



## SUNFLOWER POWER

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**Grade Level: Grade 1**

### **Description**

This is a multi-part activity in which students will grow a sunflower, measure and record its growth and ability to track the sun, harvest its seeds, eat and save them for next year's first grade class.

### **Part 1: Planting the Seed**

#### **Guiding Question**

What is a seed? (A tiny package of information and instructions that in the right conditions will grow into a plant.) What does a seed need to grow? (soil, water, air, sunlight).

#### **Big Ideas**

A seed will grow into a plant, and a seed is also something that we eat. Sunflower seeds are powerful!

#### **Learning Objectives**

- To understand that a sunflower seed is something that we eat and it will also grow into a plant.

#### **Materials**

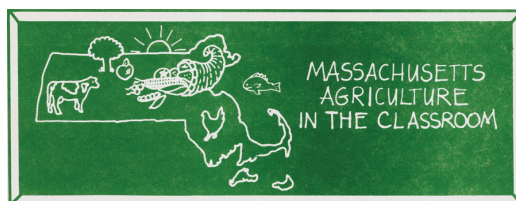
- Seed starter plugs
- plastic tray
- Flourescent shop light
- one blue spectrum and one red spectrum flourescent light
- Thin chain
- Two "S" hooks to attach chain
- screw hooks to attach light to a bookshelf
- Sunflower seeds - An open pollinated, long season variety. Ask at your local garden center.
- Plant spray bottle
- Seed starter trays
- Extension cord if necessary.

#### **Preparation**

I strongly suggest assembling the shop light ahead of time with the help of a second adult. Talk to your local hardware store to make sure you have all the necessary supplies together. The materials above are intended to create a simple light that can be screwed into an existing bookshelf.

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





### **Introducing the Lesson**

Activate prior knowledge: Have you ever eaten a sunflower seed? What other seeds have you eaten? (pumpkins, oats, wheat ground into bread, popcorn!) Has anyone ever seen a sunflower growing? What did it look like?

**Engage Student Interest:** We are going to plant our own sunflower plants.

**Procedure:** Total time approximately 30 minutes.

1. Give each student a peat pot, an 8 ounce plastic cup with their name on it filled 1/3 with water and two sunflower seeds from the seed packet. (two seeds in case one does not germinate)
2. Have them first put the peat plug in the cup, and as it expands, talk about what they are doing. Tell them we are planting the seeds. What does a seed need to live? You can brainstorm with them and write up on the board.
3. Now make a small hole in the top of your plug with your pinky up to your first knuckle, and push your seeds one-by-one in pointy end up as deep as your second knuckle. Explain that the roots and shoot will soon grow out of these seeds.
4. Have your students take their pot over to the tray, wash their hands if necessary, and take a second cup full of roasted edible sunflower seeds and sit back down.

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

Discuss what you just did as you eat sunflower seeds. You could mime the growth of a seed. Discuss what the seeds taste like. Who else eats seeds (rodents, birds, etc.) What does eating seeds do for us (give us energy, nutrition...) Look at how powerful sunflower seeds are!

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

#### **Life Science**

**Life Science Standard 1.** Recognize that animals and plants are living things that grow, reproduce, and need food, air and water.

#### **Maintenance**

Follow seed starting guidelines to water, and harden off your sunflower plants to prepare them for transplanting outside when the danger of frost has past. Wait until 3-4 true leaf pairs have grown.

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## Part 2: Planting your Seedling

### Guiding Questions

What happened to our seeds? What will happen with them next? What do these plants need to live and grow?

### Big Idea

Our seeds grew into small plants. Plants need water, sunlight, air and soil to live.

### Learning Objectives

- To understand what a plant needs in order to grow.

### Materials

- A garden bed, or enough outdoor pots to plant all of your sunflowers at least 8” apart.
- Hand trowels or planting sticks.
- Watering can
- Measuring sticks or stakes marked at 1” intervals (kids can prepare this in advance.)

### Preparation

- Dig the garden bed and rake level. Make sure your seedlings are hardened off.

### Introducing the Lesson

Today we are going to put our young sunflower plants in our garden.

**Procedure:** Total time approximately 15 minutes

Outside in the garden:

1. Give each student a stake at least 12” long marked at one inch intervals with their name written on the top half of the stake.
2. Ask them to push their stakes into the soils at least three or four inches and spaced 12” apart in the garden. Make sure they are deep enough so that they will not fall over easily.
3. Check these distances, then have them dig a hole about as deep as their hand, next to their stake
4. Next give each of them their own sunflower seedling. Have them take the seedling out of the cup and put it in the hole. Instruct them to gently pat soil around the seedling, only as high as the bottom of the stem.

### Wrap Up and Assessing Student Knowledge

Have students discuss what the plant has done since it was a seed. What do these plants need now to continue to live?

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## Maintenance and Next Steps

Measure plants weekly using the markers next to the sunflowers to check their height. Record these measurements as a class on a chart, and in individual observation logs. Take photos. Weed and water the sunflowers regularly.

Plants need the sun to live. Sunflowers are good indicators of this as they follow the sun with their heads throughout the day. Have students mime being sunflowers, with their hands around their faces as you move a “sun” around the classroom. Discuss the fact that sunlight is a kind of food for plants. Take pictures of your sunflowers at different times throughout the day, to notice the direction the head is facing. Get a stop motion camera and mount it on a stake to record this movement.

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

**Life Science Standard # 7.** Recognize changes in appearance the animals and plants go through as the seasons change.

### Extension:

#### Harvest and Seed Saving

When the students get back to school in the fall, take them out to the garden to find their sunflower. Hopefully they will be huge and ripe - wow! Cut the sunflowers off just beneath the head - before they are fully ripe and the birds get them! Dry them face up on sheets of paper with the students name in the classroom. When they fall easily out of the head, count the seeds and record how many you each had. Have each student save 3-4 seeds in an envelope with their name on it for a student next year. You could package up and do a “bake sale” type event with the rest, roast and eat them, or feed them to the winter birds.

\*MA Department of Ed. Standards in this lesson\*

**Mathmatics:** Measurement and Data #2.

### Resources:

Massachusetts Agriculture in the Classroom Newsletter on Sunflowers  
<http://aginclassroom.org/Newsletter/fall2009.html>

Massachusetts Agriculture in the Classroom Lesson on Seed Saving  
[http://aginclassroom.org/For%20Educators/Gardening\\_Resources/School\\_Gardening\\_Lesson\\_Plans/School\\_Gardening\\_Lesson\\_Grade%204%20Seeds.htm](http://aginclassroom.org/For%20Educators/Gardening_Resources/School_Gardening_Lesson_Plans/School_Gardening_Lesson_Grade%204%20Seeds.htm)

**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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