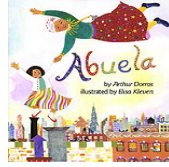




STEM Investigation 2: Mapping Our Classroom

Description: Children create maps and models of the physical layout of the classroom.



Standards Addressed:

ETS1.B: Developing possible solutions

Science Practice Standard: Developing and using models

Enduring Understanding:

- Communities are affected by their environments. People use their senses to observe the environment and materials in their community, and may describe and label materials according to their observable properties.

Essential Question:

- Where do you find what you need including information, help, and companionship in your communities?

Materials:

- 8 ½" x 11" white paper
- clipboards
- crayons
- adhesive labels to label areas of the classroom
- a book or picture that shows a kindergarten classroom
- pencils
- markers

Vocabulary:

- data
- describe
- notice
- observe
- map

Preparation:

Write the focus question on chart paper: ***“What do you notice about the different parts of our classroom?”***

Photograph some important features of the classroom so that children can access a 2-dimensional representation of the 3-dimensional objects and space they will be trying to represent on paper.

Intro to Centers:

“What are some important words that we need to understand as scientists in order to answer this question?”

“What is another word that means the same thing as notice?”

“When scientists observe something, what do they use?”

“As scientists this week, you will have a chance to observe our classroom. You will be using your eyes to collect information about our classroom.”

“Scientists need to tell others about what they discover. The information they record is called **data**. How do you think we could share what we find out about all the different parts and centers in our classroom and where they are?”

Indicate and read the focus question.

*Circle, discuss and annotate key words (**notice, classroom**).*

*Write the word **observe** above the word **notice** on the focus question.*

Collect children’s ideas, and suggest that scientists might use a magnifying glass or a mirror.

*Annotate the word **notice** in the focus question with a drawing of an eye.*

“We can draw scientific illustrations, or drawings, of the classroom. Here is an example of an illustration of a classroom. Now I’m going to begin one myself.”

“As scientists this week in the STEM center you will make careful observations of the important and interesting areas in the classroom and you will record what you find by drawing a picture representation of our classroom. Other people can look at it to find out about our classroom.”

Show an illustration or photograph of a classroom.

Model getting started with your own classroom map, beginning with an obvious classroom feature and adding a few more as you narrate your thinking process.

Show one paper bag (with a non-sharpened pencil inside). Invite one child to demonstrate with you, prompting her to describe the qualities of what she feels in more than one way.

Show two empty bins, one labeled “smooth” and the other, “rough”. Invite another child to suggest which bin to put the pencil in.

During Centers:

Throughout the week children will make observations of what they consider to be the most important objects and places in their classroom. In the STEM center children will draw (and label, if possible) pictorial representations, or map models, of the classroom on sheets of white 8 ½” x 11” paper.

Some children will be most successful with the opportunity to photograph the various features of the classroom rather than draw them. Be prepared to make this option available.

Guiding Questions during Centers:

- What areas of the classroom do you most like to work in?
- In what area(s) of the classroom do we _____ (read books, paint, hang up our coats, build, etc.)?
- What would happen if we didn’t have special places in the classroom to keep our _____ (books, blocks for building, coats, etc.)?
- Have you ever seen an illustration that shows where places or things are? (suggest that they may have been on the subway or bus, or that family members may have driven them somewhere in a car)
- If you’ve taken the bus, the subway, or driven in a car, how have you known which way to go so you don’t get lost?

Sharing our Research:

- What did you do this week as scientists in the STEM center?
- Revisit the focus question: **“What do you notice about the different parts of our classroom?”** Children can turn and talk to a classmate about something they have noticed. Have children’s drawings available so they can look back at their findings.

- Looking at the data you generated, what did we find out about where the important parts of our classroom are located? As children describe the physical features of the classroom, add these features to your own scientific illustration that you began at the start of the investigation, and label each feature. Remind children that when you record like a scientist, you draw what you see, not what you think you know. Ask children if they know a name or a word for the pictures that they drew and that you completed on the chart paper. One or more children will probably say, “map.” If no child mentions this word, explain that their drawings are a kind of maps.
- Help children understand that a map is a form of technology: it is a tool that helps people to better understand a particular space—in this case, the classroom.
- Ask, “How can a map help us to understand and make sense of the shared physical space in our classroom?”
- What important features should a map have for it to be useful?
- Make the connection between the maps that students drew during this investigation and the aerial perspective of the city that the girl and her grandmother see in *Abuela*. If any children draw their maps from an aerial perspective as part of this investigation, point out this specific connection to the text/illustrations.
- Ask children if there are any other questions that they have about maps or about the different parts of the classroom. This is also the time to review and discuss any questions from children that were ‘banked’ during the week.

Documentation:

Photograph and/or video the children engaged in this activity. If possible, include the area the children are mapping and the map they are creating in the pictures to generate an interesting discussion at a later time to reinforce the concepts.

Using this as a Provocation:

Encourage students to create 3-dimensional models of the classroom using blocks, LEGOS, or other manipulatives and materials of various shapes and sizes.

Encourage children to create labels and/or signs for the different areas of the classroom they identify (bathroom, sink, block area, etc.).

Encourage children to draw pictures and write sentences about how they might improve or change areas of the classroom. Children could draw a map of their ‘ideal classroom.’

Extend this investigation by mapping other parts of the school, playground or school neighborhood. Bring the children on walks around the school or the neighborhood with clipboards for drawing maps.

Note: Children’s Own Questions

Children will generate any number of authentic questions as they work. During each STEM investigation in *Our Community*, keep a large piece of chart paper on the wall near the STEM Center with a marker attached by string. Throughout the week, adults record or “bank” any spontaneous questions you hear children ask as they are engaging in the investigation. On the fifth day of each investigation, during the Sharing our Research session, the teacher will review these child-generated questions with the class, following the directions in the written investigation. After Investigation 4 in *Our Community*, if you would like, work with children to develop their own investigation to try and answer one of the child-generated questions that were banked during Investigations 1-4. This investigation could take place during the fifth week when there is no written, required STEM investigation.