# Eureka Math

## 3rd Grade
## Module 3
## Lesson 12

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Directions for customizing presentations are available on the next slide.

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ReadyGEN™ in Action

3rd Grade
Unit 3, Module A
Lesson 1

Gr3(2) U3MAL1 Sample Lesson.pptx    Last edit was yesterday at

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EN™ in Action

rd Grade
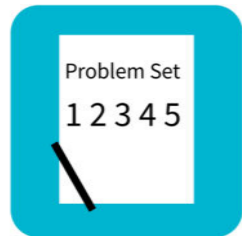Unit 3, Module A
Lesson 1

# Icons

RDW — Read, Draw, Write

Learning Target

Personal White Board

Problem Set

Manipulatives Needed

Fluency

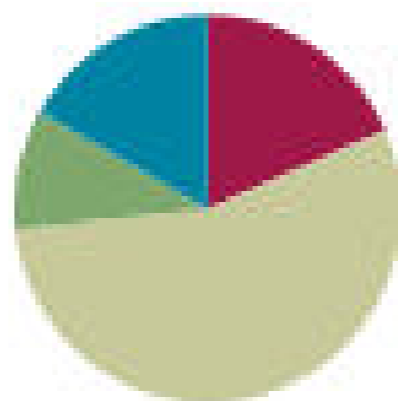Think Pair Share

Whole Class

Individual

Partner

Small Group

Small Group Time

# Lesson 12

Objective:  Apply the distributive property and the fact 9 = 10 − 1 as a strategy to multiply.
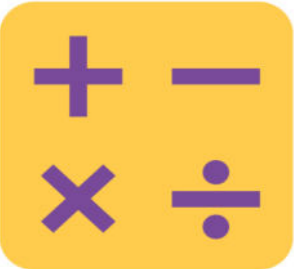
## Suggested Lesson Structure

| | | |
|---|---|---|
| ■ Fluency Practice | (11 minutes) | |
| ■ Application Problem | (6 minutes) | |
| ■ Concept Development | (33 minutes) | |
| ■ Student Debrief | (10 minutes) | |
| **Total Time** | **(60 minutes)** | |

Objective:  I can apply the distributive property and the fact 9=10 – 1 as a strategy to multiply.

# Group Counting

# Multiply by 8

(7 minutes)
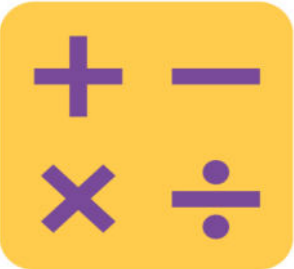
# Group Counting

# Take from the ten

(4 minutes)
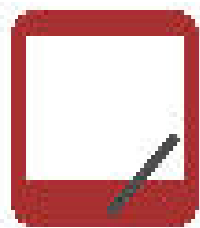
# Concept Development

(33 minutes)

Materials: (S) Personal white board, tape diagram (Template)

**Template**
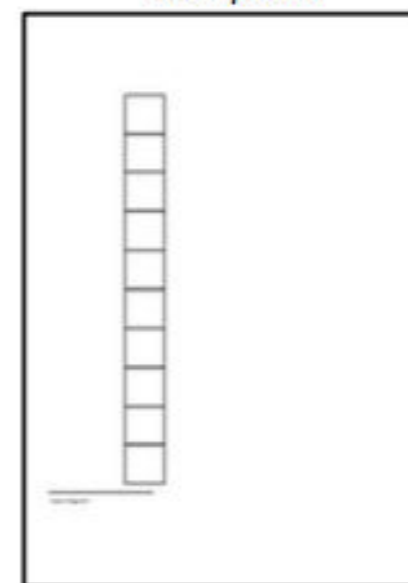
Use the 9 = 10 − 1 strategy to solve 9 × $n$ facts.
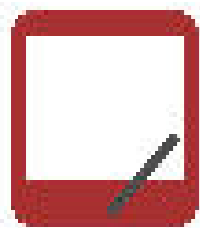
# ☑ Concept Development

**Template**

(33 minutes)

Materials: (S) Personal white board, tape diagram (Template)

Use the 9 = 10 − 1 strategy to solve :

$9 \times 8 =$ _____
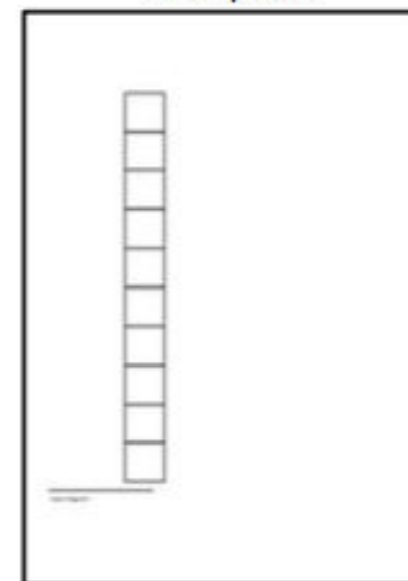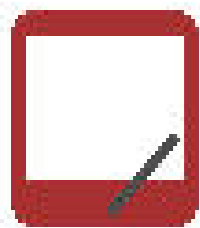
# ☑ Concept Development

(33 minutes)

Materials: (S) Personal white board, tape diagram (Template)

Use the 9 = 10 − 1 strategy to solve

$9 \times 7 =$ _____.

Template
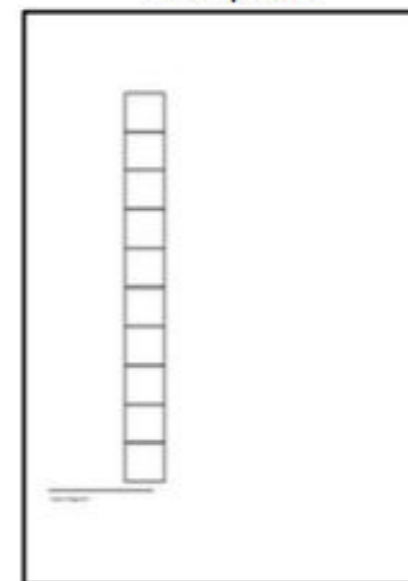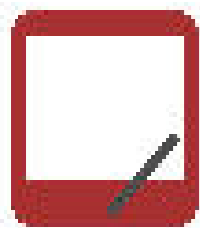
# ☑ Concept Development

(33 minutes)

Materials: (S) Personal white board, tape diagram (Template)

Use the 9 = 10 − 1 strategy to solve

$9 \times 6 =$ _____.
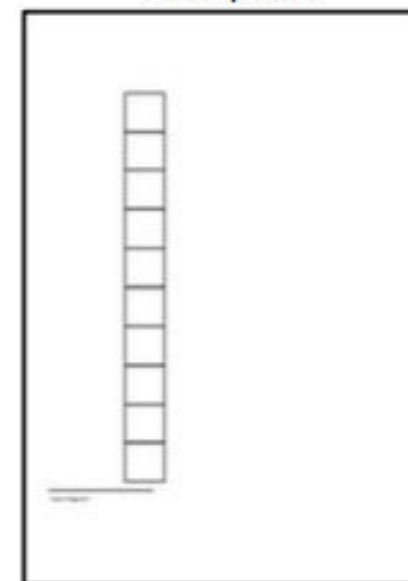
# ☑ Concept Development

Continue with the following suggested sequence: 9 × 7 and 9 × 6.
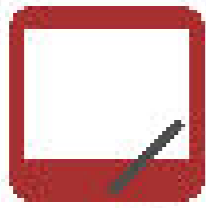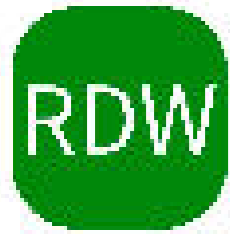
# Application Problem

A scientist fills 5 test tubes with 9 milliliters of fresh water in each. She fills another 3 test tubes with 9 milliliters of salt water in each. How many milliliters of water does she use in all? Use the break apart and distribute strategy to solve.

# Application Problem

A scientist fills 5 test tubes with 9 milliliters of fresh water in each. She fills another 3 test tubes with 9 milliliters of salt water in each. How many milliliters of water does she use in all? Use the break apart and distribute strategy to solve.



$$8 \times 9 = (5+3) \times 9$$
$$= (5 \times 9) + (3 \times 9)$$
$$= 45 + 27$$
$$= 72$$
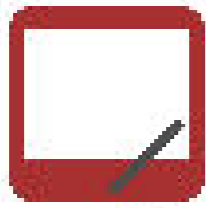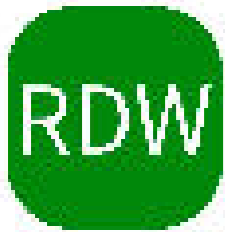
She used 72mL of water in all.

# Application Problem

The doctor prescribed 175 milliters of medicine on Monday and 256 milliliters of medicine on Tuesday.

a. Estimate how much medicine he prescribed in both days.

b. Precisely how much medicine did he prescribe in both days?
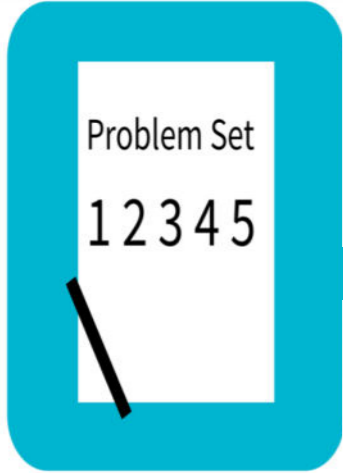
# Problem Set
(10 minutes)

Name _____     Date _____

1. Each ☐ has a value of 9. Find the value of each row. Then, add the rows to find the total.

a. $6 \times 9 =$ _____

$5 \times 9 = 45$

$1 \times 9 =$ _____

$6 \times 9 = (5 + 1) \times 9$
$= (5 \times 9) + (1 \times 9)$
$= 45 +$ _____
$=$ _____

b. $7 \times 9 =$ _____

$5 \times 9 = 45$

_____ $\times 9 =$ _____

$7 \times 9 = (5 +$ ___$) \times 9$
$= (5 \times 9) + ($___ $\times 9)$
$= 45 +$ _____
$=$ _____

c. $8 \times 9 =$ _____

$5 \times 9 =$ _____

_____ $\times 9 =$ _____

$8 \times 9 = (5 +$ _____$) \times 9$
$= (5 \times 9) + ($_____ $\times$ _____$)$
$= 45 +$ _____
$=$ _____

d. $9 \times 9 =$ _____

$5 \times 9 =$ _____

_____ $\times 9 =$ _____

$9 \times 9 = (5 +$ _____$) \times 9$
$= (5 \times 9) + ($_____ $\times$ _____$)$
$= 45 +$ _____
$=$ _____

# Problem Set

**RDW**

(10 minutes)

2. Find the total value of the shaded blocks.

a. $9 \times 6 =$

| 6 | | | | | | | | | |

9 sixes = 10 sixes − 1 six

= _____ − 6

= _____

b. $9 \times 7 =$

| 7 | | | | | | | | | |

9 sevens = 10 sevens − 1 seven

= _____ − 7

= _____

c. $9 \times 8 =$

| 8 | | | | | | | | | |

9 eights = 10 eights − 1 eight

= _____ − 8

= _____

d. $9 \times 9 =$

| 9 | | | | | | | | | |
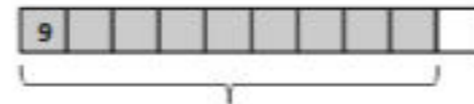
9 nines = 10 nines − 1 nine

= _____ − _____

= _____

3. Matt buys a pack of postage stamps. He counts 9 rows of 4 stamps. He thinks of 10 fours to find the total number of stamps. Show the strategy that Matt might have used to find the total number of stamps.
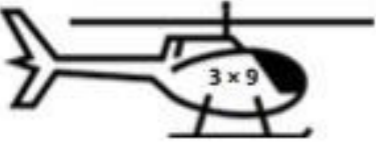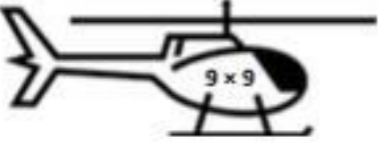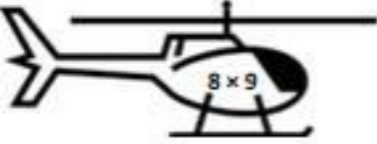
**EUREKA MATH**

Lesson 12:   Apply the distributive property and the fact 9 = 10 − 1 as a strategy to multiply.

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G3-M3-TE-1.3.0-05.2015

# Problem Set

## (10 minutes)

4. Match.

| Helicopter | Cloud | Helicopter |
|---|---|---|
| $3 \times 9$ | 81 | $45 \div 9$ |
| $9 \times 9$ | 10 | $9 \div 9$ |
| | 27 | |
| | 5 | |
| $8 \times 9$ | 36 | $90 \div 9$ |
| | 1 | |
| $9 \times 4$ | 6 | $72 \div 9$ |
| | 72 | |
| | 18 | |
| $2 \times 9$ | | $54 \div 9$ |
| | 8 | |

Student Debrief (10 minutes)

Lesson Objective: Apply the distributive property and the fact $9 = 10 - 1$ as a strategy to multiply.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.
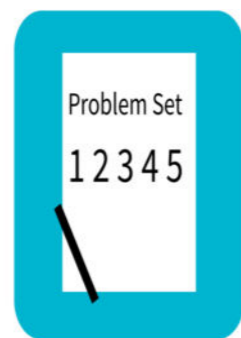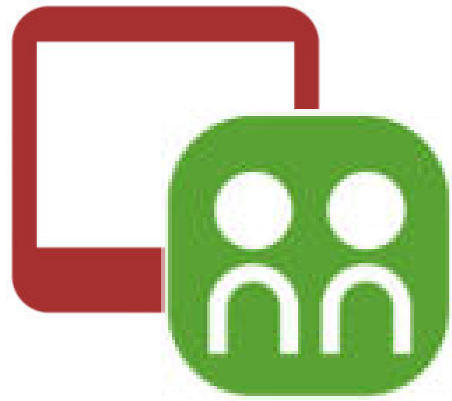
# Student Debrief

**Lesson Objective:** Lesson Objective: Apply the distributive property and the fact 9 = 10 – 1 as a strategy to multiply.

# Exit Ticket

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

1. Each ⬚ has a value of **9**. Complete the equations to find the total value of the tower of blocks.

   _____ × 9 = (5 + _____) × 9

   = (5 × _____) + (_____ × _____)

   = 45 + _____

   = _____
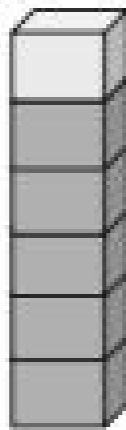
2. Hector solves 9 × 8 by subtracting 1 eight from 10 eights. Draw a model, and explain Hector's strategy.

Multiply.

8 x 1 = _____     8 x 2 = _____     8 x 3 = _____     8 x 4 = _____

8 x 5 = _____     8 x 6 = _____     8 x 7 = _____     8 x 8 = _____

8 x 9 = _____     8 x 10 = _____     8 x 5 = _____     8 x 6 = _____

8 x 5 = _____     8 x 7 = _____     8 x 5 = _____     8 x 8 = _____

8 x 5 = _____     8 x 9 = _____     8 x 5 = _____     8 x 10 = _____

8 x 6 = _____     8 x 5 = _____     8 x 6 = _____     8 x 7 = _____

8 x 6 = _____     8 x 8 = _____     8 x 6 = _____     8 x 9 = _____

8 x 6 = _____     8 x 7 = _____     8 x 6 = _____     8 x 7 = _____

8 x 8 = _____     8 x 7 = _____     8 x 9 = _____     8 x 7 = _____

8 x 8 = _____     8 x 6 = _____     8 x 8 = _____     8 x 7 = _____

8 x 8 = _____     8 x 9 = _____     8 x 9 = _____     8 x 6 = _____

8 x 9 = _____     8 x 7 = _____     8 x 9 = _____     8 x 8 = _____

8 x 9 = _____     8 x 8 = _____     8 x 6 = _____     8 x 9 = _____

8 x 7 = _____     8 x 9 = _____     8 x 6 = _____     8 x 8 = _____

8 x 9 = _____     8 x 7 = _____     8 x 6 = _____     8 x 8 = _____

multiply by 8 (6–10)