

Unit 3  Week 5	Small Groups: Puzzles, Numbers, and Groups Low to Medium support	Math SG2	Standards: MELDS.M.CCC.PS.1 MELDS..M.CCC.PS.4 MELDS.M.OAT.PS.2
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<p>Guiding Math Ideas:</p> <ul style="list-style-type: none"> ● Representing number relationships with toys manipulatives and puzzles: Assigning Number names to Groups ● Exploring numerals <p>Math Concepts from Unit Learning Progressions:</p> <ul style="list-style-type: none"> ● Rote counting strategies: Numbers have an order- Correcting errors ● Matching numerals with their names ● Counting groups of objects and assigns a number name

<p>Materials:</p> <ul style="list-style-type: none"> ● Number/photo floor puzzle (from Math Materials) ● 1 “ cube blocks in container ● Basket or box 	<p>Math Vocabulary:</p>
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Preparation:

Place floor puzzle in the Manipulative/Puzzle Center for a week or so before facilitating this small group so children can become familiar with this material. For the small group, mix all the puzzle pieces up in a box or basket. Do not use the picture on the box as a guide for children. Rather, use it to “check their work” afterwards. Put 1 “cubes on floor along with the puzzle pieces.

This small group will vary from low to medium support, based on the groups puzzle and number skills.

Procedure:

You may have played with our big floor number puzzle. I have all the pieces mixed up here in this box. We are going to work this puzzle together today. Each one of us will draw a piece and try to guess what number it is. Then we will begin working the puzzle. When you draw your number, you can name it, and then draw little blocks out of the bucket and count to match the number. There are more pieces than people, so everyone will have a chance to draw 2 different puzzle pieces. This puzzle has a LOT of big numbers. We will try to put them in order.

The small group continues with children drawing puzzle pieces, naming the number, counting small blocks, and placing the group of blocks on top of the number piece. Read the number, the number name and the word that describes the picture: 1- One fish, count 1 block, etc. End the small group by counting 1-20 together.

To scaffold, adjust the number of puzzle pieces. Use the numbers 1-10, for example for the first round, and then numbers 11-20 for a second turn for each child.

Math concepts and skills in this activity:

- Rote counting up to 20, with self-correction.
- Recognition of number symbols and words.
- Picture representation of groups.
- Forming groups of manipulatives and associating them with a number symbol.
- Practicing 1:1 correspondence.
- Children checking their own work, through trial and error and referring to the puzzle box picture.

Reinforce these concepts through words and actions, encouraging children to work together, modeling acceptance of errors and ways to correct them.

Strategies to Provoke Math Thinking:

- Puzzles are in the category of “self-correcting” math materials. There is only one right way to put the pieces together, and in the case of number puzzles, to reinforce the number word list. During Centers, observe children’s puzzle-solving strategies. Are they looking for the next number? For the shape of a piece? Or are they discriminating based on color or items in the pictures? Offer self-correcting materials on a regular basis to encourage children to work independently.
- Rote counting and correcting errors: The floor puzzle includes numbers 1-20. Although counting up to and beyond 20 is an end-of-preschool standard, there will likely be several children who are already counting to 20, sometimes accurately and sometimes with consistent or repeated errors. The puzzle provides a visual aid for children as they build their rote counting skills and transition to rational counting.
- Representing number in multiple ways: Adding the concrete objects to the floor puzzle shows children there are multiple ways to represent number: symbol [numeral], word, pictures, and objects that can be manipulated to form and re-form groups.
- Part-part whole: Puzzles are one type of part-part-whole relationship; individual parts make up a whole. The same type of relationship is demonstrated in toys that have unique parts (such as a toy that is assembled, or identifying the parts of a car, such as wheels, doors, etc.) Part-part-whole relationships are important for future understanding of composing and decomposing numbers as well as fractions as children move into kindergarten and primary grades.

Documentation:

This small group allows for focus not only on children’s puzzle solving strategies, but on their understanding of multiple representations of number. Sharing the pieces gives children who are just beginning to explore puzzles the chance to try out their visual and physical discrimination skills and encourages mentoring from more advanced puzzle-solvers. Plan follow up puzzle-working sessions during future small groups or Center time to observe growing skills and provide additional challenge.

Provocation:

Working floor puzzles without a picture guide suggests other ways of presenting puzzles. Consider taking away the outer “frames” of puzzles and having children work them on the table or floor to provide additional challenge.