Community Map

Summary

This activity focuses on helping students understand the location of their physical community and the relationship they have with the community and the neighborhood.

Main Core Tie

Mathematics Kindergarten

Strand: GEOMETRY (K.G) Standard K.G.1

Materials

Map of area
Large grid (graph mat or grid made from shower liner)—square is preferred
Photographs of recognizable community landmarks (or student drawings)

- *A Trip Around Town*

Additional Resources

- *A Trip Around Town*
  , by Amanda Boyd; ISBN 0-8239-8915-1
- *Mapping Penny's World*
  , by Loreen Leedy; ISBN 0805072644
- *Roxaboxen*
  , by Alice McLerran; ISBN 0590455893
- *And The Dish Ran Away With The Spoon*
  , by Janet Stevens; ISBN 0152022988
- *Me On The Map*
  , by Joan Sweeney; ISBN 0590107054
- *Madelenka*
  , by Peter Sis; ISBN 0-374-39969-7

Background for Teachers

This activity focuses on helping students understand the location of their physical community and the relationship they have with the community and the neighborhood. Therefore, student participation in the previous lessons: ABC Community Walk and Patterns And Shapes In Our Community is beneficial preparation for this lesson. Based on these lessons, students already have an understanding of a community and neighborhood. This activity is best done in the context of a class study of the school and surrounding community.
Students will review, reinforce, and apply their knowledge of number recognition, counting to ten, and spatial relationships. Prior exposure to these math concepts will further the students' feelings of success.

Intended Learning Outcomes

5. Understand and use basic concepts and skills.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

Instructional Procedures

Invitation to Learn:
Following an introduction to the students' school, community, and neighborhood through several

class walks around the school and local environment, show the students a professionally created map of the area (can be found in the phone book or on the Internet). Ask the students to comment on what they are viewing and what they know about maps. You may also want to show a variety of maps (topographical map, street map, surveyor's map, etc.) that show different uses of maps and techniques of map making. Discuss with the students why we need maps and how we can use them. For example, we use maps to help us find how to get to a new city; we use maps to help us find a store in a mall; or we use maps to help us find a friend's house.

On the map of the area, point out where to find the school and other important buildings in the area. Show other familiar areas (e.g., the park, local swimming pool, or the areas you saw together on a class walk).

Continue the discussion of why maps are used and how they can show us where our community/neighborhood is located. Tell students we are going to create our own map to help us identify the spatial relationships (where things are in relation to other things) between important locations in our community.

Instructional Procedures

Show students the photographs of various important buildings/areas in the surrounding neighborhood (student drawings, student construction paper art pictures, or photographs from previous lessons may be used). Discuss how we can see these buildings when we look outside of our school or drive down the street. Identify each with a specific name for reference. For example, the fire station, the bank, the grocery store, etc.

Call attention to the grid you will be using to represent the map. Explain how the map has been divided into sections we call blocks (relate this term to the students' schema of "walking a block," or "my friend's house is a block from mine," etc.). Show the students where a city block is located on the published map. Tell them this grid will be used as a map of our neighborhood for us to identify where we (the school building) are located in relation to other areas in our community.

Place the photo of the school on the grid where two lines intersect. You may want to place the school in the center portion of the grid to act as the focal point. Place another photo on the grid (e.g., the public library). Ask the students how we might get from the school to the public library. Show the students a variety of pathways that could be taken to get from one place to the other. During this time the teacher should be interjecting specific vocabulary words (these should be taken directly from the Math Core Standard III, Objective 2, which include: on, over, under, above, below, top, up, down, in front of, behind, next to, beside, near, and far) that clearly show the students the spatial relations between the buildings. Introduction of "left" and "right" may also be appropriate. Explain to the students that when looking at a
map we are viewing the ground from above. Therefore, terms such as up and down refer to directions in which to move rather than physically moving "up" off the ground.

Read *A Trip Around Town*. Point out the similarities of the map grid in the book and the class grid. Notice how the characters visited a variety of places in their town. They were able to show how they traveled from one place to another.

Continue placing photos on the grid and describing their location in relation to the school as they are placed on the grid. As each photograph is placed on the grid, discuss the building and how it (the people there) contributes to the community and how the students are affected by the surrounding community. Talk about how the grid is a small representation of the actual buildings and community. Explore different pathways that could be taken on the grid to get to and from the same locations. As students are talking about how to get from place to place, reinforce the use of correct vocabulary. For example students may say, "If I start at the school and walk two blocks up then three blocks to the right, I will be next to the fire station." or "The McDonalds is above the grocery store and far away from the school."

As the students become competent at finding a pathway from one location to another, introduce a way to record their verbalizations. Write down several student verbalizations using a specific recording scheme. For example, a student may say, “I started at the library and went two blocks up, one block over to the left, two blocks up, and arrived at the police station.” This could then be written on a chart in the following ways:

start: library U U L U U or

start: library 2 U, 1 L, 2 U end: police station.

Practice with the students showing only the symbols and only giving a starting place. See if the students can follow the steps to arrive at the correct location.

Extensions

Floor Grid

Prior to using pictures, students may need a more concrete way to identify and practice the spatial relations vocabulary. Tape a grid on the floor; place two students on the grid. One student moves to meet the other student, counting blocks (steps) and identifying direction as s/he moves. Class members can also assist in directing one student to the other.

Construction Paper Buildings

Have students use construction paper to create the community buildings for the map instead of using photographs. You may also allow the students to create their own community by making representations of buildings they would like to have in their community.

Center Grids

Create small grids on an 8 1/2 in. x 11 in. sheet of paper to use in a center. Write coordinates with accompanying icons for students to navigate through the map.

Partner Grids

Using small grids, students work with partners to describe directions for the partner to follow. One student places a small token (Unifix cube or counter) on the grid where two lines intersect. The other student gives a direction such as move two blocks up and three blocks over. The first student moves his/her token according to the instructions. Switch roles.

How Many Ways?

Using small (8 1/2 in. x 11 in.) student grids, students draw two buildings on the grid. Students try to find as many different pathways from one building to the other. Using a different color of crayon for each path the student draws a path from one location to the other. Students must stay on the grid lines. Students should also be expected to tell about their paths and may have the opportunity to record their information (idea adapted from *Navigating Through Geometry In Prekindergarten-Grade 2*, Carole E. Greenes (editor), a NCTM publication).

Three Dimensional Community

Read Roxaboxen. Allow students to create a three-dimensional community using boxes, cardboard, blocks, and construction paper. Again have students use spatial relation vocabulary to describe their location in the “town” to others. For example, “My building is close to Matthew’s but it is far away from Jessica’s.”

Near/Far Photos

Partner students and have them decide on an item they would both like to photograph. Both students will take a photo of the same object. However, have one student take a near picture while the other student takes a far picture. Print the pictures and share as a class book. Show the students the meaning of near and far. Have them identify the near/far photo for each pair of students.

Class Graph

Make a class graph of how you got to school (e.g., walk, ride, bus, bike, etc.). Have a class discussion of why students get to school in a variety of ways (e.g., those who live close to school may walk because the bus can’t pick them up; while students who live farther away will ride the bus). Point

out to the students that some students may consider their house near to the school while others may be far away.

Family Connections

Go on a walk together and notice the important landmarks on your street and surrounding area. Return home and make a map of your neighborhood. Indicate on the map which direction you walked.

As you drive to and from different locations, notice and record how long it takes to get to a variety of places. Discuss why some places take longer to drive to (they are farther away). Look at a phone book map together and identify the locations. Notice whether you are moving to the right/left or up/down on the map.

Assessment Plan

As you work together on the class grid, have each student come up individually and follow your oral or written instructions on how to get from one location to the other on the grid. Observe student ability to follow direction words such as up, down, over, under, etc. Is the student able to count the correct number of blocks on the grid?\

Give students an individual grid. Orally state a pathway for them to follow. They can demonstrate their understanding of direction words by correctly drawing the path on their grid.

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