InsightMath

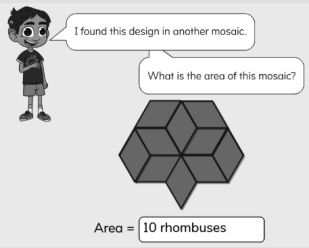
Discovering Area

Family Guide | Grade 3 | Unit 2

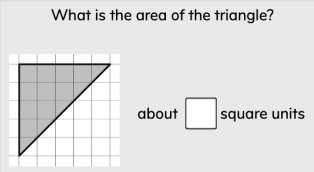
Your student is exploring area is a way to describe and quantify two-dimensional space.

Key Math Ideas

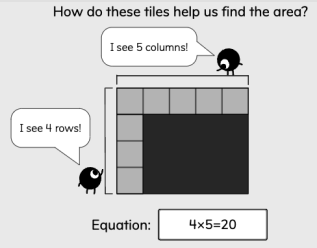
In this unit your student will explore area as a measurable attribute of two-dimensional shapes. After making comparisons about the size of shapes, students explore area by tiling a space without gaps or overlaps. Students then transition to finding area using a grid, exploring using squares as square units to measure. Later in the unit, your student finds the area of rectangles by making connections between the rows and columns in a rectangle and multiplication. By the end of the unit, students find area by multiplying side lengths, discussing how using side lengths is more efficient for finding area than tiling the rows and columns.



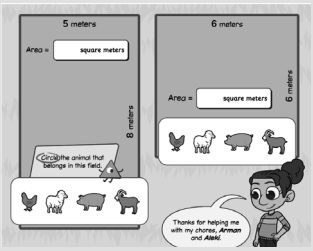
finding area by tiling a space without gaps or overlaps (nonstandard units)



finding area using square units on a grid (standard units)



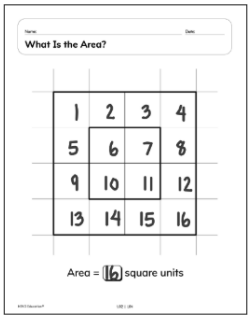
finding area by identifying rows and columns and making connections to multiplication

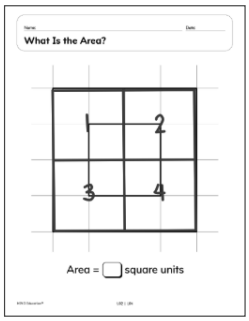


finding area by multiplying side lengths

→ In the first half of the unit, your student will learn to

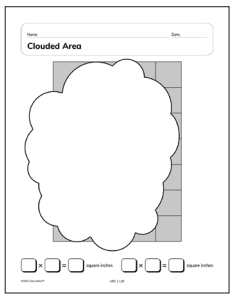
- explain that area is the amount of flat space a shape takes up;
- compare areas of shapes directly (one area on top of another area) and indirectly (by comparing against a third object);
- find areas of shapes, including the units, by tiling units without gaps or overlaps, using a grid, and adding or multiplying measurements from different sections of the shape;
- describe that using smaller units require more units to cover the area of an object, while using larger units requires fewer units, as shown in the examples to the right.





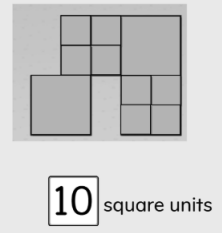
→ In the second half of the unit, your student will learn to

- describe the amount of rows of tiles in the area of a rectangle (e.g., "The rectangle has three rows of five squares") and explain the connection between this and a multiplication equation;
- use multiplication or skip counting to find the area of rectangles;
- construct a rectangle with a given area and explain that there may be more than one rectangle with that given area;
- multiply the side lengths to find the area of a rectangle;
- solve word problems involving areas of rectangles.



Helpful Hint

One aspect of finding area is supporting students to recognize that they need to use the same size units to find the area accurately. In the example to the right, using two different sized unit squares does not give an accurate measurement of the area of the shape. If your student is finding area using unit squares, support them to recognize that using the same size unit square is essential to finding area.



Tips for Supporting Your Student at Home

Questions to Ask Your Student

→ In the first half of the unit:

- How can you compare the sizes 2-D shapes?
- How can you find which shape's area is larger or smaller?
- What is a unit square? Why is it important?
- How can you find the area of the shape?

→ In the second half of the unit:

- How can you use multiplication to find the area of the rectangle?
- What equation can you write to represent the area of the rectangle?
- How can you use a unit square to find the area of a rectangle or a square?
- Do you prefer to tile with unit squares or use the side lengths to find area? Why?

If...	Try...
your student has difficulty knowing where to start when finding the area of a rectangle . . .	asking what they know about the rectangle. Depending on how the rectangle is presented, ask, "Do you know how many rows or columns the rectangle has?" or "Do you know the side lengths of the rectangle?" Support students to write an equation to represent what they know.

Student Strengths Spotlight

I explain my thinking.	While exploring area, students justify, explain, and communicate their thinking and reflect on their understanding.
I listen to other people's ideas and explain if I agree or disagree.	Listening and respectfully critiquing others' ideas about how to solve problems helps students reflect on and further expand their own understanding.
I use math tools and strategies to help me learn.	Students use tools such as square tiles and rulers to help find area. Considering efficient tools and strategies supports student growth as mathematicians.

Try This Together!

- **Sticky Note Areas!** Have your student use sticky notes to explore with area at home in one of the following ways:
- **Finding Area.** Have your student find the area of flat surfaces around the house, such as the top of a nightstand or a book cover. Students can cover (tile) the surface with sticky notes, ensuring there are no gaps or overlaps.
- **Make Rectangles.** Have them make rectangles with the sticky notes according to the area you give them. For example, ask them to create a rectangle with the area of 16 square units. They could make a rectangle with 4 rows and 4 columns, or with 8 rows and 2 columns.
- **Area Around You!** Ask your student to notice objects around your home that they can find the area of. For example, they could find the area of the front door or the cover of their favorite book by measuring side lengths and multiplying. Help your students to use a ruler to measure to the nearest whole unit (inch, foot, etc.) and then find the approximate area.