



## POTATO PROLIFERATION

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**Grade Level:** Grade 3

### **Description**

In this activity students will determine the area of a garden bed, determine the area needed by a potato plant, figure out how many potatoes can fit in that bed, and then plant the potatoes. This is best suited for early June.

### **Guiding Question**

How do we determine how far we space plants apart from each other in the garden? Why would we give a small potato a space a lot bigger than its size?

### **Big Ideas**

All plants need to be spaced in the garden to allow them to grow. We can determine how many plants we can fit in a given garden using projections for their mature size and area measurements.

### **Learning Objectives**

To be able to calculate area and smaller units within that given area. To learn how to plant a potato.

### **Materials**

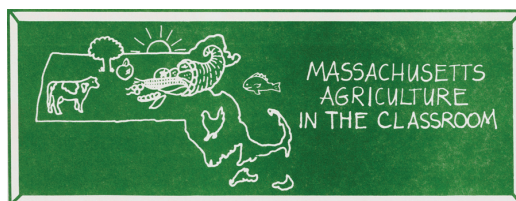
- Seed Potatoes
- A prepared garden bed, ideally one with tall sides with lots of room to add more soil on top after planting
- Mulch such as hay or leaves
- Hand trowels
- Gloves if desired
- Masking tape
- Graph paper
- 1-2 measuring tapes
- Chalk or other way to make marks on the garden bed.

### **Preparation**

1. Purchase seed potatoes from your local garden store. Although you can use any grocery store potato, getting it from a trusted source ensures that the seed is disease free and adapted for your climate.
2. Cut the seed potatoes in half, or in pieces so that each piece has at least two eyes. Do not cut through the eyes, or they will not be viable. You can do this in advance or as a class.
3. Prepare a seed bed for the potatoes. Dig the soil deep and loose. Remove any rocks and plant debris. Level the garden bed with a rake.

Lesson supported by a Specialty Crops Grant from the Massachusetts Department of Agricultural Resources.





### **Introducing the Lesson**

Explain that we are going to work together as a class group to plant potatoes in the school garden. Potatoes grow from other potatoes. (Show a seed potato and discuss the eyes, etc.) Before we can plant the potatoes, we must first figure out how many potatoes to plant in our garden bed.

**Procedure:** Total time approximately 45 minutes.

Outside:

1. Head out to the garden with a note book, and measuring tape. Have students measure the determined bed or area to be planted and record this in the notebook.

Inside:

2. Have students determine the area of the beds on graph paper or as a class.

3. Now let them know potatoes generally need to be spaced at least 12" from other potatoes in order to grow well and mature without crowding out one another. How many potatoes can we fit in our garden bed?

4. Cut up the potato seed (if you have not already done so) as a class, explaining the method. Count out your seed and determine if you have the correct amount for the garden bed area.

Outside:

5. Head back to the bed with the seed potatoes, masking tape and hand trowels.

6. Mark out the spacing intervals on your bed with chalk. Use masking tape or string and tacks to make a grid over your bed using the determined intervals.

7. Have students take a hand trowel, and dig a deep hole in the middle of these squares and place a seed potato chunk in it. I find it better not to fill them in until the end so you can make sure none have been missed.

8. After all of the potatoes have been placed, remove the grid and fill in the holes. Add leaves or other mulch at least 6" thick to keep out weeds.

### **Wrap Up and Assessing Student Knowledge**

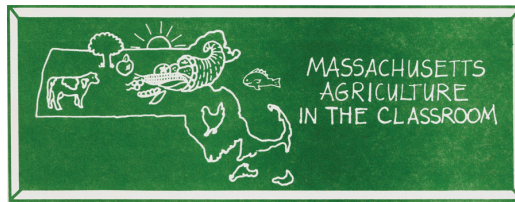
Review what you did in the classroom and the garden. Have students draw the potato planting spacing on their graphs.

### **Maintenance**

In the beginning, as your potato plants begin to grow, add more soil, compost or mulch around the plants, covering them up so that only the top few inches show. Scout the plants for potato bugs and remove and kill these insects them as soon as you see any, including the orange eggs underneath the leaves. If you are vigilant, you can stop them from damaging the plants and keep the population in check before it explodes. An old German farmer I know said that it was his job during recess at school to pick off the potato bugs. Consider giving this job to students who have the stomach for it!

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Department of Agricultural Resources.





\* **MA Department of Education Standards in this lesson** \*

\* **Math:** Geometric measurement and data: 5,6,7.

**Extensions:**

Make a poster of your activity to share with other classes in the school. Harvest your potatoes after summer vacation. Count how many grew, and compare this to how many were seeded. Count how many French fries you can make and graph this in relationship to how many you planted. Find out how many potatoes your school eats in a week and determine how many potatoes you would need to plant, and how much area it would take!

**Please visit the Massachusetts Agriculture in the Classroom website at [www.aginclassroom.org](http://www.aginclassroom.org) to tell us how you used this Garden-Based Lesson**

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