and put them outside.

You can do a similar process planting in milk jugs, using the milk jug instead of wire mesh to protect the seeds.

RESOURCES

For videos on how to sow seeds...

In pots:

<https://www.youtube.com/watch?v=2BG09rbJY-c>

In milk jugs:

<https://www.youtube.com/watch?v=SKXY6dl-5Tk>

ONGOING: TAKING CARE OF SEEDS/SEEDLINGS

WHAT TO EXPECT

In the fall: Keep the plants outside, but semi-covered. If you planted in pots, make sure to cover up your seeds with wire mesh so that animals don't find them for a tasty treat! You could use an old screen, or some wire mesh from the hardware store. Secure the mesh with something heavy, like a brick, over the top of the pots. The seeds are dormant, so you don't need to water them yet. People have also found success planting in milk jugs to protect seeds. See the additional teacher resources for demonstration on these set ups.

Over the winter: Let the seeds be! Keep them semi-covered, and keep them outside.

In the spring: The seeds should start to germinate in the spring. You can watch them as they sprout their initial seed leaves, and then grow their "true" leaves. Keep them in pots, and water them if the soil starts to dry out. Keep the seedlings in part shade if possible.

Over the summer: Keep watering the plants so they don't dry out, and keep them in their pots. If the plants start to get brown, they might need some more space, so you can "up-pot" the plants, which means put them into a bigger pot with more soil, which gives their roots some space to breathe.

Late summer/early fall: The late summer/early fall, when the days are shorter and the sun is less hot, is a better time to plant these seedlings in the ground. They are incredibly tender during their first year of life, and transplanting can be shocking to the plants. We recommend transplanting into the ground later in the summer when the plants are bigger and the heat is less intense to avoid too much shock. Using the plan you made during the "mapping" lesson, plant the seedlings around your schoolyard or gardens. Make sure to water consistently for the first 2 weeks after transplanting.



Wild Seed Project

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Wild Seed Project builds awareness of the vital importance of native plants and provides all people with the tools to restore biodiversity in their own communities. We equip community members with the skills and resources they need to collectively repopulate landscapes with native plants that expand wildlife habitat, support biodiversity, and build climate resilience.

Learn more at wildseedproject.net