

Professional Learning

The Process of English Language Learning and What to Expect

Adapted from *Teaching Mathematics to English Language Learners*, coauthored by Dr. Gladis Kersaint

Below are the five principles for creating effective second language acquisition-rich learning environments based on evidence-based practice. (Erben, Castaneda, and Ban, 2008)

Principle 1

Give ELLs many opportunities to read, to write, to listen to, and to discuss oral and written English and mathematics texts expressed in a variety of ways.

Classroom practices that have been found to improve academic literacy development include:

- modeling reading comprehension through think-alouds
- giving explicit strategy instruction in context
- providing instruction to help students read and write mathematics
- providing mathematics assignments that require students to read and write
- providing more opportunities for ELLs to use the language of mathematics as they process new information

Principle 2

Draw attention to patterns of English and mathematics language structure.

- ELLs need explicit exposure and instruction related to the language structures of English (both grammar and vocabulary use) and mathematics.

Principle 3

Give ELLs classroom time to use their English productively while learning mathematics.

- When ELLs are engaged in talk, they make communication modifications that help language become more comprehensible.

Principle 4

Give ELLs opportunities to notice their errors and to correct their English while learning mathematics.

- Offer explicit correction through revoicing.
- Request clarification.
- Provide metalinguistic clues.
- Provide repetitions.

Principle 5

Construct activities that maximize opportunities for ELLs to interact with others in English.

- Student engagement during instruction is the key to academic success; vary the types of instructional tasks.
- Provide students with linguistic stems, frames, and questions that provide opportunities for rich and rigorous discussions with English-speaking peers.

ELL English Language Learners: Differentiated Instruction

For ELLs, use the Differentiated Instruction charts in the Teacher's Guide to plan and prepare for specific activities in every session. Differentiation is appropriately aligned to levels of English language proficiency and the language domains of listening, speaking, reading, and writing.



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English Language Learners: Differentiated Instruction

Prepare for Session 1 Use with *Try It*.

Levels 1–3

Listening/Speaking Read the *Try It* problem. As students draw representations, ask them to identify the whole by pointing to their drawings. Provide a sentence frame: *These (circles, squares) represent the whole.* Ask students to explain what *whole* means. Say: *Whole means complete.* Ask students to identify the number of cards Lynn and Paco get and the number of cards Todd gets. Help students write a fraction for the part of the pack of cards that Todd gets: $\frac{5}{12}$. Then have them identify the numerator and denominator and explain what they mean: *The 5 means _____. The 12 means _____.*

Levels 2–4

Listening/Speaking Read the *Try It* problem and have students form pairs. Write the following sentence frames:

- *First, I identified the whole by _____.*
- *Next, I found out how many total cards Lynn and Paco had by _____.*
- *Then I decided the fraction for the part of the pack of cards that Todd got is _____ because _____.*
- *My answer is reasonable because _____.*

Read the sentences to the students and then have them take turns reading the sentences with their partners. Ask students to explain to their partners how they determined the fraction of the pack of cards that Todd got. Call on students to share their explanations.

Levels 3–5

Writing/Reading Read the *Try It* problem and have students form pairs. Have students solve the problem and then describe in writing the strategies they used to determine the fraction of the pack of cards that Todd got. Provide the following vocabulary for students to use in their responses: *denominator, numerator, whole, fraction, and reasonable.* Ask students to read what they have written to their partners.

UNIT 4 Connect Language Development to Mathematics

Language Expectations for Differentiation

The chart below provides teachers with examples of what English learners can do based on their English language proficiency levels in connection with one of the Learning Targets addressed in this Unit. As you plan for the lessons in this Unit, use the examples of language expectations to help you differentiate instruction and meet the needs of your English Language Learners.

ELL Language Expectations

Learning Target Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.

LANGUAGE DOMAINS	Beginning Level 1	Intermediate Level 2 Level 3		Advanced/Advanced High Level 4 Level 5	
	LISTENING	Give a thumbs-up if you solved a problem involving fractions in the same way as a classmate describes his way of solving a problem.	Construct the model a classmate used to solve a problem involving fractions as he explains his thinking, using numbers and words.	Follow how a classmate solved a problem involving fractions by drawing the model used as the classmate describes it.	Compare how two students' methods for solving a problem involving fractions are alike and different, using pictures, models, and numbers.
SPEAKING	State whether the pictorial representation is a fraction addition or subtraction problem with a partner.	Tell which pictorial representation was most helpful in solving a fraction addition or subtraction problem with a partner.	Describe how the pictorial representation depicts how to solve a fraction addition or subtraction problem with a partner.	Compare two pictorial representations showing how to solve the same fraction addition or subtraction problem with a partner.	Explain how addition and subtraction with fractions is related to addition and subtraction with whole numbers, using sentence frames.
READING	Match a unit fraction with its visual representation using a table.	Match a fraction to visual representations of the decomposed fraction using a table.	Match a fraction addition or subtraction problem to an area model and number line model with a partner.	Connect visual fraction models to equations representing a decomposed fraction with a partner.	Generalize how to decompose a fraction in more than one way using visual models, numbers, and words.
WRITING	Decompose a fraction into a sum of unit fractions using a number line, model, or concrete objects.	Provide the equation associated with a fraction addition or subtraction problem while using a visual model.	Connect visual models to fraction addition and subtraction equations while working in a small group.	Explain how to find the sum and difference while solving problems involving fractions with a partner.	Summarize the important steps in solving problems involving fractions while working in a small group.