

How to Plant Seeds for a Cool-Season Crop

*A lesson from the New Jersey Agricultural Society
Learning Through Gardening program*

OVERVIEW: It's easy for your students to grow vegetables that can be planted and harvested during the school year. There are plenty of vegetables that prefer to grow in the cooler weather: lettuce, carrots, kale, and peas, just to name a few. This lesson teaches which vegetables grow in the cooler seasons and how to plant them.



GRADES: PreK-5

OBJECTIVES: The student will be able to:

- Identify what a seed needs to grow
- Correctly plant a seed
- Explain how to plant seeds indoors
- Identify vegetable seeds that can be planted outside in the spring and fall in New Jersey

MATERIALS:

Various cool-season vegetable seeds such as lettuce, spinach, scallions, peas, kale, Swiss chard, and radishes. (See the entire list in the chart below.)

Potting soil

Small (4- or 5-inch) plant pots. *If you don't have plant pots, use recycled containers such as milk cartons, yogurt containers, or egg cartons. Make sure to poke holes in the bottom of these types of containers for drainage.*

Small pitcher, spray bottle, or watering can for watering

Large spoons or small pot to scoop out soil

NOTE: In New Jersey for a spring crop, cool-season vegetables should be started indoors in late February or early March, and planted outside in early April.

PROCEDURE:

Tell students: a seed is like an instant plant – you just have to add three things. What are they? (Water, soil, and sun for warmth)

Tell students that today we are going to plant seeds for a salad garden. Because it is still too cold outside, we are going to first plant the seeds inside, and then transplant the seedlings outside when it is warmer.

Because we want to harvest all of the vegetables in our garden by June before we leave on summer vacation, we can only plant what we call cool-season crops – vegetables that can

be planted in the early spring when the weather is still chilly. These vegetables include lettuce, spinach, radishes, onions, kale, Swiss chard, and peas. Ask students why we cannot plant vegetables such as tomatoes, corn, or cucumbers. (They are summer vegetables that require warmer weather and cannot be planted in New Jersey until mid-May.)

Fill the pots with soil about $\frac{3}{4}$ of the way to the top. Explain that most of the seeds are very small and need to feel the sun in order to germinate, therefore students must not bury their seeds way down in their pots. The tiny lettuce seeds need to be covered with only about $\frac{1}{4}$ of an inch of soil, the slightly larger radish and spinach seeds with just $\frac{1}{2}$ of an inch of soil, and the large pea seeds with only 1 inch. Show students the directions on the back of a seed packet that explain how to plant the seeds.

NOTE: Lettuce, radish, and spinach seeds are very small, so do not expect students to plant them one by one. Put a few seeds in the student's non-writing hand, and tell him /her to take a pinch of seeds and sprinkle them on top of the soil. Then the student should sprinkle soil on top of the seeds. If there are too many plants for one container, you can always thin them out later.

Set the pots on trays on a windowsill or under a light. (The trays will trap excess water that drains from the pots.) Ask the students what is the number-one way to kill plants indoors. (Over-water them.) To check if their plants need water, students should stick their fingers about one-inch into the soil. If the soil is dry, it is time to water. If the soil is damp, don't water them yet.

At the beginning of April, it is time for the vegetable seedlings to be planted outside. Before you do this, it is best to get your small plants used to colder weather by setting them outside for a few hours at a time. This is called *hardening off* your plants. Take the trays outside to a sunny spot where they won't be disturbed in the morning, then bring them inside at the end of the school day. Put a couple of students in charge of reminding everyone to bring the plants inside at the end of the day. Repeat this process for three or four days. Now you can transplant the seedlings into your garden.

NOTE: You can also plant the same cool-season seeds directly outdoors at the beginning of September for a cool-season crop in the fall.

EVALUATION:

Correctly planted seeds.

Older students write an informative paragraph on how to plant seeds and which vegetables to plant in the spring in New Jersey.

New Jersey Cool-season Vegetables

Beets	Collards	Peas
Bok choy	Kohlrabi	Radishes
Broccoli	Lettuces	Spinach
Cabbage	Onions	Swiss chard
Carrots	Parsnips	Turnips
Cauliflower		

New Jersey Learning Standards

*Science: PreK: 5.1.1-5, 5.3.1-4, 5.4.2 K:LS1.C, ESS3.A 1:LS1.A 2:LS2.A
3:LS1.B 4:LS1.A 5:LS1.C*

*English Language Arts: 2:W.2.2,4,8 3:W.3.2.A-D; W.3.4,8 4:W.4.2.A-E; W.4.4,8
5: W.5.2.A-E; W.5.4,8*