



## Rotation 1

### Fall #4: Seed Saving-Plant Life Cycle

#### Objectives

Students will be able to:

- collect seed from one or more garden plants using appropriate techniques
- describe verbally or in a drawing the life cycle of the seed they are saving
- tell one reason for saving seed

#### Oregon Content

##### Standards:

3.2L.1- *Compare and contrast the life cycles of plants and animals.*

3.1L.1- *Compare and contrast the characteristics of offspring and parents.*

#### Lesson Length

40 minutes

#### Materials

- Life of a Bean Plant sheet
- old sheet
- containers
- plates
- knives
- markers and tape for labeling
- seed saving cards
- seed catalogues
- plant life cycle cards

#### Vocabulary

life cycle, diversity, adaptation, fermentation

#### Background

*(The information below is from the Seed Ambassadors Seed Saving Zine)*

#### Why Save Seeds?

- To develop durable and a resilient, local food based system
- To counter the loss of genetic diversity
- To keep food tradition alive
- To help a plant complete its entire life cycle
- To improve your future crop through seed selection
- To increase your independence and rely less on seed companies
- To save money

“Saving seeds is the foundation of developing durable and resilient locally based food systems. We are also losing diversity, biological and social, which limits our ecological and social resilience and adaptability within this changing world. About 75% of agricultural crop diversity is estimated to have been lost since the beginning of last century. Saving seeds is a powerful way to counteract this problem and have a profound effect on our future resilience and sustainability.”

By saving your own seed we don't need to rely on seed companies. These seeds are usually purchased from giant seed corporations and each year more and more seed varieties disappear, usually open pollinated and heirloom varieties.

“You fully choose what you grow and the characteristics of what you grow, thereby escaping dependency on seed companies. You may not believe it at first, but your garden is much more dependable than a seed company. Often, one grower and distributor produces all of the seed for one variety for the entire US seed market. If there is a crop failure on that mega seed farm then your favorite bean that you have been growing for years may be gone for good.”

#### Challenges to saving seed:

- You don't get to eat from the plant
- Takes time
- Many plants require isolation or a planting of >50 plants to render true seed (i.e. lack of space)

### Preparation

Locate 3 types of plants in the school garden that have seeds which you could save for planting next year (lettuce, beans, peas, chard, radish, kale, popcorn). Spread out the sheet (or several) and anchor it as a workspace. Place the needed materials in three stations.

### Garden Tasks

- Save seeds
- Search for weeds in the garden that are starting to form seeds or flowers, talk about why it's important to pull weeds before the seeds fall.
- Plant some seeds.
- Harvest and prepare sunflower seeds to be dried (you'll need salt, cups and water)
- Have students record edible seed plants they'd like to grow in the garden

### Seed Saving Hints

You can save the seeds from any plant, but you won't always end up with a plant like it's parent when you use them later. Some seeds breed true (tomatoes, beans, peas, lettuce, peppers, spinach) and others do not (squash, corn, brassicas- broccoli, kale, cabbage, kohlrabi).

Plants with smaller/closed flowers that are heirloom varieties breed "true" more often.

Plants with larger, open flowers, those that are wind pollinated and hybrids are less likely to breed "true".

## Procedure

### Introduction

1) Tell the class that they're going to be focusing on seeds and saving seeds. But before you get to that, you want to make sure that they understand the life cycle of plants and how seeds are made. Split the students into groups with a volunteer. Hand out one of the plant lifecycle cards to each student in a group. Give each group a few minutes to get themselves in order. (For an added challenge have them do this silently.)

2) Next, in their small groups, ask students why we would want to save seed. Brainstorm together but make sure to share all reasons mentioned above. Consider reasons why most people don't save seed—what are the challenges? Emphasize however, that the benefits far outweigh the costs.

3) Share with students that they will be saving seed from three different kinds of plants from the garden.

### Activities

1) The volunteers will each take their group to one of the seed saving stations set-up in the garden. If there is time, the students can go through the Reasons to Save Seed card at the beginning of each station. Next the volunteer will demonstrate the seed saving technique and the students will then practice.

2) Have students rotate through the different seed saving stations to learn about the process of saving seed from different crops. Volunteers can either stay at one station or rotate with their group. (10 min per station)

3) When students have finished all three stations, have someone carefully label each container and tell the students you will be storing the seeds in a cool dry place until they can use them for planting in the spring.

### Wrap-up

Come back together as a whole group and have students discuss which seed saving reasons they think are most important to them and why. Or, discuss which plant they saved seed from that they like to eat most. How do they like to prepare and eat it? Where do they eat it?

## Adaptations

### **To simplify**

Keep students in their small groups but have all the groups collect the same seeds. Or have each group collect just one type of seed and share what they did/learned with the rest of the class at the end.

### **To add complexity**

1) Have the students mime the life cycle of one of the types of seeds they collected. They can do this individually or in groups. The other students can try to guess which plant they are miming.

2) Use the older students version of the Reasons to Save Seeds cards.

3) Share 6-10 edible seeds that are important to human culture. (Rice, wheat, corn, pumpkin seeds, sunflowers, oats, flax, buckwheat, beans). Ask students to guess where these plants are most commonly eaten (you'll need a world map and the answers) by having them stick a sticker on the place. Share with them where they are commonly eaten. Discuss why they are important. Or, have a discussion about which ones could be planted and harvested at the school garden.

### **Rainy Day:**

You can do all of this inside the classroom as long as you cut stalks with seeds ahead of time. If you know that rain is coming and you want to do a seed saving lesson, it's best if you can cut the stalks before the rain comes and store them until it's time for the lesson. You can still collect wet seeds; you'll just have to do a lot more drying later. Make sure to put down sheets in the classroom to keep the floors clean.