

Eureka Math

4th Grade Module 3 Lesson 4

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Screen A

ReadyGEN™ in Action

3rd Grade
Unit 3, Module A
Lesson 1

“pop-out”

Screen B

Gr3(2) U3MAL1 Sample Lesson.pptx

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ReadyGEN™ in Action

3rd Grade
Unit 3, Module A
Lesson 1

Icons



Read, Draw, Write



Learning Target



Personal White Board



Problem Set



Manipulatives Needed



Fluency



Think Pair Share



Whole Class



Individual



Partner



Small Group



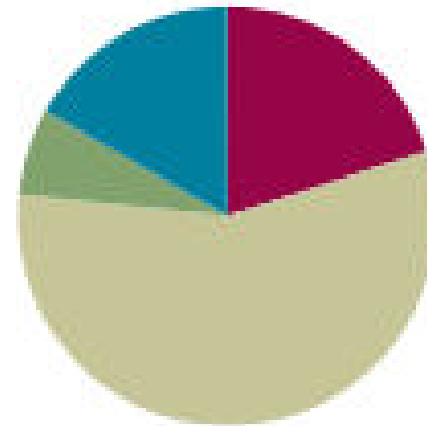
Small Group Time

Lesson 4

Objective: Interpret and represent patterns when multiplying by 10, 100, and 1,000 in arrays and numerically.

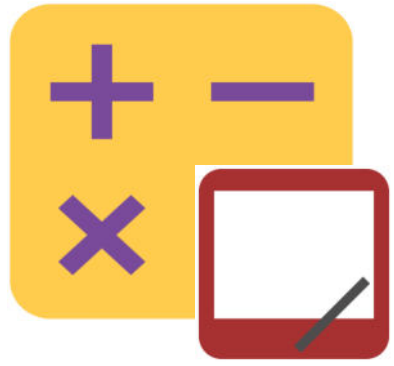
Suggested Lesson Structure

■ Fluency Practice	(12 minutes)
■ Application Problem	(4 minutes)
■ Concept Development	(34 minutes)
■ Student Debrief	(10 minutes)
Total Time	(60 minutes)





**I can interpret and represent patterns
when multiplying by 10, 100, and 1,000
in arrays and numerically.**

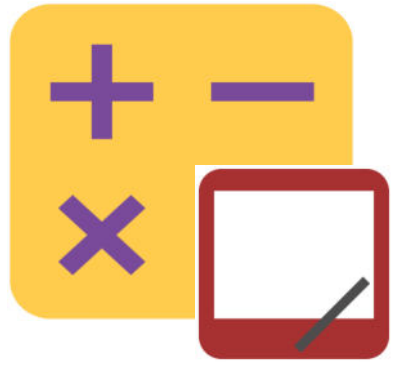


Fluency Practice

Rename the Unit

Materials:

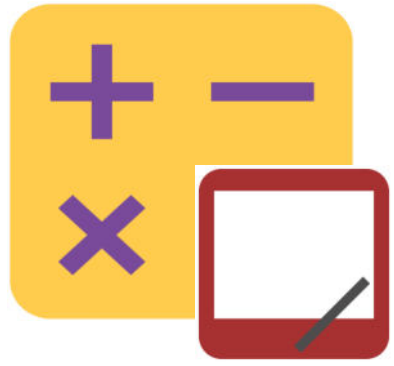
Personal White boards



Fluency Practice

Rename the Unit

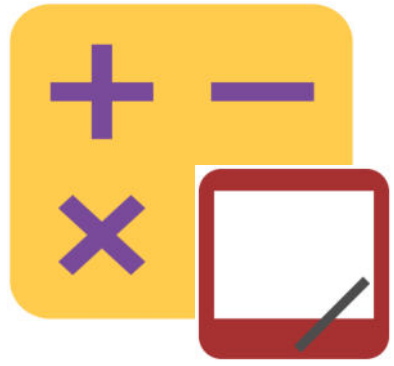
14 tens = _____



Fluency Practice

Rename the Unit

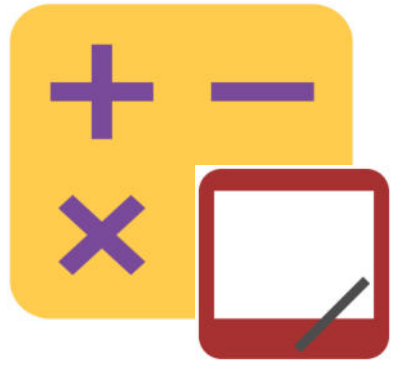
$$14 \text{ tens} = 140$$



Fluency Practice

Rename the Unit

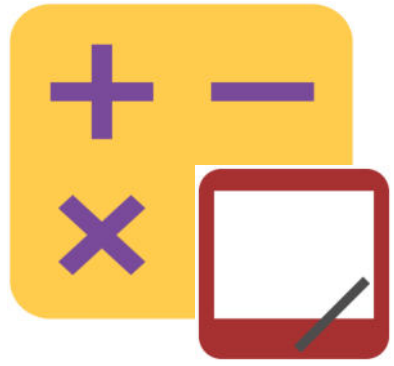
14 hundreds = _____



Fluency Practice

Rename the Unit

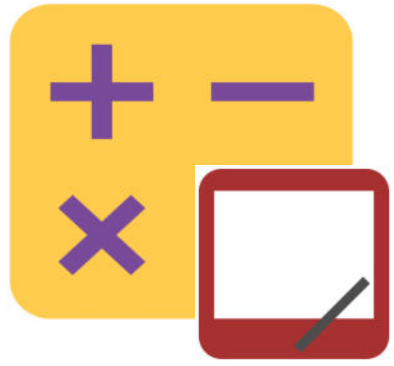
14 hundreds = 1,400



Fluency Practice

Rename the Unit

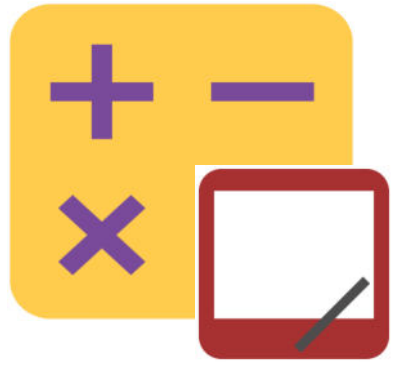
14 thousands = _____



Fluency Practice

Rename the Unit

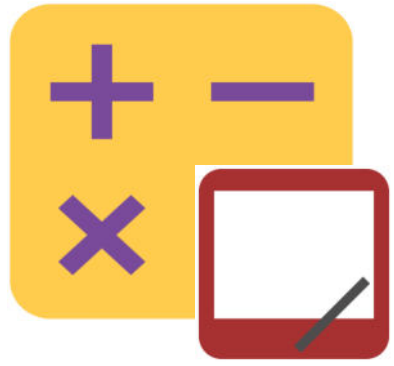
14 thousands = 14,000



Fluency Practice

Rename the Unit

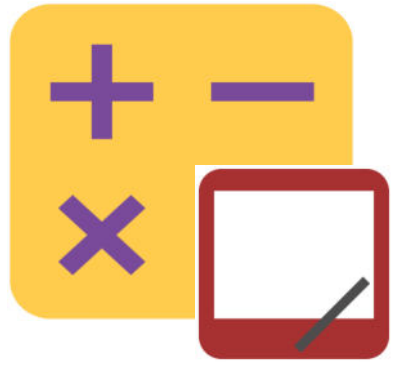
18 tens = _____



Fluency Practice

Rename the Unit

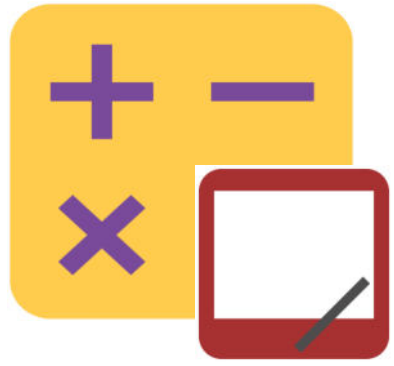
$$18 \text{ tens} = 180$$



Fluency Practice

Rename the Unit

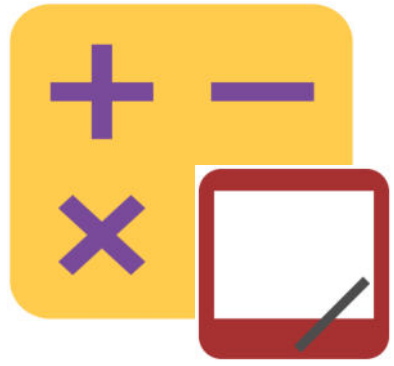
28 tens = _____



Fluency Practice

Rename the Unit

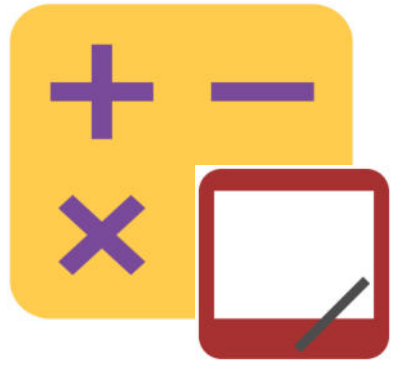
$$28 \text{ tens} = 280$$



Fluency Practice

Rename the Unit

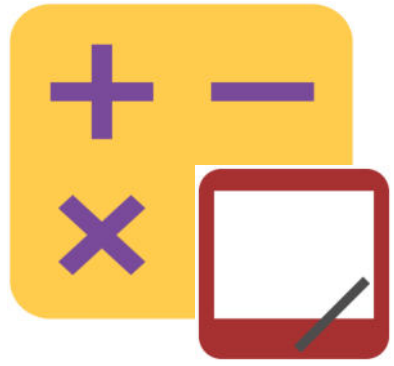
28 hundreds = _____



Fluency Practice

Rename the Unit

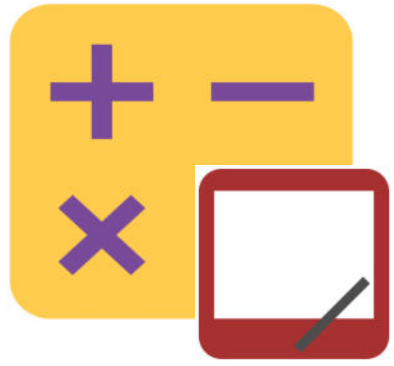
$$28 \text{ hundreds} = 2,800$$



Fluency Practice

Rename the Unit

28 thousands = _____



Fluency Practice

Rename the Unit

28 thousands = 28,000



Fluency Practice

Group Count by Multiples of 10 and 100

Count by threes to 30.

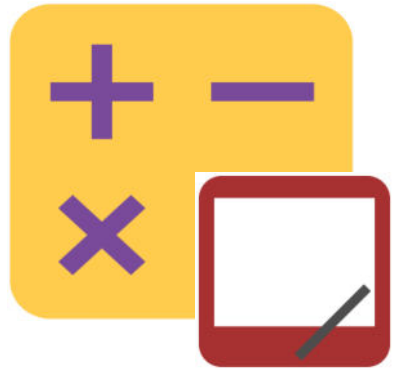


Fluency Practice

Group Count by Multiples of 10 and 100

Now count by 3 *tens*.

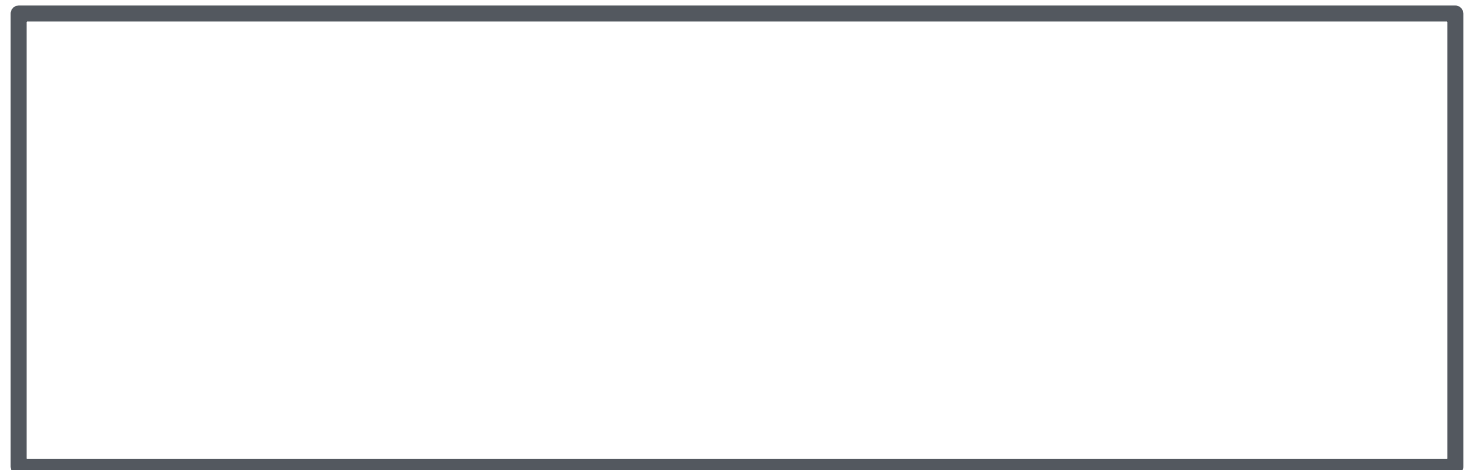
When I raise my hand, stop counting.



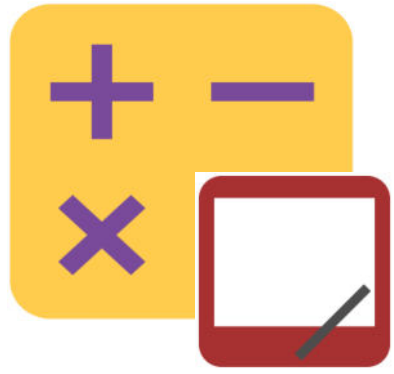
Fluency Practice

Find the Area and Perimeter

On your personal white board, write a multiplication sentence to find the **area.**



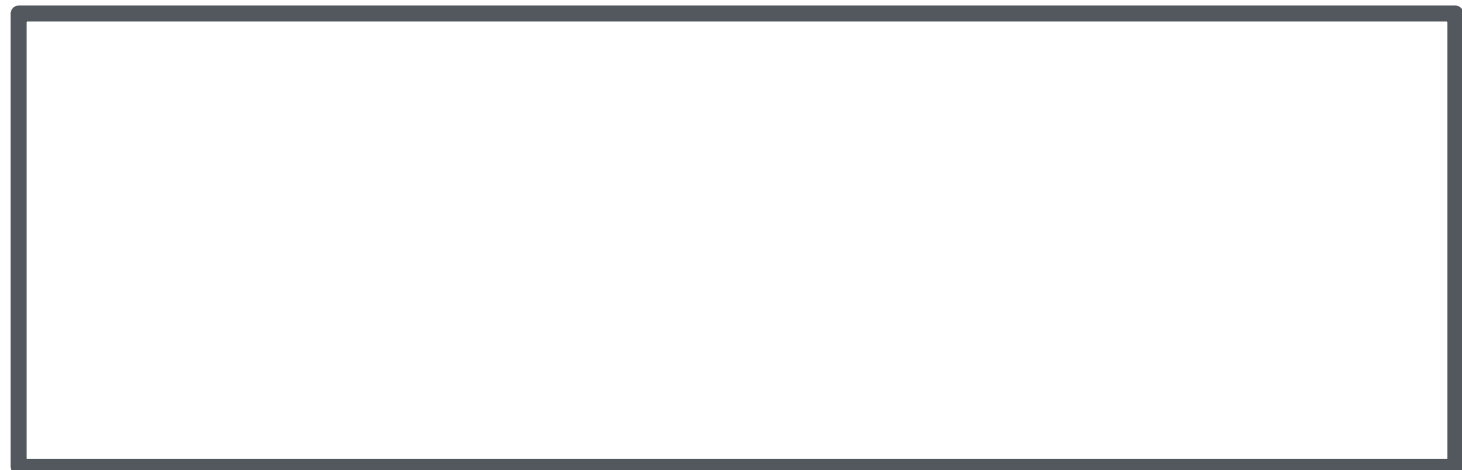
9 cm



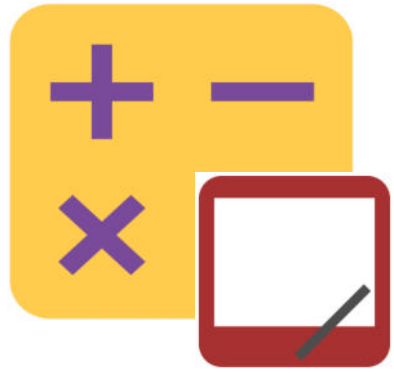
Fluency Practice

Find the Area and Perimeter

Use the **formula** for perimeter to solve.



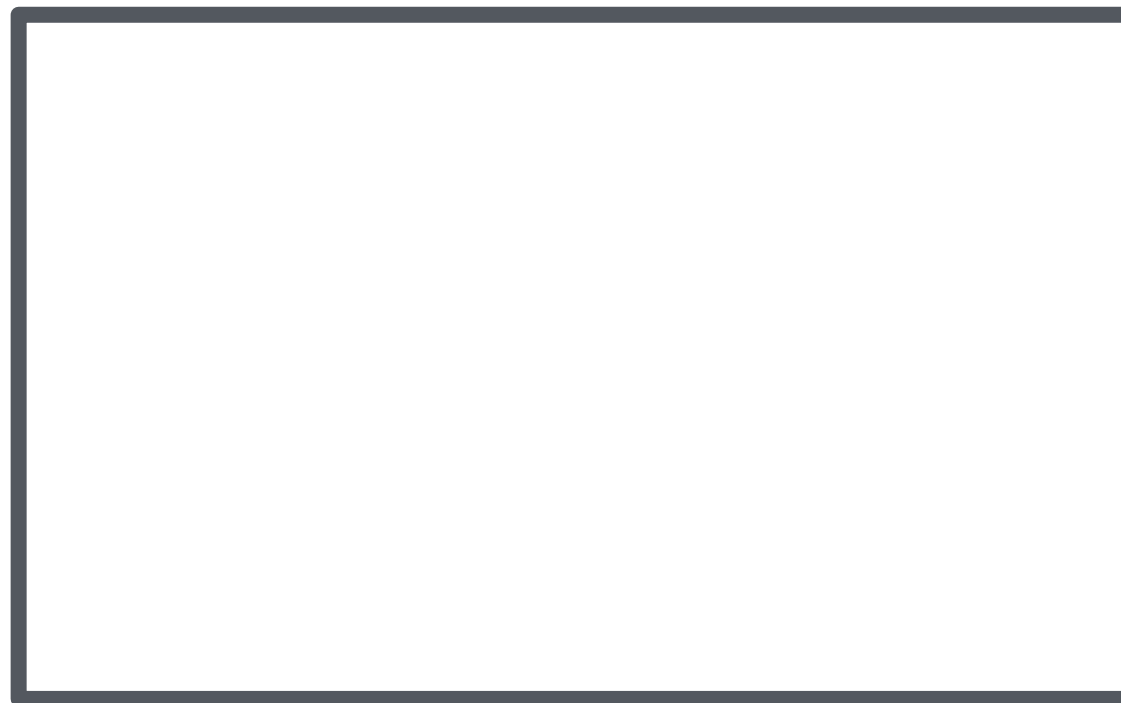
9 cm

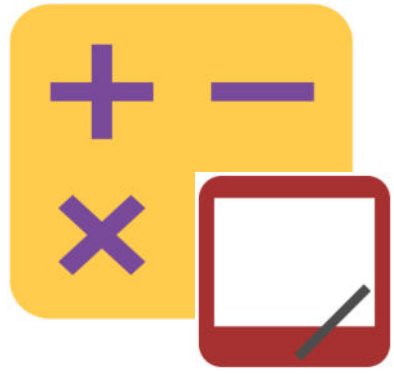


Fluency Practice

Find the Area and Perimeter

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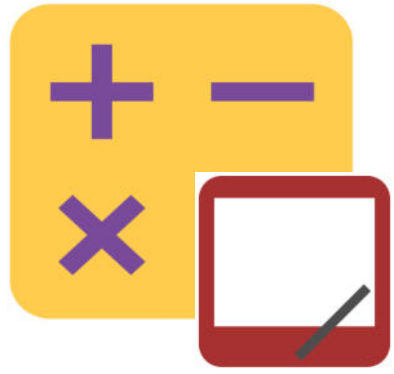


Fluency Practice

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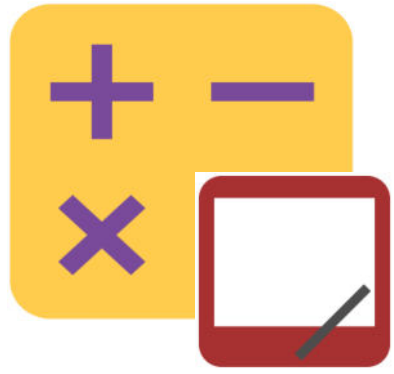


Fluency Practice

Find the Area and Perimeter

This is a square.
Say the length of each side



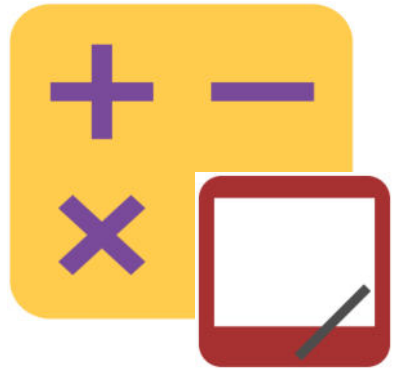


Fluency Practice

Find the Area and Perimeter

On your personal white board, write a multiplication sentence to find the **area.**



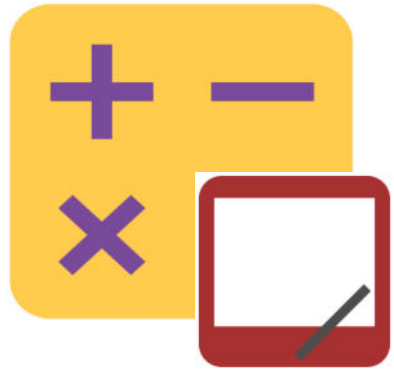


Fluency Practice

Find the Area and Perimeter

Use the **formula** for perimeter to solve.



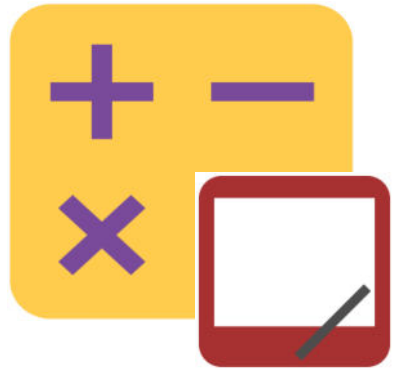


Fluency Practice

Find the Area and Perimeter

This is a square.
Say the length of each side



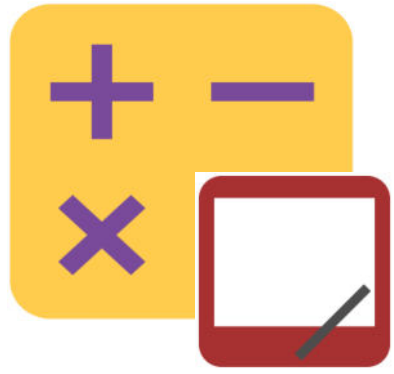


Fluency Practice

Find the Area and Perimeter

On your personal white board, write a multiplication sentence to find the **area.**



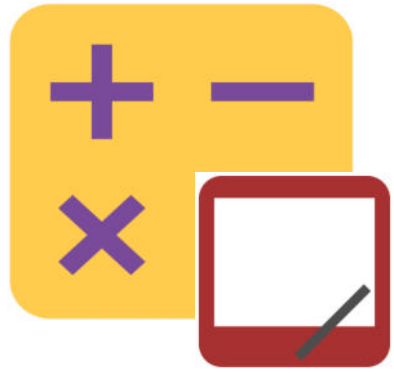


Fluency Practice

Find the Area and Perimeter

Use the **formula** for perimeter to solve.





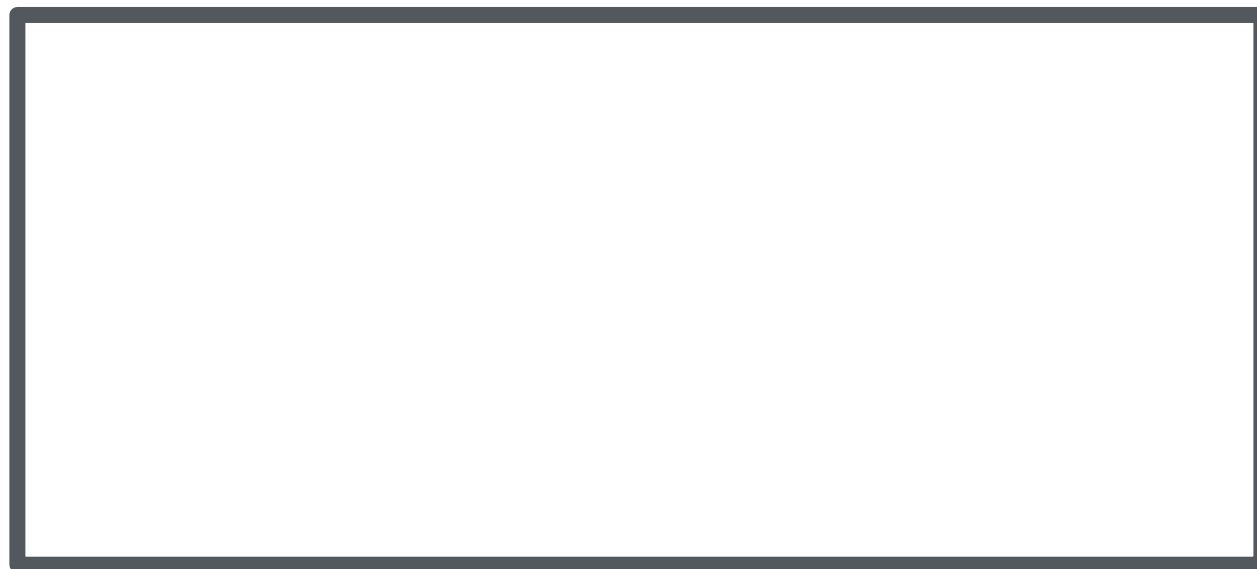
Fluency Practice

Find the Area and Perimeter

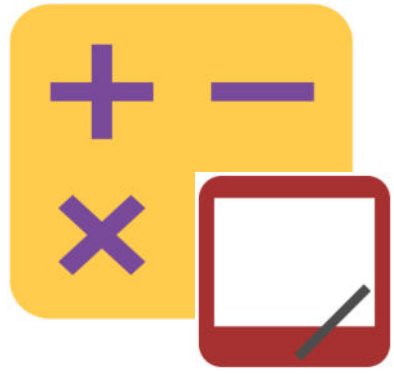
The area is 10 square cm.

On your white boards, write the division equation to find the width.

2



w



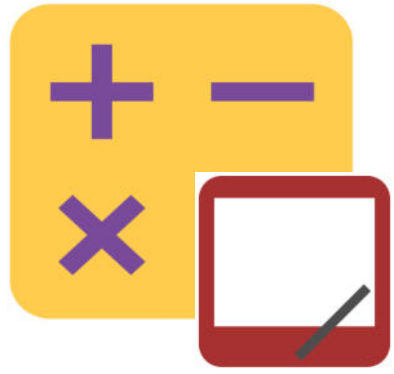
Fluency Practice

Find the Area and Perimeter

The area is 54 square cm.

Write the division equation to find the width.

A large, empty rectangular box with a dark gray border, intended for the student to write their division equation.



Fluency Practice

Find the Area and Perimeter

The area is 35 square cm.

Write the division equation to find the width.



Application Problem

Samantha received an allowance of \$3 every week. By babysitting, she earned an additional \$30 every week.

How much money did Samantha have in four weeks, combining her allowance and her babysitting?

Concept Development

Materials



(T) Thousands place value chart




(S) Personal white boards, thousands place value chart (template)



Concept Development

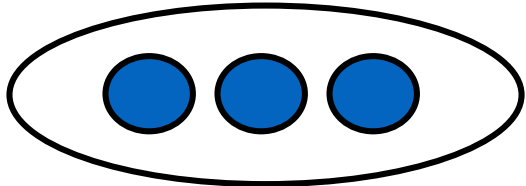
How many do you see?

thousands	hundreds	tens	ones
			



Concept Development

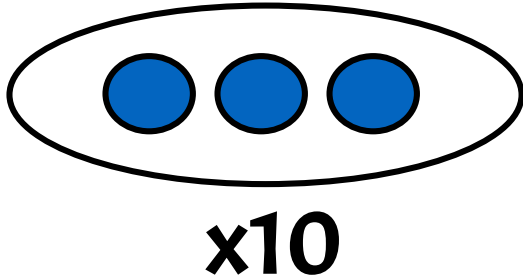
How many groups of 3 ones do you see?

thousands	hundreds	tens	ones
			



Concept Development

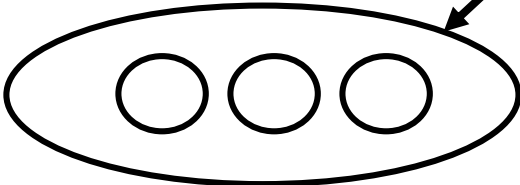
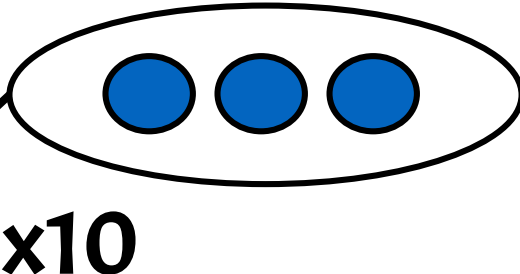
Suppose I wanted to multiply 3 ones by ten instead. How would I do that?

thousands	hundreds	tens	ones
			



Concept Development

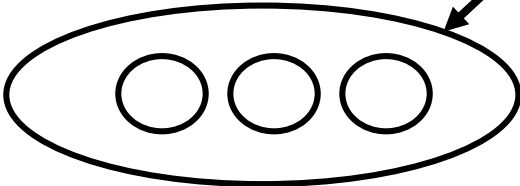
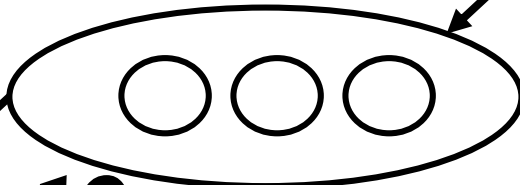
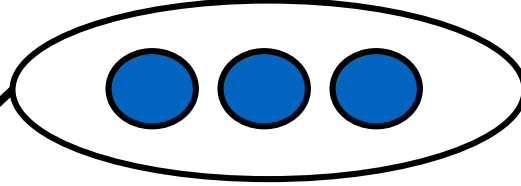
Suppose I wanted to multiply 3 ones by ten instead. How would I do that?

thousands	hundreds	tens	ones
			



Concept Development

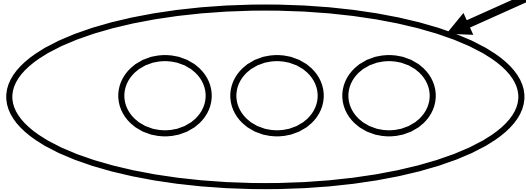
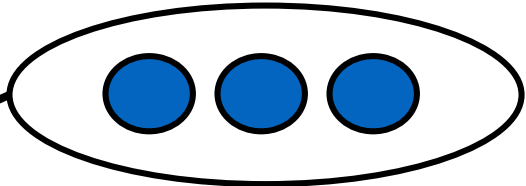
What if I wanted to multiply that by 10?

thousands	hundreds	tens	ones
			



Concept Development

Look at my equation. I started with 3 ones.
What did I multiply 3 ones by to get 3 hundreds?

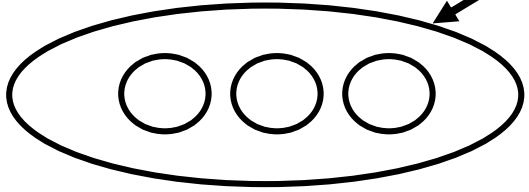
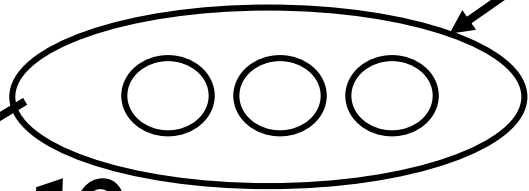
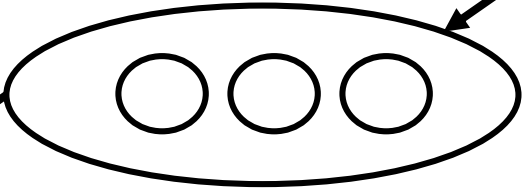
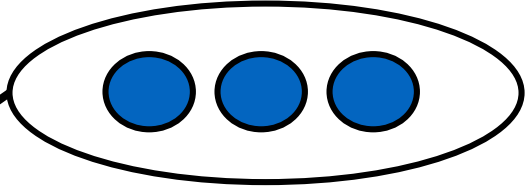
thousands	hundreds	tens	ones
		$\times 100$	



Concept Development

Work with your partner.

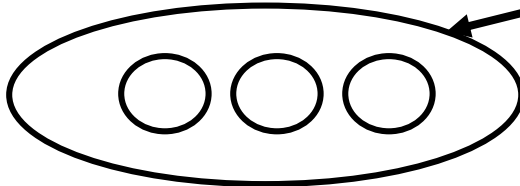
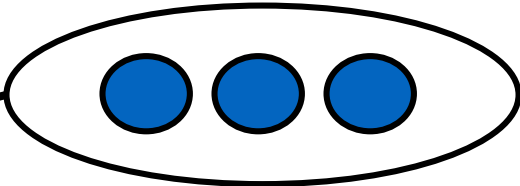
How can you solve $3 \times 1,000$?

thousands	hundreds	tens	ones
			



Concept Development


What is $3 \times 10 \times 10 \times 10$ or $3 \times 1,000$?

thousands	hundreds	tens	ones
	$\times 1,000$		



Concept Development



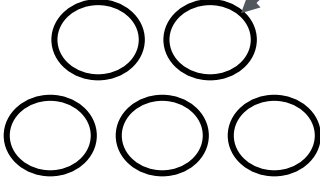
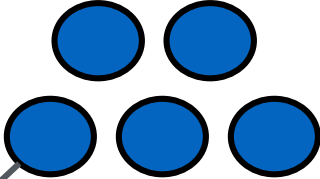
Now repeat the process with four

thousands	hundreds	tens	ones
			



Concept Development



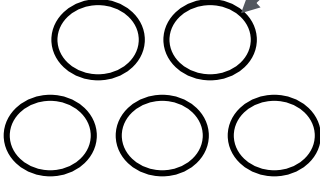
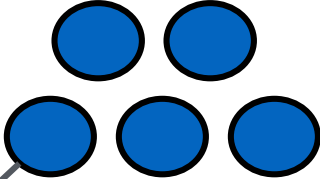
$$15 \times 10$$

thousands	hundreds	tens	ones
	 <p data-bbox="1196 1304 1352 1365">x 10</p>	 <p data-bbox="1780 1304 1937 1365">x 10</p> 	



Concept Development


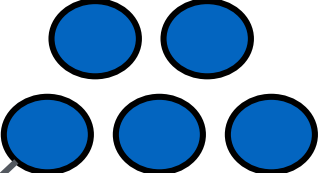

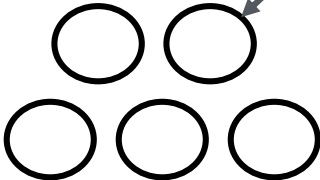
What is 1 ten \times 10?

thousands	hundreds	tens	ones
	 <p>$\times 10$</p>	 <p>$\times 10$</p> 	



Concept Development



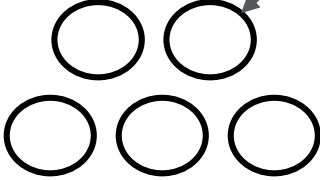
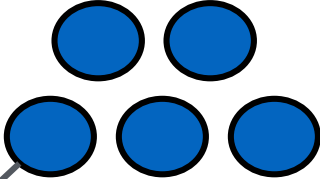
What is 5 ones \times 10?

thousands	hundreds	tens	ones
			
			



Concept Development

$$15 \times 10 = ?$$

thousands	hundreds	tens	ones
	 <p data-bbox="1201 1304 1352 1371">x10</p>	 <p data-bbox="1786 1304 1937 1371">x10</p> 	



Concept Development

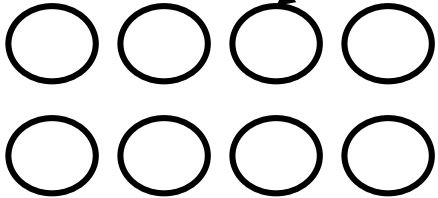
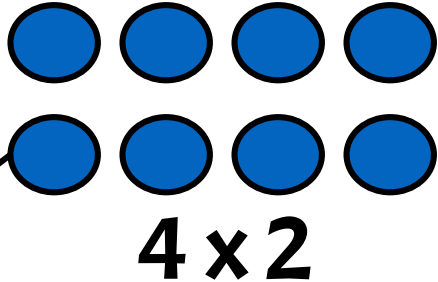
Now repeat that process using 22 x 100

thousands	hundreds	tens	ones
		● ●	● ●



Concept Development

$$4 \times 20$$

thousands	hundreds	tens	ones
			

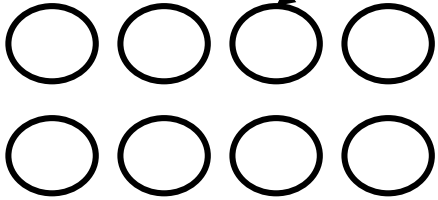
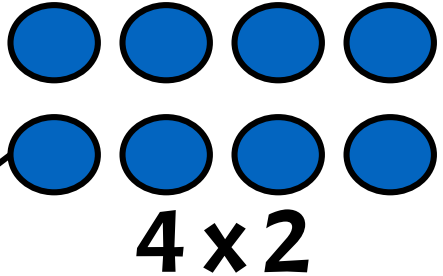


Concept Development



Just like 3×100 can be expressed as $3 \times 10 \times 10$, there are different ways to show 4×20 to help us multiply.

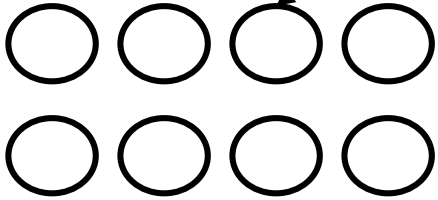
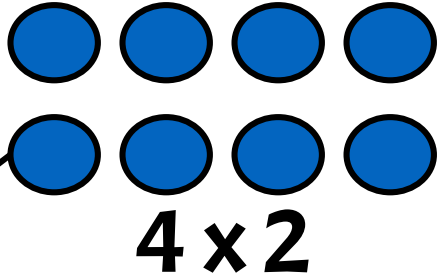
What is another way that I could express 4×20 ?

thousands	hundreds	tens	ones
		 $\times 10$	 4×2



Concept Development

When multiplying with multiples of 10,
you can decompose a factor to help you solve.
In this example, we expressed 4×20 as $(4 \times 2) \times 10$.

thousands	hundreds	tens	ones
		 $\times 10$	 4×2



Concept Development



**With your partner, solve 6×400
using a simplifying strategy.**

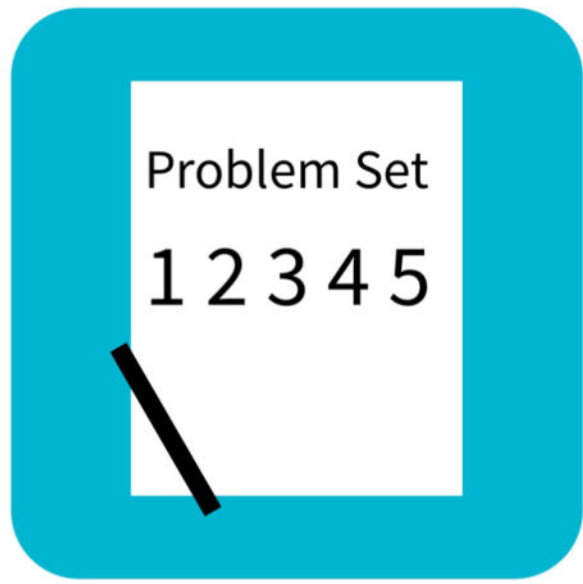
thousands	hundreds	tens	ones



Concept Development

With your partner, solve 4×500 using a simplifying strategy.

thousands	hundreds	tens	ones



Problem Set

Name _____

Date _____

Example:

$$5 \times 10 = \underline{50}$$
$$5 \text{ ones} \times 10 = \underline{5} \text{ tens}$$

thousands	hundreds	tens	ones
		(ooooo) ↑ ×10	(.....)

Draw place value disks and arrows as shown to represent each product.

- $5 \times 100 = \underline{\hspace{2cm}}$
 $5 \times 10 \times 10 = \underline{\hspace{2cm}}$
 $5 \text{ ones} \times 100 = \underline{\hspace{1cm}} \underline{\hspace{1cm}}$

thousands	hundreds	tens	ones

Debrief

What is the difference between saying 10 more and 10 times as many?

What is another expression that has the same value as 10×800 and $1,000 \times 8$?

Think about the problems we solved during the lesson and the problems you solved in the Problem Set. When does the number of zeros in the factors not equal the number of zeros in the product?

Debrief

For Problem 4, $12 \times 10 = 120$, discuss with your partner whether or not this equation is true: $12 \times 10 = 3 \times 40$. (Problem 7 features 3×40 .)

How did the Application Problem connect to today's lesson?

Exit Ticket

Name _____

Date _____

Fill in the blanks in the following equations.

a. $5 \times 10 =$ _____

b. _____ $\times 5 = 500$

c. $5,000 =$ _____ $\times 1000$

d. $10 \times 2 =$ _____

e. _____ $\times 20 = 2,000$

f. $2,000 = 10 \times$ _____

g. $100 \times 18 =$ _____

h. _____ $= 10 \times 32$

i. $4,800 =$ _____ $\times 100$