

Mathematics:

Exploring the Vocabulary of Early Mathematics

Strands:	<i>Number Sense</i>	<i>Algebra and Functions</i>	<i>Measurement</i>	<i>Geometry</i>	<i>Mathematical Reasoning</i>
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GETTING READY

Instructional Component(s): 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 explore the vocabulary of early mathematics in the preschool setting and at home, and its connection to early language learning.

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:

- How math is used in daily life (*Standards 4 & 5*)*
- Common vocabulary associated with mathematics (*Standard 5*)*
- How children experience math throughout everyday interactions and routines, as well as formal instruction (*Standards 1 & 5*)*
- The foundations in mathematics, including strands, substrands, foundations, and examples of foundations (introductory understanding) (*Standards 1, 5, & 6*)*
- How different contexts affect children's encounters with math vocabulary and concepts (*applies to "Taking it further"*) (*Standards 1 & 5*)*

Students will be able to:

- Identify common vocabulary associated with mathematics (*Standard 5*)*
- Consider the usage of math vocabulary throughout typical daily activities and routines in an early childhood setting (*Standard 5*)*
- Identify and describe examples of how adults and children use number sense (classification and patterning, measurement, geometry, and mathematical reasoning) in daily life (*Standards 1 & 5*)*
- Communicate with family members about how they use math in their daily lives (*applies to "Taking it further"*) (*Standard 2*)

*See Appendix A

Mathematics:

Exploring the Vocabulary of Early Mathematics

Before you start

It may be helpful to have this activity follow “Learning Mathematics in the Context of Our Cultural Communities”. While that activity engages students in thinking about their own use of mathematics, this activity explores the use of mathematics and math vocabulary by children and their families.

Getting it started

Ask students to develop lists of vocabulary words related to the foundations in each strand. One way to do this is to organize students into groups of three or four. Assign each group to a strand in the foundations. Ask them to write a list as fast as possible of all the words they can think of that capture the math concepts of that strand.

Some words that students might suggest are faster, slower, longer, shorter, bigger, smaller, big, medium, small, smallest, largest, tall, taller, tallest, heavy, heaviest, light, lighter, lightest, wide, widest, long, longer, longest, minute, second, hour, day, week, circle, triangle, square, rectangle, parallelogram, oval, 3-D, sphere, cube, pyramid, and cylinder.

Keeping it going

Post the lists and rotate the strands at least once to new groups. Ask them to add whatever they can to the list that is posted.

Putting it together



Slides 2-3

Then ask the following questions:

- How do the words for each strand relate to the activities, materials, and routines that children typically do in a preschool classroom?

If you have done the activity entitled “Understanding How Children Demonstrate the Mathematics Foundations in Early Care and Education Settings,” you can refer back to those particular preschool activities to help students respond to this question.

- What does this tell us about the importance of language development to early math development?
- How might this affect children who are English learners?
- What does this suggest about our role as teachers and/or important adults in the lives of young children?

Taking it out of class

Slides 4-6

Have students interview members of their own family or families of young children with whom they work.

Ask families about some ways in which they use the following math concepts in their everyday life:

- Measurement (cooking, buying food)
- Number Sense/Counting (Where do they add or subtract things? Where do they use one-to-one correspondence?)
- Algebra/Classification and Patterning (matching, sorting, grouping)
- Geometry (shapes, positions in space)

Some prompts might be these questions:

- What size and weight words are related to being at the grocery store?
- How do we use comparison words at the grocery store?
- What size, shape, or sorting and/or pattern words relate to doing laundry?
- What measurement words relate to cooking?
- Where and what do we count during the day?

Ask students to consider how the vocabulary words that preschool children are learning relate to the examples provided from the families.

Taking it further

Also see the activity titled “Linking Children’s Home Experiences with the Mathematics Foundations” as a way to extend or deepen the understanding of how home, cultural, and language experiences influence the development of mathematics vocabulary.