

English-Language Development: Relating the English-Language Development Foundations to the Language of Mathematics in Early Care and Education

Strands:	<i>Listening</i>	<i>Speaking</i>	<i>Reading</i>	<i>Writing</i>
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GETTING READY

Instructional Component(s): Information Delivery; In-Class Activity; Out-of-Class Activity; Assessment

Strands: This activity can be used to deepen understanding of all strands.

Focus: Students consider how language development for a child who is an English learner would influence development in the mathematics domain.

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 language development and learning English for children whose home language is not English can influence how children demonstrate the mathematics foundations (*Standards 1 & 5*)*
- The developmental progression of learning a second language (*Standards 1 & 5*)*
- The foundations in mathematics, including strands, substrands, foundations, and examples of foundations (*Standards 1, 5, & 6*)*
- Strategies used to support children who are English learners in developing skills and concepts in math (*Standards 1, 4, & 5*)*

Students will be able to:

- Recognize the stages of learning a second language, related to developing skills and concepts in math (*Standard 1*)*
- Support children who are English learners develop skills and concepts in math (*Standards 1, 4, & 5*)*
- Identify math words that would be helpful to use and for children to see in different languages throughout the preschool environment (*Standards 4 & 5*)*
- Observe and document teaching strategies to support children at each stage of language development to support learning of math concepts (*Standards 1 & 5*)*

* See Appendix A

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Before you start

This is an activity that asks students to develop ideas for supporting and understanding young English learners in their math learning. This steps into the realm of curriculum development, but it is included in this instructional guide because it touches the crucial issue of math development for English learners.

Getting it started



Slide 2

Review the levels in the English-language development domain. Be sure that students understand the levels as described on pages 107-108 of the *California Preschool Learning Foundations, Volume 1* (PLF, V1).

Review or introduce the strands of the mathematics domain of the foundations.

Emphasize that much of preschool mathematics is related to learning words and associating those words with objects or processes. One way to highlight this is to have students brainstorm as many words as they can think of that are related to each mathematics strand.

Point out that any strategies to support children who are English learners as they develop language and literacy skills in English may also apply to developing skills and concepts in mathematics as well.

Putting it together



Slides 3-6

Introduce students to the table at the end of this activity. Ask students to think about the following question:

- How can adults support children in each of the levels of the English-language development domain to learn the vocabulary of mathematics in English?

In pairs or small groups, students can be asked to work through the entire table or they can be assigned to specific stages or strands. Ask them to give examples of how each level could be supported for each strand. Examples do not need to be different for each strand, but, overall, encourage as many different strategies as possible.

If students need some support in initiating this, you might mention the following examples of strategies to support language development that would be appropriate to the language of mathematics at different levels of learning English:

- Post written words in the environment in the home language of the children paired with English.
- Narrate what an adult or another child is doing.
- Use songs or finger-plays in home language and English that relate to math foundations.

Taking it further

After students have worked on the handout, ask them to share their ideas with the group.

Consider collecting and combining these to give to students as a resource for their work.

Assessment

Following class review of the initial information, ask students to work on this as an observation activity.

Ask students to do an observation in a preschool classroom and, using the attached handout, find as many examples as they can of ways in which children are supported in learning the language of mathematics as they learn English. Remind students to give attention to environmental arrangements and interactions between children and adults as well as individual, small group, or large group activities.

	What are some intentional teaching strategies that can be used for children at each of these stages to support learning the language of math?				
	Number Sense	Algebra and Functions (Classification and Patterning)	Geometry	Measurement	Mathematical Reasoning
<p><u>Beginning Level</u></p> <p>Children are listening and actively processing the features of the English language.</p>					
<p><u>Middle Level</u></p> <p>Children will repeat phrases that are functionally effective, increase vocabulary, and begin to combine words.</p>					
<p><u>Later Level</u></p> <p>Children will have stronger comprehension, use English to learn, use appropriate English grammar, and engage in most classroom activities in English.</p>					