



# Playground Mapping Lesson Plan

## Overview

This is the second of two lessons (with [Playground Modeling](#)) that help children develop their spatial visualization skills as they learn to represent features and physical objects on their playground. In this lesson students will convert the physical models from [Playground Modeling](#) into a map of the playground complete with a scale and key. As extensions, children can use their map to locate (and measure between) objects on the playground, and to think about how plant and animal habitat on their playground might be impacted by humans.

Suggested Lesson Sequence	Please see the <a href="#">Earth Systems Foundations: Maps and Images</a> , and <a href="#">Global Visions</a> module descriptions.
Lesson Level	<a href="#">Entry</a>
Science Connections (Keywords in <b>BOLD</b> )	<ul style="list-style-type: none"> <li>Students learn about <b>perspective</b> and their playground by drawing a <b>map</b> with important features.</li> <li>Students locate <b>features</b> on the playground using maps.</li> <li>Students explain how their play may <b>influence</b> plants and animals.</li> </ul>
Math Connections (Keywords in <b>BOLD</b> )	<ul style="list-style-type: none"> <li>Students are able to draw a map using <b>symbols</b> to <b>represent</b> playground features.</li> <li>Students will draw a <b>map</b> using <b>directionality, symbols, scale</b> and <b>proportional reasoning</b>.</li> <li>Students will be able to <b>approximate</b> distances between objects and transfer to a <b>finer scale</b> using a simple <b>grid map</b>.</li> </ul>
Human Connections	<ul style="list-style-type: none"> <li>Plants and animals on the playground may be affected by children playing</li> </ul>
Lesson Assessment Tools	<ul style="list-style-type: none"> <li><a href="#">Assessment and Standards Table</a> (Word)</li> <li><a href="#">Assessment Activity Description</a> (below)</li> <li><a href="#">Authentic Assessments</a> (below)</li> </ul>

## Materials

- This lesson requires Powerpoint Reader ([Windows](#) / [Mac](#)) and [Adobe Reader](#).
- Pencil and crayons
- Glue
- Playground models from previous lesson, [Playground Modeling](#) (if possible)
- Small construction paper shapes (squares, triangles, etc.) for students' maps
- Large map
- [Image to Map Photo Essay](#) (Powerpoint)
- Playground Mapping Activity Sheet ([PDF](#) or [GIF](#))

## Vocabulary

- **Scale:** A proportion used in determining the relationship between the size of a representation of an object, and the object itself

## Procedures

### I. Assess Prior Knowledge

Background information: This lesson further develops students' spatial sense by having them move from physical representations of the playground (as they might have completed in [Playground Modeling](#)), to *pictorial* representations of the playground (a map).

As a continuation of the \*previous lesson\*, have students describe and compare their physical models with those of their peers. Look for them to demonstrate proportional reasoning as they discuss various objects on their model mat.

### II. Contextual Preparation

1. Prepare students for this activity by showing them examples of several maps. You may have access to a world map or atlas that the students could study. As they examine the map(s), continue to probe their understanding of scale, symbols, etc.

2. Show students the Image to Map photo essay. In this photo essay there are two separate examples of satellite images and human-made maps of the same region of land. Do not rush students through the photo essay. Rather, give them plenty of time to study and discuss the differences between the maps and the images. Questions for discussion might include:

- What do you see on the satellite image? What can you identify on the ground? (trees, rivers, roads, etc.)
- How are the maps different from the images? (They do not contain "real"

pictures, they contain symbols, they have a scale, etc.)

- When might you want to use a map instead of an image?
- When might you want to use an image instead of a map?

This discussion will help you understand what map features children are familiar with - particularly what they know about map keys and scale.

### **III. Activity: Create a Map**

1. Using an overhead projection of the Playground Mapping activity sheet, begin to create your own map of the playground based both on the models you may have already created in the \*previous lesson\*, and/or students informal knowledge of the playground. As you begin to draw in a few objects on the playground, ask students to help create and label various symbols on the map. At first do not show your students a key. Rather have them discuss the meaning of each symbol on your map. As they share their ideas, encourage them to develop understanding of the necessity of a "key" to help others (who may see the map later) understand what each symbol stands for.
2. Remind students of their classroom models (or photos of models) and the beginning of the example map you just created. Now, distribute the Playground Mapping activity sheet to students with the instruction that they are to begin creating their own map of the playground. Children may want to use the same symbols that you began to use on your map, but encourage them create their own as well. Children should be aware that objects are often represented by different symbols on different maps. That is why a key is so important. You can help students develop comfort with these symbolic representations by having them use separate pieces of construction paper (1 or 2 inch shapes) for each piece of playground equipment or landmark.
3. Prior to handing out the glue, ask students to arrange the pieces on the map in the way they intend to glue them. Observe and discuss the different ways that students arranged their pieces. Students will observe that their maps may look different - they may be oriented in unique ways. This is an opportunity to introduce the use of cardinal directions. Readers expect all maps of the same area to be similar in their design. One way to make them similar is to pay attention to the four directions: north, south, east, and west. Depending on the sophistication and/or grade level of your class, you may wish to introduce the notion of direction, and ask students to label their maps accordingly. If all four directions are too much for children, narrow it down to either north and south or east and west, depending on the natural landmarks that children already know and can use to orient themselves. You can also help orient the students to direction by drawing in a key feature, like the school

building or the bus loop, on the activity sheet template.

4. For more advanced classes, you may wish to introduce the notion of "scale" as a feature of a map. It is not necessary for the students to be exactly correct on their scales at this grade level (for example, each one-inch grid = 10 feet). However, some recognition of the use of scales, and the necessity of maintaining consistency with respect to scale is important to emphasize.

#### **IV. Assessment**

Depending on the age level, children should be able to begin roughly approximating distances between objects on the playground (measured in steps) and transferring those measurements to a smaller scale using a simple grid map. Children should be able to draw a map using symbols to represent playground features. Children should be able to locate the north, south, east, and west directions using a compass. Children should be able to locate playground features using their maps and recognize how their play may influence plants and animals. Assess these understandings by examining their maps. As appropriate, check for their use of symbols, directions, a key, and scale. Other assessments may be made through the use of the extension activities below.

#### **Lesson Extensions for Authentic Assessment**

1. Looking at the maps, the class can also discuss how the playground is a home for plants and animals. For example, looking at the map, where would you expect to find squirrels or birds? Children can also discuss how their playing may affect the plant and animal life on the playground.
2. Children can measure the distances between objects on the playground "in steps" and write the numbers of steps on their map. For example, children may count 10 steps between the swing and slide. Ask students what the possible disadvantages are of using a unit of measurement that is not standard.
3. Engage children in a treasure hunt. Hide large objects on the playground and describe their location as children look at the map. For example, "There is a secret treasure buried half way between the slide and swing set." Have children record you clues on their maps with stars or stickers. Then they can use their map to locate the treasure. You may wish to compare how students do when they are given written clues, as opposed to being given clues on the map. Children will appreciate the power of a map as a communication tool without having to use written words.

#### **Acknowledgment**

The image of the river bend was acquired by the NASA Landsat 5 satellite. The image of the Black Hills was acquired by the IKONOS satellite, Space Imaging, L.C. and used under the NASA data purchase program.