

FAMILY MATH

Compose and Decompose Units of Ten

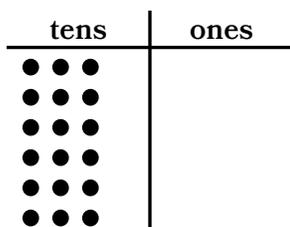
Dear Family,

Your student is learning to multiply and divide multiples of 10 by one-digit numbers. They see that the multiplication and division facts they learned in grade 3 can help them. To multiply, they begin with showing multiplication on a place value chart and renaming multiples of 10 in unit form. When multiples of 10 are in unit form, it is easier to think about familiar facts. Your student can multiply the familiar fact first and then multiply by 10. Grouping the factors in a multiplication expression in different ways does not change the product. Your student applies this strategy to calculating the areas of rectangles when 1 side length is a multiple of 10. To divide, students begin with showing division by using place value disks. They see that unit form and familiar facts can also help them divide multiples of 10. This topic deepens their understanding of the relationship between multiplication and division.

Key Terms

associative property of multiplication

formula

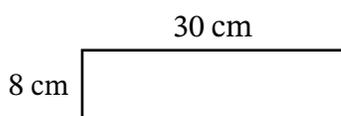


$$6 \times 30 = 6 \times 3 \text{ tens}$$

$$= 18 \text{ tens}$$

$$= 180$$

$6 \times 3 = 18$ is a familiar multiplication fact.



$$A = l \times w$$

$$A = 30 \times 8$$

The area is 240 sq cm.

The formula for the area of a rectangle is $A = l \times w$.

$$6 \times 30 = 6 \times (3 \times 10)$$

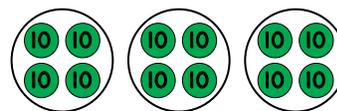
$$= (6 \times 3) \times 10$$

$$= 18 \times 10$$

$$= 180$$

$$6 \times (3 \times 10) = (6 \times 3) \times 10$$

The associative property of multiplication shows how we can use familiar factors to multiply.



$$120 \div 3 = 12 \text{ tens} \div 3$$

$$= 4 \text{ tens}$$

$$= 40$$

$12 \div 3 = 4$ is a familiar division fact.

At-Home Activity

Pennies and Dimes

Use pennies and dimes to explore multiples of 10. Have your student arrange a collection of pennies in equal groups, such as 15 pennies arranged in an array of 3 rows of 5 pennies. Then build the same array as your student did but use dimes instead of pennies. Compare your arrays by using the following questions to guide the conversation. Repeat with different-size collections by taking turns building the arrays of pennies and dimes.

- “How many rows?” (3 rows of pennies) (3 rows of dimes)
- “How many cents are in each row?” (5 cents) (50 cents)
- “How many cents are there in all?” (15 cents) (150 cents)
- “What multiplication equation represents the array with the pennies?” ($3 \times 5 = 15$)
“With the dimes?” ($3 \times 50 = 150$)
- “What division equation represents the array with the pennies?” ($15 \div 3 = 5$)
“With the dimes?” ($150 \div 3 = 50$)