

MATH NEWS



Third Grade Newsletter

Winter/Spring

Math Tips for Families

Unit 6 : Area and Perimeter

Overview: In this unit, students apply their knowledge of tiling and arrays to the idea and measurement of area. They use repeated addition/multiplication to look at rectangles in terms of layers (either layers of rows or layers of columns). Students will again use the distributive property to find the area for rectangles with larger numbers (18×7). This is done through diagrams that are not tiled (since the numbers are larger). Tiles show the square nature of area and students will explore this before they discover the formula for area (length $\times$ width).

Students will recognize perimeter by distinguishing between linear and square measures. The linear nature of perimeter is shown very effectively with yarn as opposed to the tiles of area.



Foundation Skills (what came before)

In second grade, students reasoned with shapes and their attributes. They partitioned a rectangle into rows and columns of same-sized squares and counted to find the total number. Students in second grade also added up to four two-digit numbers using strategies based on place value and the properties of operations. They had to explain why addition strategies worked, using place value and the properties of operations.



Words to Know

array: an arrangement of objects, pictures or numbers in columns and rows



area: how many unit squares can cover a shape without gaps or overlaps

composite figure: a figure made up of two or more shapes



figure: another name for shape

length: the distance from end to end- *how long something is.*

perimeter: the distance around a figure

square unit: a two dimensional unit used to measure area of a larger shape. 

unit square: a square with a side length of one unit

tiling: tiles (squares) are used to cover the inside of a shape without gaps or overlaps

width: also the distance from end to end- *how wide something is.*



Using Questions

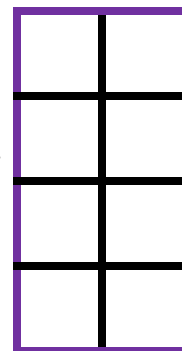
- How is area important (or used) in the everyday world?
- How is perimeter important (or used) in the everyday world?
- How can you find the area of a rectangle?
- How can you find the perimeter of a polygon?

Important to Know

There is a difference between area and perimeter. How are they the same? How are they different?

Area is measured in **square** units or tiles and describes the **inside** measurement of a shape.

Perimeter is measured in **linear** (line) units and describes the distance around the **outside** of a shape.



Area = 8 sq. units

$2 + 2 + 2 + 2$ or
 4×2

Perimeter =
12 units

Key California Content Standards for this Unit

3 MD.7 Relate area to the operations of multiplication and addition.

3.MD.7.a Find the area of a rectangle with whole-number side lengths by tiling it and show that the area is the same as would be found by multiplying the side lengths.

3.MD.7.b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems and represent whole-number products as rectangular areas in mathematical reasoning.

3.MD.7.c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.

3.MD.7.d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

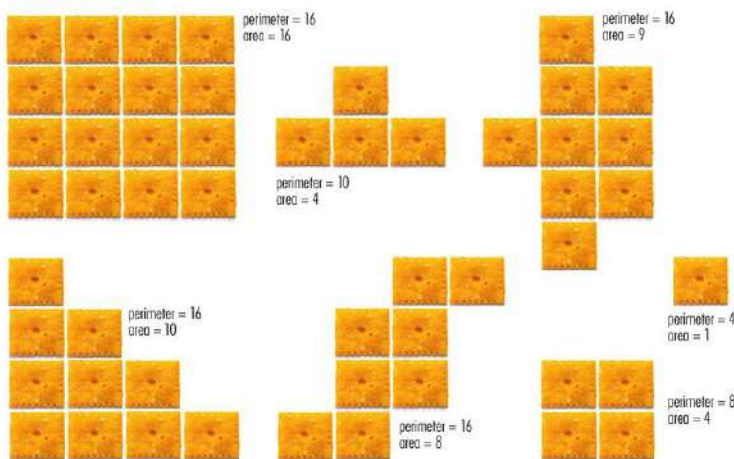


How You Can Help ~ Activities for Home

Use Cheez-Its to create shapes for students to analyze. Have them find the area and perimeter.

Have them explain HOW they found each, and they should come to notice that they did different things to find each measurement.

CHEEZ-IT area & perimeter



Routines & Yearlong Topics

- Telling time to the nearest hour, half hour, quarter hour, and minute
- Finding Friendly Numbers (numbers that have zero in the ones place- we use this to round and estimate)
- Composing and decomposing values
- Counting money to get to multiples

Pennies



1- 2-3-4

Twos



2, 4, 6, 8

Nickels



5-10-15-20

Quarters



25, 50, 75, 100

dimes



10-20-30-40

The concepts in this newsletter have been informed and adapted from these sources:

- Teaching Student Centered Mathematics
- California Mathematics Content Standards
- California Mathematics Framework
- Eureka Math Tips for Parents
- Lafayette Parish School System: "All Hands on Deck with Math" webpage



TUSD ~
Supporting community &
family understanding