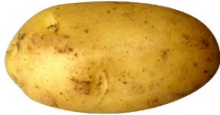




[www.MaineAgintheClassroom.org](http://www.MaineAgintheClassroom.org)



# Let's Grow Potatoes

## Grades 3-5

### Common Core ELA:

W.3.7 Conduct short research projects that build knowledge about a topic.

W.4.7 Conduct short research projects that build knowledge through investigation of different aspects of a topic.

W.5.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

### Common Core Math:

3MD.B.4 Generate measurement data by measuring lengths using rules marked with halves and fourths of an inch. Show the data by making a line plot which is marked of in appropriate units – whole numbers, halves, or quarters.

4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table.

**Lesson Description:** Students will work in small groups to research the life cycle of potatoes and learn about the growing process from a local farmer. They will plant, care for, measure growth of plants and chart the growth of the classroom potatoes.

### Learning Objectives:

The student will:

- Use at least two resources, including *Potatoes for ME*, to research potatoes. Be sure to note:
  - Soil & climate requirements
  - Growing cycle
  - Plant requirements
- Participate in planting, watering, monitoring and harvesting potatoes.
- Take weekly measurements of potato top growth to the nearest  $\frac{1}{4}$  inch and show on a line graph.
- Write a paragraph about one of the steps in the planting, growing, or harvesting of potatoes including an illustration.

### Note to Teachers:

- Potatoes are not grown from seed. You will need “seed potatoes” that will have “eyes”. Seed potatoes are available from farm and garden stores at the time of year for outdoor planting in your area.
- Potatoes may be grown anytime in the classroom. Potatoes with “eyes” will usually sprout if kept in a warm light place and then planted after sprouting. You can use small potatoes from the supermarket as seed potatoes, although they may have been sprayed to delay sprouting. Using supermarket potatoes allows you to grow potatoes at a time of year that does not coincide with local farmers.
- For growing potatoes in an outdoor garden in Maine, seed potatoes become available from seed companies or farming stores in April. The crop will not mature until late summer or early fall depending on variety.
- Potatoes may be grown in 5 gallon buckets, potato grow bags, boxes, or any container that will allow for the roots to spread. Cardboard or any similar material needs to be lined with a plastic bag with drainage holes in the bottom. The earliest varieties of potatoes take about 90 days to mature.



### Teacher Preparation:

1. Explore a possible partnership with a local farmer. Find one will willing to visit your classroom and talk about planting and harvesting potatoes on a farm.
2. Gather research materials about potatoes.
3. Gather supplies for growing potatoes in the classroom.
4. Gather several potato recipes for potato dishes that the school food service may provide.

### Supplies

- Large bucket/containers with drainage holes drilled in the bottom, plastic saucers, potting soil
- Seed potatoes cut into “eye” chunks, or small potatoes with “eyes” from the grocery store
- Rulers, yard sticks/meter sticks
- Potato resources

### Procedure:

1. Begin by having class brainstorm the different ways potatoes can be eaten (baked, mashed, potato salad, fries, chips, etc.)
2. Give each student one *How Many?* potato survey form and ask that they record the types of potatoes they eat in a week. After one week, the results can be used for a number of math activities. Possible math activities: create potato word problems, tabulate and graph survey results, and See *Potato for ME Activity Planning Book*, page 5, for a math activity.
3. Students will work in small groups to research potatoes. They will find information about:
  - a. Soil and Climate requirements
  - b. Potato growing in their state
  - c. Life cycle (or growth cycle) of a potato
  - d. Uses of potatoes (including non-food uses)
4. Record findings on chart paper
5. Following teacher directions, prepare container and plant seed potato pieces. Be sure containers are labeled. Containers should be kept in a sunny place and watered when needed.
6. Have students label the parts of a potato plant, See *Potato for ME Activity Planning Book*, page 13.
7. After leaves appear, measure the tops (the part above ground) once a week, on the same day each week and record growth progress.
8. Plot measurement information on a line graph.
9. Have local farmer come to the classroom to talk about growing potatoes, problems that potato farmers encounter and how they are managed.
10. Participate in the harvest of the classroom potatoes.
  - a. Students should be able to explain how their harvesting techniques may be different from the farmer’s way of harvesting.
  - b. Demonstrate food safety techniques (cleaning and storing the potatoes).



11. Investigate some potato recipes and choose one to ask the Food Service department to make. See *Potato for ME Activity Planning Book*, page 7, for recipes.
12. Identify the steps of growing potatoes and in small groups, write about and illustrate one of the steps of planting potatoes. Each group should write about and illustrate a different step.

## Resources

- Johnny's Selected Seeds at [www.johnnyseeds.com](http://www.johnnyseeds.com)
- Burpee Seeds at [www.burpee.com](http://www.burpee.com)
- Parks Seeds at [www.parkseed.com](http://www.parkseed.com)
- Maine Potato Board at [www.maine potatoes.com](http://www.maine potatoes.com)
- <http://www.gardeningknowhow.com/edible/vegetables/potato/container-potatoes>



## Let's Grow Potatoes Teacher's Planting Guide



Potatoes are a popular crop with green foliage above ground and tubers below. They come in a variety of shapes - round, finger-like and oval; and in several colors - red, brown, yellow, purple and whitish-tan. They require a sandy soil that is not particularly rich in nutrients. When planting potatoes in the classroom, it is important to remember the time it takes for the plant to mature and to account for that when planting so that the students are able to harvest a crop. Potatoes may be planted at any time of year. The plants need a sunny spot in the classroom or a grow light to provide the amount of light to do well.

Potatoes need room to grow. The larger the container, the more the roots can spread and the bigger the crop you will get. A wide container that is at least 12 inches deep is needed (5 gallon bucket, lined laundry basket or box, bag). The amount of sunny area in your classroom may determine the number of containers you can accommodate. Drainage holes should be drilled in the bottom of each bucket. If you don't have a drill, drive a nail through the bottom several times. Plastic plant saucers may be purchased; these are used to catch any excess water. Old dishpans or disposable aluminum baking pans may also be used. Make sure to buy potting soil intended for vegetables. Potting soil is a mix that promotes seed germination and plant development. The potting soil should be mixed with some sand (10 parts potting soil to 1 part sand). Both can be found at home improvement stores and nurseries. Do not use loam, as it is too "heavy". As plants grow and soil is added, they will be quite heavy; so moving them will become a chore. Choose early varieties for fastest maturity.

### PRIOR TO PLANTING

- When using potatoes from grocery store, select several small potatoes with eyes and place in a warm light place. They will usually sprout in about 1 or 2 weeks and are ready for planting
- Seed potatoes from a farm/garden store need additional preparation. See YouTube video: *How to plant, Grow and Harvest Potatoes* or visit [www.gardeningknowhow.com](http://www.gardeningknowhow.com)

### PLANTING

- Have students add about 3-4 inches of damp potting soil/sand mixture to bottom of container. Place a few sprouted seed potatoes on top and cover with 2 inches of soil. Potato must be completely covered (sprouts may show).
- Place in sunny spot or under grow light. Potatoes are a sun loving crop (need 6-8 hours) and provided soil has been kept moist (not soaked), foliage should grow fairly quickly..
- Water at regular intervals.
- As plant grows, additional soil must be added to be sure to cover roots and developing tubers.
- Plants will also require more water as they get larger, so should be checked daily. Any exposed roots should be covered with additional soil.
- If several types of potatoes are grown, be sure to label the containers.
- Early potatoes will mature in about 90 days, although they may be dug up somewhat earlier and eaten as smaller "new" potatoes.





## Potato Measurements in inches/feet

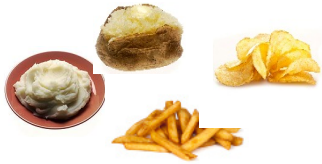
DATE	INCHES	FEET



## Potato Measurements in cm/m

DATE	cm	m





# HOW MANY?

Day	Type of potato food	How many times eaten



## Potato Recipes:

### Baked Seasoned Fries

1/4 Cup Parmesan cheese

1 Tablespoon olive oil

1 Tablespoon basil

1/2 teaspoon seasoning salt

4 medium potatoes, cut in fries

Place potato fries on cookie sheet. Toss oil and seasonings together and toss over potato fries. Bake 425 for 15-20 minutes.

### Potato Wedges

Potatoes

Olive Oil

Pepper

Sea Salt

Cut potatoes like apples slices, or wedges. Sprinkle salt and pepper, and generously brush with olive oil. Put pan on stove (preferably nonstick) and toss in all potato slices. Fry on high heat for approx. 5 minutes, or until reaching crisp golden color. Stir regularly to ensure all sides are fried evenly. Put on low heat and pour a small amount of olive oil. Turn off stove in 3 minutes.

### Potato Crisps

*by Angela Rina Adukure, (Ghana, Accra)*

Peel potato skin

Slice the inside carefully with a [potato peeler](#)

Fry it

Put salt on it

From: <http://www.kids-cooking-activities.com/potato-facts.html#ixzz3ztj3zFuE>

For more potato recipes see *Potatoes for ME Activity Planning Book*, page 7.