

Mathematics:

Exploring Examples of the Mathematics Foundations

Strands:	<i>Number Sense</i>	<i>Algebra and Functions</i>	<i>Measurement</i>	<i>Geometry</i>	<i>Mathematical Reasoning</i>
GETTING READY					
Instructional Component(s): Information Delivery; In-Class Activity; Out-of-Class Activity					
Strands: This activity can be used to develop familiarity with and deepen understanding of all math strands or of individual strands.					
Focus: Students observe and record examples of young children demonstrating their development of skills and concepts found in the math foundations.					
AFTER PARTICIPATING IN THIS ACTIVITY					
Students will demonstrate knowledge and skills that are consistent with an increased understanding and application of the concepts addressed in this activity.					
Students will demonstrate an understanding of:					
<ul style="list-style-type: none"> • The foundations in mathematics, including strands, substrands, foundations, and examples of foundations (introductory understanding) (<i>Standards 1, 5, & 6</i>)* • Preschool children’s skills in mathematics as demonstrated in an early childhood setting (<i>Standards 1 & 5</i>)* • Preschool children’s developmental progression of mathematics understanding and skills (<i>Standards 1 & 5</i>)* 					
Students will be able to:					
<ul style="list-style-type: none"> • Identify and describe examples of preschool children demonstrating number sense, classification and patterning, measurement, geometry, and mathematical reasoning in an early childhood setting (<i>Standards 1 & 5</i>)* • Begin to differentiate between the skills of children who are “around 48 months” and those who are “around 60 months of age” (<i>Standards 1 & 5</i>)* 					
*See Appendix A					

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Before you start

Become familiar with the examples in the foundations and have some examples of your own ready to start the conversation. Consider using video examples, if available.

Be aware that your approach to this activity can strengthen students' understanding that the examples in the publication are not the only ways in which children will demonstrate these skills and concepts.

Getting it started



Slide 2

Spend some time examining the examples provided for each of the math foundations. Help students understand that the examples that are provided are representative examples and are not exhaustive. It is also important to help students understand that the examples are not criteria for the foundations.

The purpose of this exercise is not to assess children's development but to explore the foundations and see where and how children engage with the skills and concepts. We expect to see children engaging with these concepts and skills in a variety of ways and with varied materials. As you review the examples in the math foundations, ask students for examples that they have seen in young children.

As an observation activity, ask students to build ongoing example banks for the math foundations. Ask students to observe children in a preschool classroom. Provide students with a list of the math strands, substrands, and foundations. Ask them to look for examples of children demonstrating the use of these foundations in their play and/or conversation or other engagement with the concepts of the foundations. Be sure to remind them that they are looking for specific statements or actions by the children.

This could be done with on-site observations of 30 minutes in each of two areas of an early childhood setting. For example, one student could choose art and water play and do an observation in each area for 30 minutes. You would want to make sure that you have a variety of areas covered. You also might assign each student to a strand or one strand per area. The strand of *Mathematical Reasoning* might be addressed separately or in conjunction with any of the other strands. It could actually be helpful to have more than one student doing each of the strands.

Keeping it going

Remind the students that, when they look for examples in classrooms in which they are working or with children they know, they are not looking for skill levels but just for examples of the foundations.

They might be reluctant to judge whether what they see is appropriate for “at around 48 months” or “at around 60 months of age.” Suggest that they write down what they see, bring it back to class, and be ready to talk about it.

Ask students to bring their lists of examples to class. Each student can write the examples out on strips of paper or in a list on chart paper for the class to see. Alternatively, the students could submit their examples online prior to class, and these could be printed out and distributed to all the students. Organize the examples in such a way that they are displayed in relation to the strand they exemplify.

Putting it together

Slide 3-4

Give students time to walk around and read each other’s examples.

Ask questions such as these examples:

- Is there anything you particularly noticed about all the examples?
- Were there some areas or activities where it was difficult to see children engaging with math?
- Were there some where it was easy?
- Were skills and behaviors in some strands easier to see than others? Which ones? Why?
- What does this tell you about child development?
- What are the implications of this for including math in the ECE curriculum?

Since the focus here is not curriculum, keep responses general, such as the need to provide materials, the need to be intentional about planning and also looking for teachable moments.

Be sure that the examples are collected and made available as a resource to students.