

Map It Out

Map your school grounds to find the perfect site for your garden

Gardening Connection:
Students can be engaged in garden planning from the start by assisting with site selection.

Time Required:
3 class periods

Grade Level:
K-12

EDUCATOR NOTE:
If your school's garden site has already been selected, students may map an existing garden site or design and map a garden expansion instead of designing a map for a new garden site.

OBJECTIVES

Students will be able to:

1. Read a map
2. Create a map that includes key, orientation, scale, and features
3. Identify features needed for a school garden site

BACKGROUND

Mapping is a wonderful tool for visual learners. It is also a critical piece of planning a school garden.

Cartography is the study and practice of making maps. What began as an interpretive art form involving parchment, paintbrushes, and a knowledge of the heavens has evolved with technology. The compass, the sexton, and now CAD and GPS have resulted in increasingly technical and accurate mapmaking.

Maps provide information on the current status of a location – roads, rivers, and where things exist. Maps also provide perspective on changes – where are we going, how do we get there, and even where should we plant our school garden?

MATERIALS

- Examples of maps
- Graph paper & pencils
- Clipboards
- Measuring tapes
- Compass

PROCEDURES

Engage

Ask students to close their eyes and think about their walk into school that morning. Have them think about the things they see everyday surrounding the school: playground equipment, sidewalks, fences, trees, etc.

Subjects

Math
Social Studies
Science

Vocabulary

Cartography

Project Connections

WET – Color Me a Watershed (extension)
Branching Out
Rainy Day Hike
PLT - Schoolyard Safari
Are Vacant Lots Vacant?

Provide students with grid paper and pencils and ask them to draw a “map” of the school grounds from memory. If students are younger, this step can be done as a class and on the board.

Draw the school building on the board. Ask students to think about what is around the school. Allow students to come up and add to the “giant map” on the board. Students may add the flagpole, a sidewalk, etc.

Ask students when and why they might use a map. Provide each student or small group with a map (this can be an age appropriate map of a park, city, state, etc).

Have each group create a list of the information they can gather from the map. This may include the location or place the map represents, the size of that location, distances, natural features (rivers and streams, lakes, etc), manmade features (roads, trails, railroads, certain buildings, etc).

Have each group share some of the information they obtained from the provided map. List these things on the board for the students to see and review.

Expand upon this list and lead a discussion on how maps communicate information. Discuss the various map symbols, colors, the key, the concept of scale, etc.

Encourage students to think about the maps they did from memory (or the map on the board). Did their review of map features remind them of anything they forgot to include?

Explore

Tell students that the study and practice of making maps is called cartography. Share with students that today they are going to be cartographers because they are going to create a map of their school.

Identify the purpose for creating this map is to help select a location for the school garden. Review the information that maps provide and instruct students to include this information on their map. Ask students which features might be particularly important to include for a garden map (hydrants, hoses and down spouts, sidewalks, entrances to the site and the school, large trees, etc.).

Take students outside and allow them to begin the task of creating a map of the school grounds. Depending on the age and skill level of the students, it may be open-ended with an opportunity for problem-solving (older students) or may require guiding the students through the process of creating their map. This can also be done with older students in a peer teaching opportunity.

Provide students with orientation (N, S, E, W) and dimensions or allow older students to use a compass and a measuring tape to find this information. It may be necessary to allow students more than one opportunity to work on their maps in the schoolyard.

Explain

In the classroom, review the purpose of these maps. Have students compare the memory maps they made in “Engage” with their more detailed maps. What are the similarities and differences between the two maps?

Allow students to share the features of their new maps. Discuss the importance of some of the features:

Orientation – This allows us to know the direction the sun is moving and prevailing winds. We need to ask when is the sun the hottest? Is there a time of day that the garden will be shaded?

Water sources, hydrants, hoses, and downspouts – Every garden needs water. It is important to know where water sources are located when placing the garden.

Other man-made features - These are other key factors in placing your garden, but also require you to know how your produce will be used. If the produce is going to be taken into the school and used, is there a sidewalk and entrance that makes transport into the school easy? Is the entrance to the school close to the room where the produce will be stored or used (classroom or lunchroom)? If the produce will be loaded into a vehicle and taken to a local food pantry or co-op, is it easy (and close) to get to the parking lot?

Natural features – Trees, hills (slope), and other natural features must be considered when placing a garden. Will any of these items harm or help the overall health of the garden?

Working as a group, identify one or two of the best locations on the school grounds to place the garden.

Elaborate

Take students back outside with copies of their maps after a rain event. Have students look for places where there are large puddles or flooding and identify them on the map. Review these locations and discuss whether they affect the final location choice of the garden. It may be necessary to consider changing the proposed garden site to a location with better drainage.

Evaluate

Option One:

Have students develop a garden site recommendation proposal for your school's administrators and facilities and operations staff. The proposal should include a drawing of the proposed site along with justification for why the garden should be placed on the recommended site.

Option Two:

Using the maps that each group has created, allow students to conduct a "treasure hunt." Provide each group with access to the site without the other groups. Have them bury or hide their treasure within the site. Using copies of their maps, each group should mark the location of their hidden treasure with an appropriate symbol and identify it on the key. Once all groups have hidden their treasures and marked the locations on their maps, have groups trade maps and find the treasures. Allow students to provide each other with feedback on the usability of the maps.

Option Three:

Have students create a map of their yards, neighborhoods, route that they take to school, or other special place. Regardless of the location, maps should include a key, orientation, scale, and man-made and natural features.

Extension Ideas

Look at climate zone maps to determine which plant hardiness zone the school is in. This can be done in conjunction with determining the appropriate plants and planting times for the garden (see KS School Garden Curriculum Activity *What's With This Weather?* for background and activity ideas).

Compare and contrast various types of maps – (General versus Thematic) historical, climate, economic, physical, environmental, political, topographic, online, etc. and ask students to identify ways that they might use maps in their daily lives, when planning a trip, etc.

Review your school's evacuation plan and look at the map posted in the classroom for fire and severe weather.

Once the garden site has been chosen, have students design a more detailed map of the garden site that includes the layout, spacing, and design of crop placement.

Resources:

K-State Research & Extension Kansas planting zone map

<http://www.kansasgreenschools.org/files/zones.pdf>