



# BIG GREEN LESSONS

Seed Saving: 6<sup>th</sup> – 8<sup>th</sup> Grade

---

## Lesson Outcomes

In this lesson students will harvest seeds and learn about seed dispersal.

- Seeds can be harvested or collected from our Learning Garden.
- There are various ways seeds are dispersed by plants.
- Seeds are dispersed so the plant will reproduce and grow a new plant of the same species the next year.

## Standards Alignment

### Next Generation Science Standards

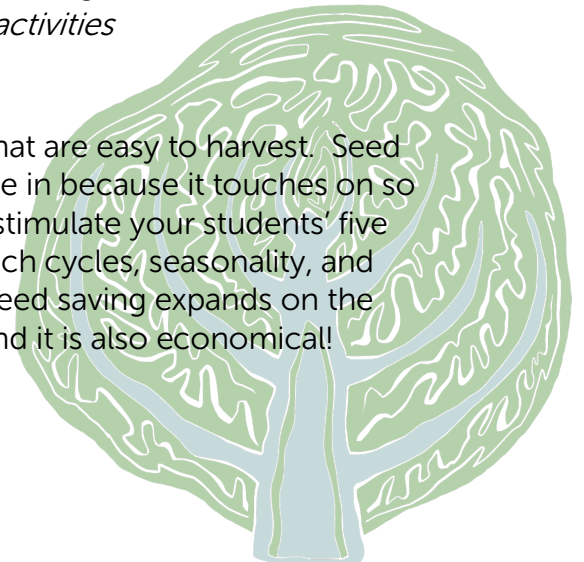
- MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plant respectively.
- MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms

## Materials & Preparation

- Seed Saving Materials
  - Container or brown paper bag, 1 per student or student group
  - Envelopes for long term storage, see Seed Packet Template
  - Sharpie to mark storage envelopes or bags
- Seed Saving Signs (Write in plant name.)
- Seed Dispersal Lab Report, one per student
- 1 sheet of 8 ½ x 11 paper per group
- Scissors, one per group
- Tape
- Dried seeds, one per group
- Fan
- Review lesson and familiarize yourself with your Learning Garden
- *Optional: supplies for additional Learning Garden activities*

## Teacher Background

Many plants in the Learning Garden will produce seeds that are easy to harvest. Seed saving is a fantastic activity for your students to participate in because it touches on so many different classroom connections. Seed saving will stimulate your students' five senses while also providing an opportunity for you to teach cycles, seasonality, and stewardship. In addition to the classroom connections, seed saving expands on the potential utility you can get from plants in your garden and it is also economical!



Seed collecting is a simple process. Before you collect seeds with your students take a tour of your Learning Garden to identify which seeds you plan to collect with your students. Some seeds will be in pods or husks while other seeds will be growing right on your plants! To collect seeds, have students use their hands to either remove the dried and hardened seeds or the pods or husks (which contain dried and hardened seeds). Students can place the seeds directly into a small container or a brown paper bag. Collect seeds in the early fall while it is still dry and store your seeds in either an envelope or brown paper bag.

**The plants below commonly provide you with seed harvesting opportunities:**

- Fennel
- Dill
- Cilantro (Coriander)
- Other Herbs
- Sunflowers
- Beans
- Lettuces
- Tomatoes
- Peppers
- Cucumbers or other squashes
- Radishes
- Broccoli

**Tips for seed saving success:**

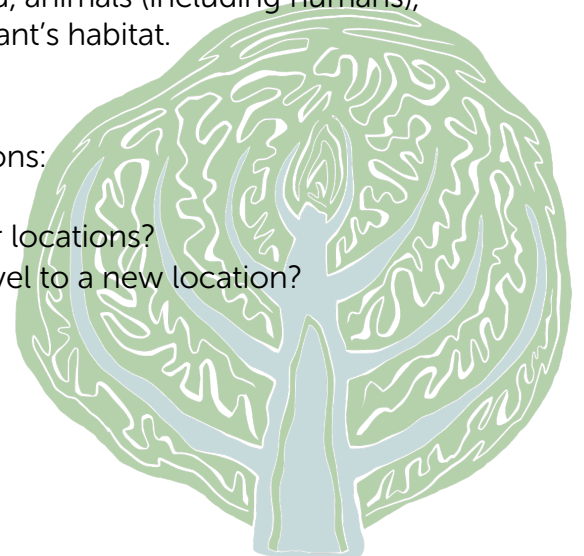
- Communicate your intentions to harvest seeds with your Garden Team so no one inadvertently removes the plants you will be collecting from.
- Leaf and root vegetables require more growing time to produce seeds than is typically planned for in the vegetable growing season. Let your radishes, lettuces, and greens “go to seed” by not harvesting their leaves for at least one month prior to your seed collection date. More time may be needed depending on crop.
- Use the seed saving signs in your Learning Garden.

Most plants have some type of seed dispersal mechanism or a characteristic that enables the seed to scatter or travel a distance from its parent plant. Seeds may be dispersed in various ways, which can include: water, wind, animals (including humans), burrs, and other mechanical means depending on the plant's habitat.

## Introduction

Spend time discussing the following introductory questions:

- Do all plants make seeds?
- How do seeds travel from the parent plant to other locations?
- Can we collect or harvest seeds and help them travel to a new location?
- Why might we want to do this?



## Activity

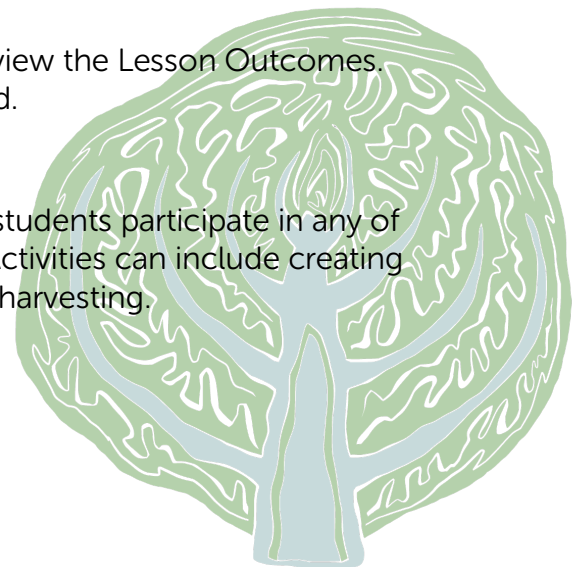
1. Welcome your students to the Learning Garden and line students up along one side. Stand on the opposite side of the Learning Garden so you can address the entire group.
2. Ask students if they know what they will be doing in the Learning Garden for the day's lesson. Let them know they will be collecting seeds from the Learning Garden that can be planted next year!
3. Invite your students to explore the Learning Garden and to hunt for seeds that can be harvested. Give students 3-5 minutes to explore the garden. Once finished, bring students back together and review their findings.
4. Take students on a quick tour of the Learning Garden, identifying the seeds that they will be collecting today. Place a seed saving sign at each plant to help the students identify the plants they will be harvesting from. Demonstrate how to properly harvest or collect a seed from each plant.
5. Break up students into groups or let students work individually. Pass out a container or brown paper bag to each student or student group and allow students ample time to harvest.
6. Once you return inside with your seeds, have your students return to their seats and then break up students into seed teams. Introduce and review the rules of the Seed Challenge and review the lab report.
7. During the Seed Challenge, students will work in small groups to design a wind dispersal mechanism that carries a single seed the farthest distance.
8. Seed Challenge Rules:
  - a. Students may not use more than 1 sheet of paper, but the entire sheet does not need to be used.
  - b. Students may cut, fold, tear, and/or tape the sheet of paper in any manner.
  - c. All seeds must remain in the seed structure during the wind test.
9. Allow each student time to complete the introduction section of the lab report.
10. Allow students a limited amount of time, about 5 minutes, to create their seed dispersal mechanism. Once students have created their seed dispersal mechanism, have each group complete three trials.
11. Allow time for students to redesign their seed dispersal mechanism and complete three additional trials.
12. Student should record these results on their lab report.
13. Have students finish the analysis and conclusion section of their lab report.

## Conclusion

Have students share key parts of the day's activity and review the Lesson Outcomes. Students should clean-up the Learning Garden as needed.

## Additional Learning Garden Activities

Extend your Learning Garden experience and have your students participate in any of the following Learning Garden activities as appropriate. Activities can include creating seed saving envelopes, planting, watering, weeding, and harvesting.



Name:

Date:

## Seed Dispersal Lab Report

Problem:

Hypothesis:

Procedure:

### Data Table

(Record data in seconds.)

	Trial #1	Trial #2	Trial #3	Average
Design #1				
Design #2				

## Analysis

Compare and evaluate the data from your 1<sup>st</sup> and 2<sup>nd</sup> design.

How is this experiment similar to what happens in nature?

How is this experiment different to what happens in nature?

What other variables effect seed dispersal in nature?

## Conclusion

Did you prove or disprove your hypothesis?  
Explain why or why not and describe one new concept you discovered during today's lesson.