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| <p>Unit 4</p>  <p>Week 3</p> | <p><b>Small Groups: Swan Harbor Math Games</b><br/>Medium Support</p> | <p>Math<br/>SG2</p> | <p><b>Standards:</b><br/>MELDS.M.MP.PS.5<br/>MELDS.M.MP.PS.6<br/>MELDS.M.CCC.PS.5<br/>MELDS.M.CCC.PS.8<br/>MELDS.M.OAT.PS.2</p> |
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**Guiding Math Ideas:**

- Math Enthusiasm- Playing math games Indoors and outdoors
- Representation and Problem Solving: Making math visible through manipulatives, symbols, & tools
- Rote and Rational Counting- Growing understanding of cardinality

**Math Concepts from Unit Learning Progressions:**

- Playing games – engaging with math concepts and skills
- Math ideas relate to games (comparisons, quantity, subitizing)
- Showing understanding that *How Many?* means that the last number counted represents the entire group

**Materials:**

- *Swan Harbor* by Rankin
- small manipulatives, such as counters, buttons, or 1” blocks
- Short and Long Path Games resources
- dice (choose die or dice, 3 spot or 6 spot, based on level of difficulty desired)
- legal size paper

**Math Vocabulary:**

- environment- the land, weather and nature in which plants and animals and people live.

**Preparation:**

Refer to Short Path and Long Path game templates and samples. These samples reflect the animals or plants described in *Swan Harbor*. Blank templates are available to create additional games. Use legal size paper and create paths with varied length and types of squares, and insert images for the “goal” of the game (e.g., The Car I Ride to School, with a child at one end, car counters, and a school house at the other end).

Set out game cards dice and markers for 4 children to play at a time.

**Procedure:**

Introduce the Short Path or Long Path games. Demonstrate rolling the die and moving the marker as needed. Be ready to adjust the difficulty level of the game depending on the skill level of the children.

For example, children who are still mastering 1:1 correspondence may be more successful with Short Path and 3 dot die. Children who can subitize and or count on may enjoy Long Path games with 2 dice.

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

- Short Path Games are designed for an individual child to move her/his marker along a pathway to the goal and emphasize the skills of 1:1 correspondence, subitizing, cardinality and number recognition. They are less competitive than Long Path Games.
- Long Path Games can be used in the same way as Short Path Games, or played in the more traditional game setting, with 2 children with different colored markers moving down the long path to the goal. Skills in Long Path Games includes comparing one child's numbers to another, judging more and less, and calculating how many more squares it will take to reach the goal.
- Match the child's learning goals with the type and difficulty of math game in order to find the child's zone of proximal development, and foster her/his next level of counting skills.

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

- Children will have very different skills at game-playing. The source of some arguments about what is fair, the rules, etc. actually stem from children's different levels of understandings about counting concepts. Those children who have mastered 1:1 correspondence, cardinality, number order, and stability of sets may get frustrated when they play with children who, for example, do not synchronize their verbal counting with pointing at objects. Try to pair children with similar skills for some games, in order to reinforce their concepts, and to help them focus on the game and reduce conflicts.

#### ***Documentation:***

Short and Long Path Games are excellent tools to observe counting skills, as well as beginning Operations and Algebraic Thinking. Use the Rote and Rational Counting Guides from Units 1 and 2 to take notes on children's skills and to plan for next steps in counting and operations.

#### ***Provocation:***

Pathway games are not just indoor table games. Move these skills outdoors, using the squares in a sidewalk or drawing squares with chalk. Use the large outdoor die and set a goal for the game, such as a piece of playground equipment, tree, etc. The children become the "markers" as they roll and move along the pathway.