

## SUNFLOWERS ON THE FARM (FALL ONLY!)

Discover the wonder of the sunflower and how plants grow while enriching your student's math, language arts, art, science and nutrition knowledge with this hands on experience. You may choose to focus on one content area or a combination as your time allows.

Included in this activity are helpful hints, suggested materials, proven procedures, recommended literature, recipes, nutrient facts, products from sunflowers, and web sites for you to explore. Please also see the California Standards and Benchmarks that apply to this activity.

The first lesson described is rich in math and science. Lessons in language arts and nutrition are included below.

### HINTS:

1. Have a total of three adults helping you and the students.
2. Before coming to the farm, front load instruction on plants, seeds, how plants grow, read related books, discuss PHOTOSYNTHESIS, CLOROPHYL, AND THE THREE INGREDIENTS PLANTS NEED TO GROW: SUNSHINE, WATER, AND GOOD SOIL.

### MATERIALS:

1. Paper (for writing and/or drawing)
2. Pencils
3. Crayons
4. One large paper plate per child.
5. Clipboard for recording data (teachers)  
(If you want the children to draw while on the farm, ask the farmers if the farm clipboards are available.)
6. Measuring tape, rulers, yardstick
7. Large bowl or bag to take sunflower seeds back with you
8. A camera for recording activities.
9. A 10ft. long (at least) of white butcher paper
10. FARM TOOLS: SHOVEL, PITCH FORK, AND LARGE CLIPPER

### PROCEDURES:

1. After arriving at the farm and listening to the welcome by one of the farmers, you'll be directed to the garden where you will choose your sunflower for the investigation.

2. While observing the sunflower as it stands in the garden ask the children questions that will encourage their use of concepts of size such as: Who is taller, you or the sunflower? How tall (in feet) do you estimate or guess the sunflower to be? etc. This is also a good time to bring up the scientific terms PHOTOSYNTHESIS AND CLOROPHYL, & the three ingredients plants need to grow, sunshine, water and good soil.
3. Take a picture of your class or of each individual child standing by the sunflower.
4. Using the farm tools dig up the sunflower being careful to maintain the roots.
5. Place the sunflower on the butcher paper and allow the children to observe it more closely by touching stalk (stem), leaves, roots, head, petals, and describing the colors and textures they are observing. Be sure to label the parts of the sunflower so that the children can include them in the scientific drawing they may do later. NOTE: They will probably see other living creatures on the sunflower such as bugs, ants, spiders, worms, and caterpillars!
6. Measure the sunflower from its head to its base (height), the diameter and circumference of the head and record these results.
7. After closely observing the head of the sunflower, ask your students to estimate or guess how many seeds might be in the head. Record the estimations of each child.
8. Cut off the head with the farm clippers and take it to the table.
9. Give each child a large paper plate on which to put their seeds.
10. Pass the sunflower head down the table so two or more children at a time can work on getting the seeds out of the head. THIS IS HARD WORK AND THEY MAY NEED ASSISTANCE!
11. Have the children count their seeds into groups of ten for easier counting and tallying or put them on a number chart of 50,
12. Record each child's results on their plates, then to a class chart and add them up. This may be done later in the classroom. You will definitely be using the concept of regrouping! After recording the individual results, put the seeds in a bag or a bowl.

\* The above activities will take about an hour.

The following lessons can also be done to enhance content standards in math and language arts. There is also information on social studies and nutrition connections.

13. Give a clipboard to each child along with some art paper, pencils, and crayons and let them draw the sunflower (very tall) and themselves (very short) standing beside it.

14. Do a guided writing activity, journaling, etc. for them to record their experience of learning about sunflowers and how plants grow. Encourage them to use the descriptive and scientific language generated and learned and to use the facts (how tall, how many leaves, how many seeds, etc).

15. Make a classroom or individual books about their sunflower experience.

16. "Build" a sunflower in your classroom or hallway to the original height, number of leaves etc. and include all of the facts in your display.

### **NUTRITIOUS FACTS:**

Sunflower seed snacks have lots of nutrients. They are 24% protein and 20% carbohydrates. They are also 40% fat being high in oil like most seeds. However, they are also good sources of zinc, magnesium, calcium, and vitamin E.

### **RECIPIES:**

#1. Sunflower Seeds, by Leigh Abernathy  
([passioncook@aristotle.net](mailto:passioncook@aristotle.net))

After harvesting your sunflower seeds, put them in a large bowl of water and swish them around so the little pieces of dust and dirt fall to the bottom of the bowl. Then scoop them out with a slotted spoon or strainer. Soak them in a salt-water brine of five parts water to one part salt over night. Regular style salt works fine. Toast the unshelled seeds in a single layer in a 275-degree oven for 10 to 15 minutes. Keep in a cool place until ready to eat.

#2. Oregon State University Extension Service

When seeds are clean, mix thoroughly of washed, dry seeds, 1/2 teaspoon Worcestershire Sauce, 1 1/2 Tablespoons melted butter, and 1 Teaspoon salt. Place in a shallow baking pan and roast (one hour at 250 degrees F, or 30 minutes at 275 degrees F oven, or 10 - 15 minutes at 300 degrees F). Be sure to stir the seeds frequently as they roast.

### **PRODUCTS FROM SUNFLOWER SEEDS:**

Sunflower seeds are used mostly as a feed crop for animals, birds, snacks for people and sunflower oil.

A LITTLE HISTORY: (As quoted from Leigh Abernathy)

"They've been enjoyed for at least 3,000 years. Sunflowers are the only North American native plant to become a notable crop around the world, grown today from Russia to France (and Italy) and back to Minnesota. Ancient Native Americans cultivated them as an important source of nutrition and early American colonists snacked on them, too."

**SUGGESTED LITERATURE:**

1. The Sunflower House by Eve Bunting
2. The Tiny Seed, by Eric Carle