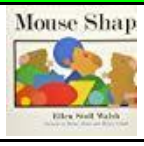
Unit 4 Week 4	***Small Groups: Roll a Shape Pictures*** Low Support	**Math** **SG2**	**Standards:** MELDS.M.G.PS.3 MELDS.M.G.PS.4 MELDS.M.G.PS.5



Guiding Math Ideas:

- Geometry- Directionality and orientation
- Geometry- Parts/Wholes in geometrical figures

Math Concepts from Unit Learning Progressions:

- Classifying shapes by describing and comparing some attributes.
- Using shape puzzles and shape manipulatives for parts/wholes understandings
- Playing games and initiating activities that involve directionality and orientation

Materials:

- *Mouse Shapes* by Ellen Walsh (multiple copies, if available)
- medium/large die
- foam shapes, 6 different shapes
- tape (sturdy tape such as packaging)
- shape template resource
- multi-colored paper
- large construction paper
- glue sticks or glue

Math Vocabulary:

- parts/wholes- parts go together to make a whole thing

Preparation:

Make a Shape Die. Tape foam shapes to each side of the medium/large die using clear tape - 6 sides, 6 shapes.

Use the Shape Template and copy shapes onto different colored paper and cut out. Vary the sizes of shapes (the Word Document allows you to edit the size, orientation and color of these shapes.) Note that 2 different types of triangles are included. Others can be created. Optional: There are dozens of Shape Picture Templates online available for free download, if you prefer.

Set up table with book and materials, placing die and cut out shapes in front of each workspace.

Procedure:

If possible, read *Mouse Shapes* to children during SWPL prior to this Small Group.

Introduce *Mouse Shapes,* turning pages and commenting on the different shapes that the mice find and the pictures that they create. Turn to the page…. *And surprised the cat!*

What shapes do you see in this mouse? (There is a Picture Template of this mouse shape that can be used).

Demonstrate the shape die if needed.

We are going to make some shape pictures today. When you roll the die, pick out the matching shape and start to make a picture. You can create your own picture or you can use these designs to fill in the shapes.

As children work, reinforce the names and orientation of the shapes, inserting math language into the activity as they children select shapes and create their shape pictures.

You have rolled 4 squares. What could you make with 4 squares?

I see that you have turned that triangle upside down to make some teeth for your cat face, just like the mice did in Mouse Shapes. Show the *Mouse Shapes* page*…Let's make the cat!*

Be sure to point out the different shapes that go together to make a whole picture.

This picture has squares and triangles. When I put them together, they look like a castle. I wonder what other things I could make using just squares and triangles?

Children continue to roll shapes and create shape pictures. As the activity continues, children may decide to select their own shapes and stop using the shape die. Helping children move beyond simple matching and filling in shapes to more open-ended shape pictures that foster rich language and higher level thinking skills as children combine materials in unique ways.

Strategies to Provoke Math Thinking:

- Open-Ended and Close-Ended Tasks: This activity is a good combination of an open- and closed-ended activity and the value of each kind of expectation. Children use the 6 sided die that limits the choices of the shapes they use, but once they have chosen a shape, then can create any type of picture they wish. They are able to use a model or not, to interpret *Mouse Shapes* in their own way, and to make unique combinations of shapes as they select size, color and orient the shapes on the paper. Closed-ended expectations, as in having children fill in shape pictures to match the outline, has adds the value of visual discrimination, matching, and the element of a game. It also provides good examples of parts-wholes concepts.
- Be Cautious about Using Print-Outs: It is fun to re-create some of the mouse shapes, and other designs, but ensure that children are not judging their work as "right" or "wrong" as they use these, or other templates. Use templates as guides, stating, *This is one idea about how the mice created pictures. What are your ideas?*
- Parts-Wholes: This activity demonstrates ONE type of parts-wholes understanding: *Wholes are made up of unique parts*. See *Where's the Math?* for this Unit for descriptions of the 3 major types of part-whole understandings and examples of activities to support each type.

Adaptations for Additional Challenge:

- Turn this activity into a game, with 2 or more children creating the same shape picture, using the shape die to complete the pictures in as mildly competitive way.

- Remove all Shape Template Pictures. Add a number die to the materials. Children roll a shape, and then a number, and begin to create pictures.
- Pair *Mouse Shapes* with *Mouse Colors* books and ask children to compare the differences and similarities between the 2 books as they use both books as source for their pictures.

Documentation:
This activity is designed to free the teacher to make notes and observations about children's knowledge of shape names, their use of orientation words, color identification, and attribute recognition and description.

Provocation:
SWPL this week uses the large floor geometric shapes for games and people math. Use these large shapes (or create additional large shapes) and make giant shape pictures in the hallways or other large spaces. Children can stand or sit inside the shapes. For example, make a large shape train together, and children can "ride" in the different shapes.