**Mapping the School Garden**

*Interpreting and making maps*

**OVERVIEW**
The purpose of this lesson is for students to investigate why people use maps, how maps help people in their daily lives, and the different types of maps that people use. This lesson directly relates to the 1st Grade Social Studies Unit “Getting Around Town” and can be used as either an introduction or reinforcement of the unit. Students will generate a list of why maps are useful and the different ways that people use maps. Students will also study important map elements such as a compass rose, scale, and key. Students will then go outside to the school garden and create a map of the garden, with the goal of including garden beds and any other elements that are important such as compost bins, sheds, walkways as well as a compass rose, scale, and key.

In cooking, students will compare reading a map with reading a recipe to understand the importance of following directions so you get where or what you want.

**TIME**

90-120 minutes, depending on which activities are done. Can be done in one long block, or in 20-30 minute shorter lessons over multiple days by breaking small groups into individual lessons.

**GUIDING QUESTIONS**

Why do people use maps? How do maps help people in their daily lives?

Are all maps used for the same reason? What are the different kinds of maps that people use?

How are maps made and what is important to include on a map?

How are maps and recipes similar?

**MATERIALS**

1. Trail maps, street maps, city maps, town maps, etc. for introduction to maps and discussion
2. Clipboards, pencils, and colored pencils for garden mapping activity
3. Blank or graph paper, simple map of garden, or complete map of garden for differentiated garden mapping activities
4. D.C. Neighborhood Map (provided) printed out for park and garden design activity
5. Playdough, toothpicks, popsicle sticks and other craft materials for park and garden design activity
6. Recipe ingredients and materials

**Definitions**

- **Map:** A picture or chart that can show landforms, streets, metro systems, etc. in a particular area. A tool used for directions and finding one’s location.
- **Cardinal Directions:** The main directions on a compass (NESW)
- **Compass Rose:** Circle on a map that shows NESW, and allows for orienting oneself when using a map
- **Key:** Pictures/icons that represent different things on a map. The key tells you what the icons on the map mean or stand for
- **Bird’s Eye-View:** A view from above

**Note:** Many first graders have not been exposed to paper maps because finding locations is now mostly done through GPS and phones. It is important to acknowledge how people use apps like Google Maps for directions, but also share how paper maps are useful. For example, show students the map in your classroom of how to exit the building during a fire drill. Would a phone help in this situation? Probably not! So, a paper map is crucial in this instance. What about traveling in a foreign country where you don’t have cell phone service, etc?

**Books**

- "Mapping Penny’s World" by Loreen Leedy
- “Me on the Map” by Joan Sweeney
- “Maps & Globes” by Jack Knowlton
ENGAGE / EXPLORE

Begin by showing students a variety of maps. You can show students trail maps, street maps, city maps, garden maps, etc. Include a map of your own town or city, including the area where your school is located. Ask students to share what they notice about each map that you show them. What do they see on the maps? What do they think the map is used for?

Next, facilitate a discussion in which students generate a list of reasons why maps are useful as well as the different ways that people use maps. To help students generate ideas, you can refer back to the maps that you just showed them, and ask students why they think a specific map is useful and how people use it. For instance, you could show students a trail map that leads to a mountain peak. Ask them, “how is this map used to get to the top of the mountain?”

After observing the maps and generating ideas about the usefulness of maps and why people use them, you can ask students any or all of the following essential questions: Are all maps used for the same reason? What are different kinds of maps that people use? Why do people use maps? How do maps help people in their daily lives?

To close the discussion, return to the map examples, and show students that on each map there is a compass rose, scale, and key. Have students share what they think each is used for, and then help to define them. This is a good time to also talk about bird’s-eye view and how many maps are displayed this way. You can use the garden map below to show that the compass rose, scale, and key are missing. Students can help you add these map elements to the map by suggesting where and how to draw each. You can also call students up to draw each map element onto the map. A larger version of the garden map is attached at the end of this lesson.

Example Garden Map: Missing Key Map Elements
A variety of different learning activities are listed below. Please choose those activities that fit best with your students, class time, and teaching style.

In small groups:

1. **Garden - Social Studies:** In the garden, work with your students to create original maps of the garden, with the goal of including all important elements, such as raised beds, compost bins, sheds, walkways, etc. This activity can be differentiated in the following ways:

   1. **The most advanced version** of this activity is to provide students with a clipboard, pencil, colored pencils, and blank piece of paper or graph paper. **Students will use these materials to create a bird’s-eye view map of the garden.**
   2. **An second option** for this activity is to provide students with an outline of the space space on graph paper. **Students will fill in the rest of the garden elements on the map outline.**
   3. **A third option for this activity** is to provide students with a clipboard, pencil, and colored pencils, and a simple map of the garden with the beds and any other significant structures on it, but unlabeled. **Students will add labels, plants, and other aspects of the garden they feel are important to put on the map.**

2. **Garden - Social Students:** Students use complete garden maps to explore the garden. This activity can be differentiated in the following ways:

   1. **The teacher can guide students through the garden and they can use their complete maps as if they are tourists on a guided tour of the garden.** For example, the teacher can say “Now we will use our maps to walk to the squash. Everyone point to the squash on the map. Ok, let’s follow the map to get from where we are to the squash!” The teacher can continue this process for different plants and areas of the garden.
   2. Using the complete maps, **students can pair up and then use complete garden maps to tell each other where to go around the garden.** For example, one student would point to the compost bins on the map, and their partner would have to find the compost bin, using the map to guide them their. Students would repeat this process with different map elements, taking turns choosing where their partner should go.
   3. **Students can also use the complete maps to find certain things in the garden, similar to a scavenger hunt.** For instance, the teacher can come up with a list of elements in the garden the students must find (compost bins, specific raised bed, the hose, etc.), and each student must use their map to find each element. Students can check them off on the map as they find them.

More activities continued on next page...
3. **Classroom - Social Studies:** Students will study a map of a section of Southeast Washington, D.C. (provided at the end of lesson). Ask them to find the compass rose, key, and scale on the map. Then have them find areas that have plenty of parks and gardens, and areas that do not have many parks and gardens. **Provide students with playdough, toothpicks, popsicle sticks, and pipe cleaners to design a park or garden for the area that they found that was lacking green space.**

4. **Classroom:** Cook a recipe that requires students to practice reading the recipe ingredients and instructions, such as a baked good (**Applesauce Oatmeal Bread**, **Carrot Muffins**, **Spiced Oatmeal Cookies**). Read the recipe aloud to the students, and then explain to the students that reading a map and reading a recipe are similar: You have to pay close attention when you read a map so that you don’t get lost, and you have to read a recipe carefully so that you don’t miss a step or ingredient! See end of lesson for suggested recipes.
EVALUATE / ASSESSMENT

Ask Guiding Questions listed above to the whole class at the beginning and end of the lesson to compare gains in knowledge.

Student gains in knowledge can also be assessed by asking them to give examples of types of maps that people use, the uses of different maps, and to identify and explain key map elements.

RECIPEs

The following recipes (and many more) can be found at http://freshfarm.org/foodprints-recipes.html.

- Applesauce Oatmeal Bread
- Carrot Muffins
- Spiced Oatmeal Cookies
- Spinach Ricotta Pesto & ABC Salad
- Black Bean Confetti Salad & Chili Lime Slaw
- Aloo Palak & Apple Kohlrabi Salad
- Applesauce
- Apple Crisp
- Ratatouille

UNITs, STANDARDS, CORNERSTONES

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<th>SOCIAL STUDIES UNIT</th>
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<td>Getting Around Town: They will be able to use maps and globes to interpret and demonstrate mastery of information about places and the environment. Students will also demonstrate their understanding of geography by labeling maps (including using cardinal directions), planning routes, and locating places (such as Washington, D.C.) on maps. In addition to reading maps, student will work to construct their own maps to lead others to places or locations that they think are important.</td>
<td>1.1: Students interpret maps, including the use of map elements to organize information about places and environment. 1.1.1: Locate cardinal directions (e.g., north, east, south, and west) and apply them to maps and globes.</td>
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Map of Southeast D.C. for Park/Garden Design Activity

https://www.nps.gov/fodu/planyourvisit/maps.htm
Example Garden Map: *Missing Key Map Elements*