

Grade Level: 1

Title: Location, Location, Location (August /September)

Purpose:

To develop an understanding of types of soils and the needs of the plants.

Subject Area(s) Addressed:

Science, Math, Language Arts, Social Studies

Common Core/Essential Standards:

Science:

1.E.1.1 recognize differences in the features of the day and night sky and apparent movement of objects across the sky as observed from Earth.

1.E.2.1 Summarize the physical properties of Earth materials, including rocks, minerals, soils and water that make them useful in different ways.

1.E.2.2 Compare the properties of soil samples from different places relating their capacity to retain water, nourish and support the growth of certain plants.

1.L.1.1 Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.

1.L.1.2 Give examples of how the needs of different plants and animals can be met by their environments in North Carolina or different places throughout the world.

1.L.1.3 Summarize ways that humans protect their environment and/or improve conditions for the growth of plants and animals that live there (e.g., reuse or recycle products to avoid littering).

1.L.2.1 Summarize the basic needs of a variety of different plants (including air, water, nutrients, and light) for energy and growth.

ELA:

W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.

SL.1.1a Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

SL.1.1b Build on others' talk in conversations by responding to the comments of others through multiple exchanges.

SL.1.1c Ask questions to clear up any confusion about the topics and texts under discussion.

SL.1.5 Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

SL.1.6 Produce complete sentences when appropriate to task and situation. (See grade 1 Language standards 1 and 3 here for specific expectations.)

L.1.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

L.1.5c Identify real-life connections between words and their use (e.g., note places at home that are cozy).

Math:

1.MD.A.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

Social Studies:

1.G.1.2 Give examples showing location of places (home, classroom, school and community).

1.G.1.3 Understand the basic elements of geographic representations using maps (cardinal directions and map symbols).

1.G.2.1 Explain ways people change the environment (planting trees, recycling, cutting down trees, building homes, building streets, etc.)

1.G.2.2 Explain how people use natural resources in the community.

Vocabulary:

foot rulers
location
map
rock
sand

soil
sun
water
water bottles
wants and needs

Materials Needed:

Google map of school – print in poster size if able or project on screen/
smartboard
maps of school grounds labeled with familiar location names
containers of water for testing soil
rulers

Teaching Strategy:

Today we are going to make a big decision – a decision about the location of a garden bed in which we will be planting and growing strawberries. This is a very important decision because it will make a difference all year about whether we have a good crop of strawberries or a bad crop of strawberries.

Pre-exploration discussion: First, we need to think about what our strawberries will need. Review the needs of any living thing (space/shelter, water, air, food) and those specifically of strawberry plants. (See “What Do Strawberry Plants Need?” Lesson for First Grade.) Show large Google map and identify familiar features such as the playground, the bus loop, our classroom. Give each group of four students a labeled map to compare their map to the Google map. Spend several minutes identifying specific locations so students can orient themselves on the map. Example: “Here is the bus loop on the big Google map”; “Here is what it looks like on your map. Can you “walk” your fingers around the bus loop?”

Now that we know what our school looks like from a “bird’s eye view,” we need to find a good place to plant our strawberries. Thinking about the map and what you know about strawberries and their need for space, sun and water, where do you think is a good place?

Because plants need space, tell the students that each plant will need at least 1 foot of space. When the students are deciding on the space for the plant, they should measure the space using a foot ruler to be sure the space is appropriate. The space chosen will need to be specific to how many plants the class is planting.

Explain to students that because strawberry plants need water, the type of soil in which they are planted is important. Explain that students should pour water on the soil in several locations to observe how the water reacts with the soil. The best soil would be soil that gets moist because the water is absorbed. If it runs off, the soil or the soils will appear to stay dry. That soil is less desirable or needs more work to get it ready to plant.

Exploration: Take students on a tour of the school grounds, identifying different locations on the map and discussing if this would be a good place for strawberry plants to grow. Is there enough space for the plants? Is it a safe space for the plants and their fruit? (A space away from the swings or the walking path, and secure from two-legged and four-legged animals who want to eat the ripened fruit) Is there space enough for the garden workers? Is there a water source

nearby? Is there enough sunlight for the plants to make their own food in the leaves? On each group's map, students mark the locations with numbers they consider possible choices. They can write notes on the back about each site.

Depending on the independence of your group, move around the school grounds together or let each group explore independently. Safety rule: "As you move, you must always be able to see me. If I can't see you, you are in the wrong place."

Post Exploration discussion: Using the Google map display, have each group identify a location which they think would be a good location. Members of the group defend their decision using soil, water, accessibility and sunlight. Through class discussion, decide and mark on the maps where the best location is for the strawberries to grow. Be sure all needs are able to be met.

Return to the Site: Return to the decided site. Discuss what is good about the site as it is now. What changes will need to be made to support a garden or pots of strawberries? Point out that this a time where people might be changing the environment (by adding soil and compost, trimming bushes, etc.)

Extension Activities:

1. See Kindergarten Lesson "Farmers, Know Your Field."
2. Have your soils tested. This is a free service of the NC Department of Agriculture and Consumer Services. You can get soil test boxes and forms at your local Cooperative Extension Office and get help from local Cooperative Extension agents or master gardeners. Results can be sent back to the school usually in a few days or weeks. See <http://www.ncagr.gov/agronomi/pdffiles/stflyer.pdf> How to soil test <http://www.ces.ncsu.edu/local-county-center/> Locating your county Extension center

Background Information:

The first grade curriculum includes studies of soil types. This activity is a supplemental activity for that study. The activity can be completed without in-depth soil study, but the teacher will need to build more understanding of the needs of a garden with space, water absorption and soil type.

Strawberries can be grown in many types of soil, but generally like the same soil as a vegetable garden, one that is moderately rich, well-drained, and with a pH of 6.0-6.5.

During the summer months the strawberry farmer considers the prime location for his/her strawberry fields and gets the soil ready for planting by testing to see what nutrients are needed and then adding fertilizer or compost. The strawberry farmer will have the same water, space, and soil considerations that first graders will have.

The location of the garden or placement of the pots is crucial in the successful growing of plants. They need a sunny location with access to water. Strawberries thrive in different types of soil, but may need compost or fertilizer supplements. If you are building a garden, be sure there is enough room to support a raised bed. For information on building a school strawberry garden, see http://www.growforit.org/images/uploads/curriculum_files/1_Strawberry_Garden_How_To.pdf.

Also helpful is <http://guilford.ces.ncsu.edu/2012/02/lets-dig-in-soil-preparation-for-your-vegetable-garden/>.

Assessment:

Students' completed maps, notes and observation of participation and defense of location. Each student writes an opinion stating why s/he feels the location of the strawberry garden chosen is the best being sure to state opinion and support it with facts.

North Carolina Strawberry Association – www.ncstrawberry.com

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