

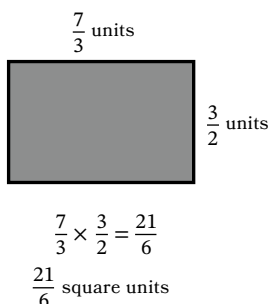
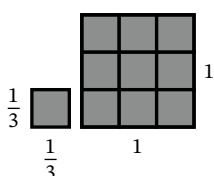
FAMILY MATH

Areas of Rectangular Figures with Fraction Side Lengths

Dear Family,

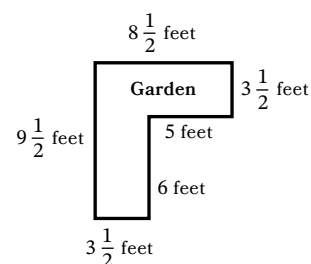
Your student is finding areas of rectangles that have fraction side lengths. Through an exploration with unit squares, students discover they can use the same method they used in earlier grades when multiplying whole-number side lengths. Your student is also finding the area of composite figures with fraction side lengths, which builds on their skills with finding area of composite figures with whole-number side lengths. These skills support students in later grades when they find the surface area of solids.

Key Term
composite figure



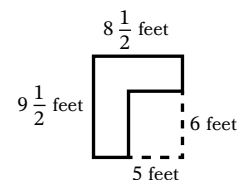
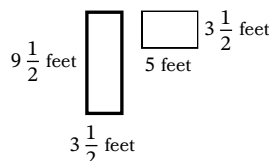
Students explore finding the area of a rectangle by tiling with unit squares. A unit square is a square with an area of 1 unit. Students break up the unit square into parts to see that the smaller part is a fraction of the area.

Students can find the area of a rectangle more efficiently by multiplying the length and width, even when the side lengths are fractions.



Decompose into Rectangles to Add

Compose a Larger Rectangle and Subtract



With composite figures, students decompose the figures, find the areas of the smaller parts, and then add the areas together. Or they can compose a larger rectangle, find the total area of that figure, and then subtract the area of the part they added.

At-Home Activities

Square Masterpiece

Provide your student with a pad of square sticky notes or about 30 same-size square pieces of paper. Explain that each square represents an area of $\frac{1}{8}$ square unit. (Do not use a specific measurement such as inches or centimeters.) Invite your student to arrange the squares into an artistic design that does not include gaps or overlaps. When the design is complete, ask them to calculate the total area of the squares. One method to find the area is to count all the squares and multiply by $\frac{1}{8}$. Another method is to repeatedly add $\frac{1}{8}$ for the squares in each section of the design and then add the totals for each section together. For an additional challenge, ask your student to make a design that uses more than one color of squares and find the area of each color.

Compare Squares

Gather a few items in your home that are square such as napkins, washcloths, drink coasters, or crackers. Choose one of the squares to use as a unit square. The unit square can be larger or smaller than the other objects. Use paper to trace and cut out a few squares of the item you chose as the unit square. Then use those paper squares to estimate how many it will take to cover one of the other square items you found. Check your estimate by tiling the unit squares without gaps or overlaps. You will notice that the unit square does not fit perfectly in most cases. When this occurs, encourage your student to mark one of the paper squares to show what part of it is used to cover the item. Then find the fraction of the paper square that is used. Repeat this activity by using both larger and smaller unit squares.