

Exploring Area through Fabric and Pattern Blocks

Goal

At the end of the lesson students will be able to recognize area as an attribute of plane figures. They will be able to compare areas of two different objects by covering them with each other or the same units. They will understand the significance of specifying what units are used.

Introduction

Students will be introduced to the concept of area through quilting pieces and pattern blocks. Children will investigate how to compare area by manipulating fabric. Students will be introduced to the concept of measuring area by covering the fabric pieces with square and triangle pattern blocks. Students will conclude the activity by creating a “quilt square” individually or as a small group (depending on number of participants) by gluing their fabric designs to a cardboard square that will be secured to other classmates’ with yarn loops. On the back of the square students will write what they now know about area.

Supplies

- K-W-L Chart on Anchor Paper
- Precut Quilting Pieces
- Square and Triangle Pattern Blocks (Sorted)
- Liquid Glue
- 4 to 6 12” x 12” squares of cardboard
- Holepunch
- Yarn
- Black Marker
- Area Investigation Guide Sheet

Activity

Begin the activity with a whole group discussion using a K-W-L chart. Tell the children that they will be learning about area. “This is probably a word you have heard before. What do you **know** about area?” Record the children’s responses.

Complete the second column of the chart. “What do you **want** to know about area?” Record the children’s responses. If they do not know where to begin, suggest using the 5 Ws and 1 H (Who? What? When? Where? Why? How?).

Introduce the activity and review the “Area Investigation Guide Sheet.”

Have the children sit at tables or desk clusters of 3 to 5 and distribute precut quilting pieces and pattern blocks to each small group. Allow the children to work at their own pace with materials and encourage discussion amongst the small groups.

Once the members of a group have worked through the guide sheet, give them glue, a cardboard square, and a black marker. Ask them to write 1-2 sentences on the square about something they now know about area. It could be a definition, example, or fact that relates to area and the work they have done today. Instruct them that when completed, flip the square over and glue down their fabric pieces in any design that they wish.

Once the squares are finished call the class back together as a whole group to complete the third column of the K-W-L chart. “What did you **learn**?”

Wrap-Up

Conclude the lesson by reiterating the key takeaways on the K-W-L chart. Once dry, punch two holes in each side of the squares and secure together with yarn to create an “area quilt.” Display the quilt in a place where the children can be reminded of the work they’ve completed. Possibly add more squares to the quilt as you learn more about area measurement.

Name _____ Date _____

Area Investigation Guide Sheet

1. Select two pieces of fabric.

Are they the same size? If not, which one is larger? _____

How can you tell?

2. Choose one of your existing pieces of fabric to work with. Cover this fabric with the same type of square blocks as best you can without leaving any gaps.

How many square pattern blocks does it take to completely cover the fabric? _____

Describe the area of your fabric piece using the sentence frame: This piece of fabric has an area of _____ square blocks because it can be covered by _____ square blocks without gaps or overlaps.

3. Cover the same piece of fabric with a triangle pattern block.

How many blocks did it take you this time? _____

Describe the area of your fabric piece using the sentence frame: This piece of fabric has an area of _____ triangle blocks because it can be covered by _____ triangle blocks without gaps or overlaps.

Why did it take a different number of blocks?

4. On the back of your cardboard square write 1-2 sentences about something you now know about area. It could be a definition, example, or fact.
5. Flip the square over and glue down their fabric pieces in any design that you wish.