


Unit 5  Week 3	<b><i>Small Groups: Slides, Flips and Turns with Geometric Shapes</i></b>  <b>Low Support</b>	<b>Math</b> <b>SG 1</b>	<b>Standards:</b> MELDS.M.G.PS.6 MELDS.M.G.PS.8 MELDS.MD.PS.5
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<p><b><i>Guiding Math Ideas:</i></b></p> <ul style="list-style-type: none"> <li>● Slides, Flips and Turns</li> <li>● Patterns- Adding Complexity</li> <li>● Problem Solving</li> </ul> <p><b><i>Math Concepts from Unit Learning Progressions:</i></b></p> <ul style="list-style-type: none"> <li>● Math Words help us solve problems</li> <li>● Orientation and directionality: Manipulating shapes by Slides, Flips and Turns</li> </ul>
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<p><b><i>Materials:</i></b></p> <ul style="list-style-type: none"> <li>● Slide, Flip and Turn Cards – Teacher Resources</li> <li>● Small Foam Geometric Shapes- Math Materials</li> <li>● Construction Paper</li> <li>● Markers</li> <li>● Glue Sticks</li> </ul>	<p><b><i>Math Vocabulary:</i></b></p> <ul style="list-style-type: none"> <li>● Slide- moving from one side to the other without turning or changing anything</li> <li>● Flip- moving from front to back (opposite)</li> <li>● Turn- twisting to the left or right</li> </ul>
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***Preparation:***

This lesson follows the Large Group *Slides, Flips and Turns*.  
Have at least 2 copies of the Slide Flip and Turn Cards, so that children on either side of the table can see them with the correct orientation.  
Place all supplies on table.  
Put one piece of construction paper in front of each child.  
This activity starts with some teacher direction and then changes into an open ended activity.

***Procedure:***

Introduce the activity.  
*Remember when we played Slides Flips and Turns in Large Group? We moved our bodies in these special ways. Here are our Slide Flip and Turn cards. They show us how we can move shapes in space, just like we moved our bodies.*  
*Today we are going to move our shapes to match the cards.*  
Have children choose some geometric shapes from the basket. Show one of the cards and children will move the shapes on their paper. Continue until you have presented all of the cards.

Open-Ended Play Begins:

How could we make *Slide Flip and Turn Pictures*?

Get ideas from children and suggest that they glue shapes on their paper using the glue sticks, and use markers to draw arrows that show whether they are thinking about slides, flips or turns. Help with labeling or ideas as the children manipulate the shapes.

Examples:

*I see that you took several triangles and turned them in different directions. Are they still triangles?*

*Wow, you turned that square to balance on one corner. It looks sort of like a diamond- but is it still a square?*

*You flipped that shape- does it look different now?*

*Those circles look the same no matter which way you turn them. I wonder how we could show a flip by drawing with our markers?*

Encourage children to write and draw on the paper and on the geometric figures as they manipulate them and make Slide Flip and Turn Pictures. Some may want to trace around the shapes or draw their own shapes and arrows of other ways to show their understandings of Slides, Flips, and Turns.

### **Strategies to Provoke Math Thinking:**

- What is a Shape? From the viewpoint of young children it can be a mystery why some marks are called shapes and some marks are called letters and some numbers.... And some don't fit any category at all. Drawing or tracing shapes is often introduced too early in preschool curriculum as a first activity. (See van Hiele's work on stages of shape understandings described in Unit 5 Where's the Math?) It is important for children to explore, manipulate and talk about shapes before being expected to draw them. By this time in the year in *Math for Me*, we have built with shapes, played games with shapes, moved our bodies like shapes, used with floor shapes and identified shapes in the environment. Some children have been drawing shapes on their own, an indicator that it is appropriate to introduce drawing shapes as an open-ended activity.

### **Adaptations for Additional Learning:**

- An excellent book to extend children's thinking is *The Greedy Triangle* by Burns and Silveria.
- Experiencing spatial concepts: Map Making. Slides Flips and Turns are an excellent way to combine two major areas of geometry- shape and space. Extend this activity into map-making, using small 2-D shapes as points on the map. For example, triangles can represent trees, squares or rectangles can be cars or houses, circles or pentagons can be playground equipment.

#### **Documentation:**

- Collect the Slide Flip and Turn pictures, or have children bring their papers to a LFOAI or story acting session. As children discuss their pictures, make notes about their varying understandings of the characteristics of shapes, as well as orientation and directionality.

#### **Provocation:**

- Direction and Orientation Words: Challenge children to name as many direction and orientation words as they can, and create a word wall. It will surprise everyone (adults and children) how many times we used these words in our everyday lives. Geometry is everywhere!