

Grade Level: Kindergarten

Title: Farmers, Know Your Field! (August /September)

Purpose:

To learn to make informed decisions

Subject Area(s) Addressed:

Science, Social Studies, Math, ELA

Common Core/Essential Standards:

Science:

K.P.1.1 Compare the relative position of various objects observed in the classroom and outside using position words such as: in front of, behind, between, on top of, under, above, below and beside.

K.P.2.1 Classify objects by observable physical properties (including size, color, shape, texture, weight, and flexibility).

K.E.1.2 Summarize daily weather conditions noting changes that occur from day to day and throughout the year.

K.E.1.3 Compare weather patterns that occur from season to season.

K.L.1.2 compare characteristics of living and nonliving things in terms of their

- Structure
- Growth
- Changes
- Movement
- Basic needs

Social Studies: K.G.1.1 Use maps to locate places in the classroom, school and home.

K.G.1.4 Identify locations in the classroom using positional words (near/far, left/right, above/beneath, etc.).

K.G.2.2 Explain ways people use environmental resources to meet basic needs and wants (shelter, food, clothing, etc.)

ELA: SL.K.4 Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.

SL.K.5 Add drawings or other visual displays to descriptions as desired to provide additional detail.

SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.

W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

L.K.2d Spell simple words phonetically, drawing on knowledge of sound-letter relationships.

L.K.5a Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.

Math:

K.CC.B.4a When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.

K.CC.B.4b Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.

K.CC.B.4c Understand that each successive number name refers to a quantity that is one larger.

K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings¹, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

Vocabulary:

before	rain
behind	right
between	soil
color words	spring
fall/autumn	summer
left	sun
number words	winter
plant	

Materials Provided:

photographs of the 4 seasons (see folder "Strawberry Photos")

Materials Needed:

strawberry plants
note pad
pencils
map of school area
clock
chart paper

Teaching Strategy:

Lead a discussion that helps students understand about the basics of the life cycle of a plant and their past experience with gardening at their houses. Students' knowledge on this is varied. Teachers can develop these ideas following the extent of their students' former experiences. Most plants begin their growing life cycle in the spring and die in the cold weather of autumn. Show pictures of the four seasons and discuss the characteristics of each season.

Show a strawberry plant. Have the students tell what they know about plants and their needs for growth. On chart paper, make a list of the needs of plants. Introduce the strawberry plant as being "unique" because it "needs" the cold weather to grow and create berries, but that it needs everything else they have listed. Tell the students that today they are going to be farmers and need to make a decision as to where on our "farm" is the best place to grow strawberry plants.

Tell the students that farmers must "know" the locations on their farms because different plants need different amounts of natural resources. Therefore, today we will go on three field trips to the same "farm," making notes about good locations for the strawberries to grow. We will go in the morning, noon and afternoon. Why would we need to go at different times? What changes in the day will affect the choice of location for our strawberry plants?

On the notepad in the classroom, make a chart similar to the one below.

Location	Time	Sun/Warmth	Space	Water	Air	Farmer's Decision	Farmer notes
1	9:30						
2	9:30						
3	9:30						
1	12:30						
2	12:30						
3	12:30						
1	3:30						
2	3:30						
3	3:30						

As you walk around the school grounds, have students choose 3 spots they think would be good (or, the teacher can choose 3 locations prior to the lesson). Each time, have them explain why that location would be good. Record data to see if location has enough of each need. Ask students to describe the location (beside the slide, behind the building, etc.) Repeat the tour of the area mid-day and late

afternoon. It is important that a spot for growing strawberries have at least 6 hours of bright sunlight, Consider shadows. Also, consider water sources, student accessibility, soil quality, and slope. If pots are used, will the location encourage people to take the pots?

Extension Activities:

1. Build the garden or put pots in the selected location.
Set up weather stations to record information in 1-4 locations.
2. Use the math standards activity questions (see the file “K Essential Questions-Math”) These questions were developed as guides to help teachers use all of the math standards with a strawberry garden and any of the lessons.

Background Information:

Students may think that you plant a red strawberry or strawberry seeds to get strawberries so the introduction to the plant is very important. Farmers in North Carolina set out strawberry plants in the fall. The plants begin to flower as early as January, depending on the weather, and are harvested in late April through May. Strawberry plants need 6 hours of bright sunlight to grow well. There are enough changes throughout the life cycle of the strawberry plant to keep students engaged throughout the year. Plants are successful in well drained containers and in gardens. Place the garden/container in a sunny, easy accessible location. While strawberries are perennial, farmers usually replant each year for larger and more plentiful fruit and for protection from diseases. Home gardeners may follow a different system, planting in spring or late fall and often keeping a strawberry patch going for 3-5 years or more.

For further information:

How-to for NC-style strawberry school garden:

<http://strawberrygardenproject.blogspot.com/>

Strawberry Growing Basics (home garden):

www.ncstrawberry.com/docs/HomeGardenBerries.htm

A general introduction to NC strawberry production specifically designed for teachers:

www.ncstrawberry.com/docs/NCStrawberryInfoforSchools.htm

<http://garden.lovetoknow.com/berries-fruits/growing-strawberry-plants-pots>

<http://www.vegetablegardener.com/item/9413/homegrown-homemade-strawberries>

Assessment:

Teacher observation and checklist of standards as students participate in class activities and discussions.

North Carolina Strawberry Association – www.ncstrawberry.com

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