

## Dear Family,

This week your student is exploring how rewriting an expression in an equivalent form can help them look at a situation in a different way.

Your student has already learned what it means for two expressions to be equivalent and how to represent a real-world situation with an expression.

You can often represent a situation with multiple equivalent expressions. The expression that you write depends on how you interpret the situation.

Your student will be modeling problems like the one below.

A swimming pool is being designed so that different sections can be used for different activities. The diagram of the pool gives the dimensions in meters.

You can model the total area of the pool with the expression 25(8) + 25x + 7(8) + 7x. You can also model the area of the pool with the expression (25 + 7)(8 + x).

What information does each expression provide?



> ONE WAY to think about the total area is as the sum of the areas of the sections.

25(8) + 25x + 7(8) + 7x

This expression shows how the areas of the different sections make up the area of the whole pool. It shows that if the value of *x* changes, only the *Lap Swim* area and *Kids* area change. The *Swim Lessons* and *Babies/Toddlers* areas do not change.

> ANOTHER WAY to think about the total area of the pool is as a large rectangle.

(25 + 7)(8 + x)

This expression shows that the area of the whole pool is the product of the length and the width.

It shows that when *x* changes, both the width and the total area change.



Use the next page to start a conversation about equivalent expressions.

## **Activity** Thinking About Equivalent Expressions

## Do this activity together to investigate reasons for rewriting expressions.

Each situation below is represented with a pair of equivalent expressions.

Which expression do you like best for each situation? What question could that expression help you answer?



## SITUATION 1



**330** LESSON 16 Understand Reasons for Rewriting Expressions

What are some other ways to think about these situations?