## Materials List

(S) Multiply By 9 (1–5) (Pattern Sheet)

Materials: (S) Personal white board

# Eureka Math

3rd Grade
Module 3
Lesson 14

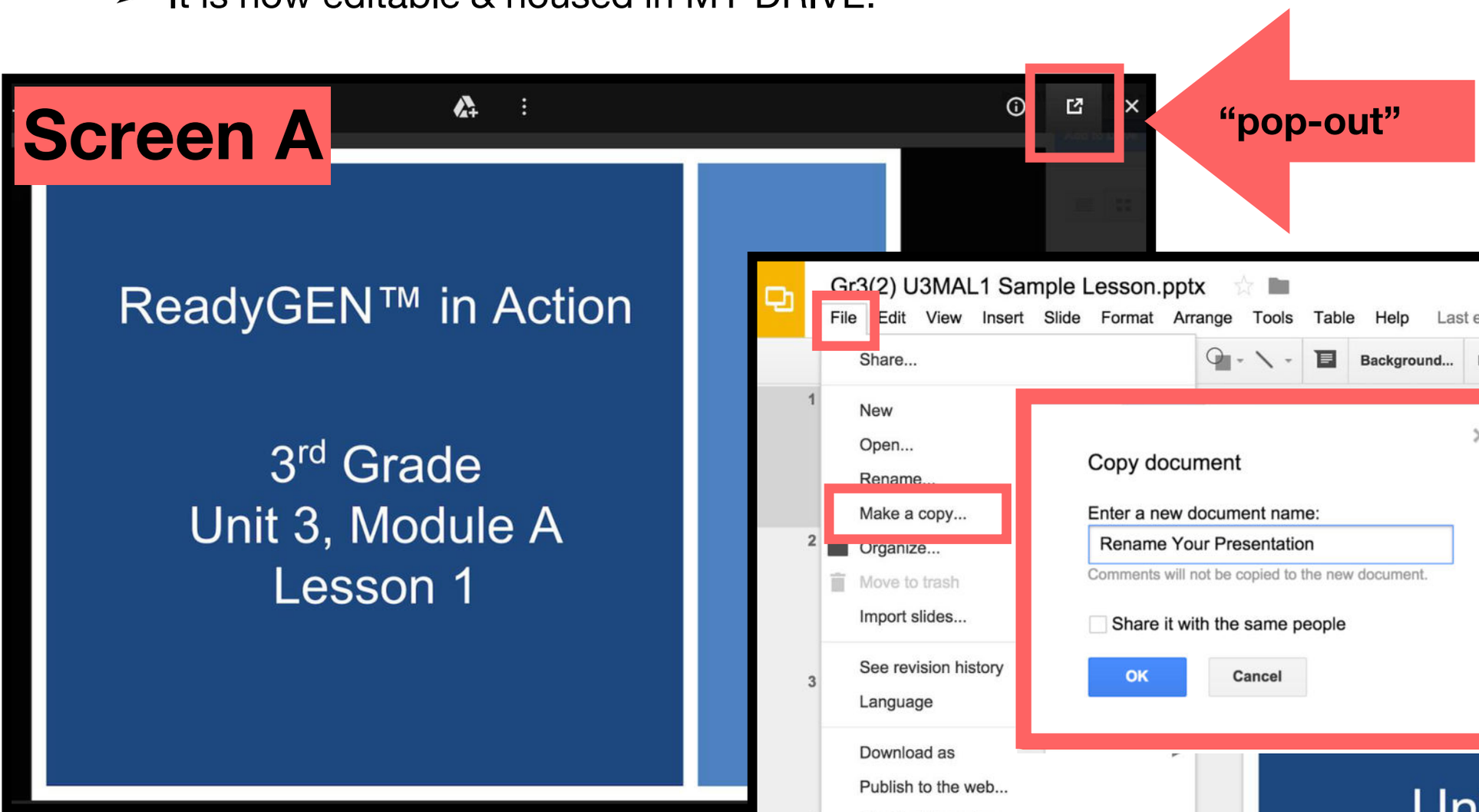
At the request of elementary teachers, a team of Bethel & Sumner educators met as a committee to create Eureka slideshow presentations. These presentations are not meant as a script, nor are they required to be used. Please customize as needed. Thank you to the many educators who contributed to this project!

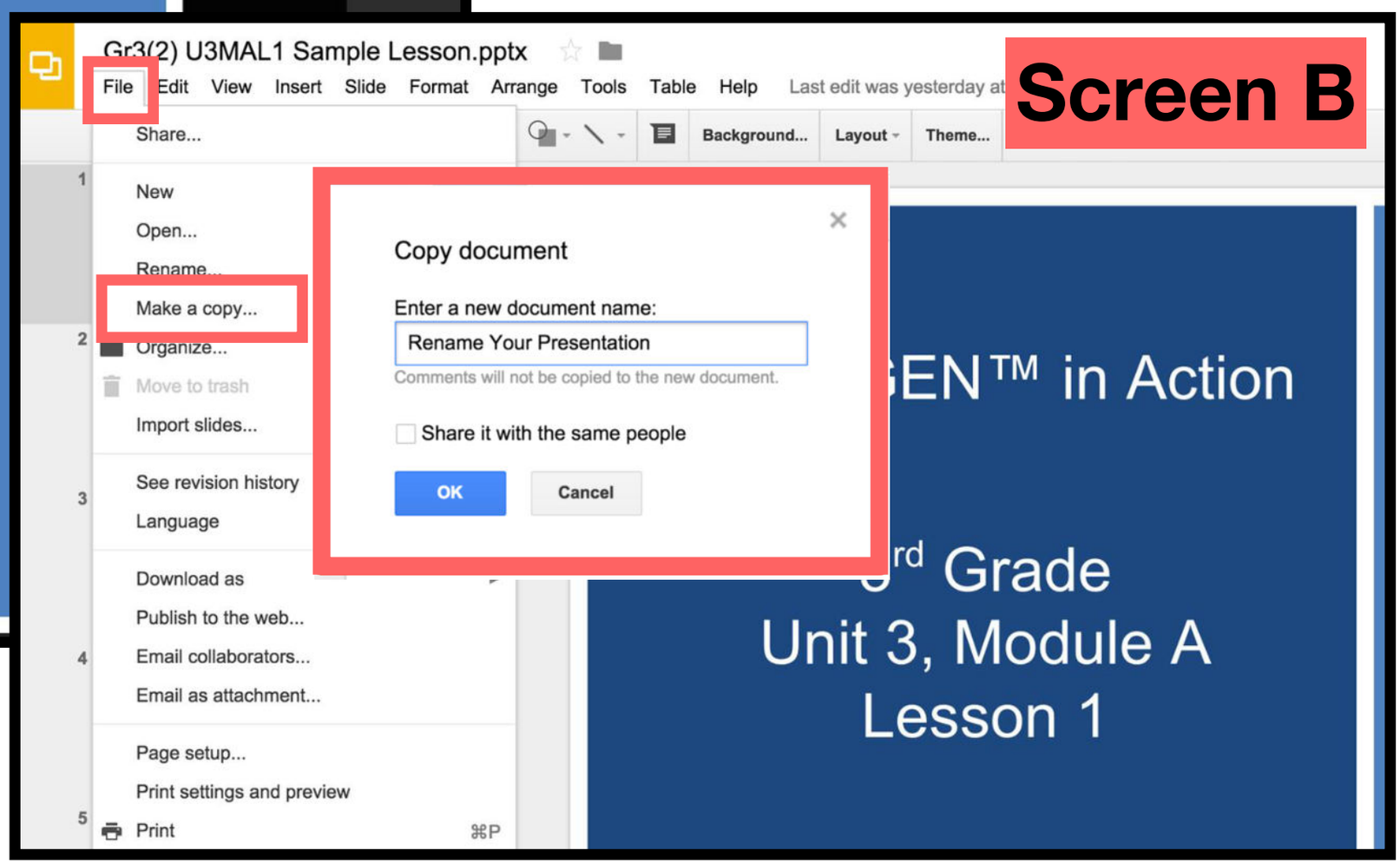
Directions for customizing presentations are available on the next slide.

# Customize this Slideshow

## Reflecting your Teaching Style and Learning Needs of Your Students

- When the Google Slides presentation is opened, it will look like Screen A.
- Click on the “pop-out” button in the upper right hand corner to change the view.
- The view now looks like Screen B.
- Within Google Slides (not Chrome), choose FILE.
- Choose MAKE A COPY and rename your presentation.
- Google Slides will open your renamed presentation.
- It is now editable & housed in MY DRIVE.



# Icons

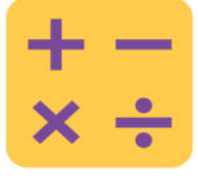

Read, Draw, Write

Learning Target

Personal White Board

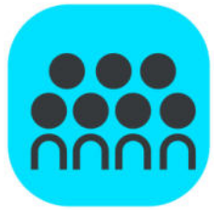

Problem Set

Manipulatives Needed



Fluency

Think Pair Share



Whole Class

Individual

Partner

Small Group

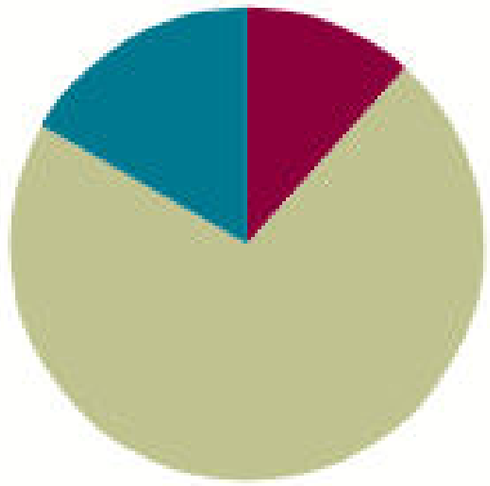
Small Group Time

# Lesson 14

Objective:  Identify and use arithmetic patterns to multiply.

**Suggested Lesson Structure**

| | |
|---|---|
| Fluency Practice | (7 minutes) |
| Concept Development | (43 minutes) |
| Student Debrief | (10 minutes) |
| **Total Time** | **(60 minutes)** |



## Fluency Practice  (7 minutes)

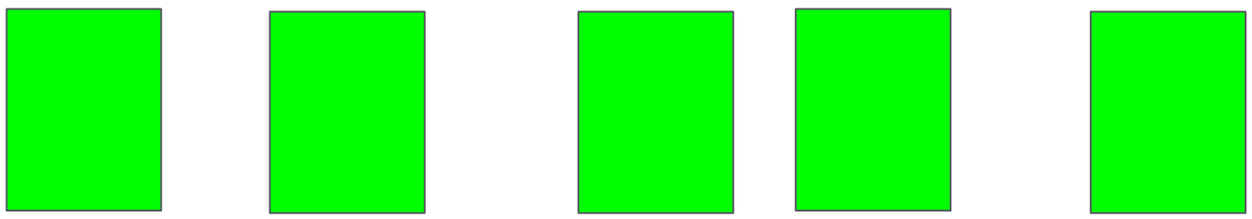
- Multiply By 9  **3.OA.7**  (7 minutes)

I can identify and use arithmetic patterns to multiply.

# Multiply By 9

Write 5 × 9 = ____

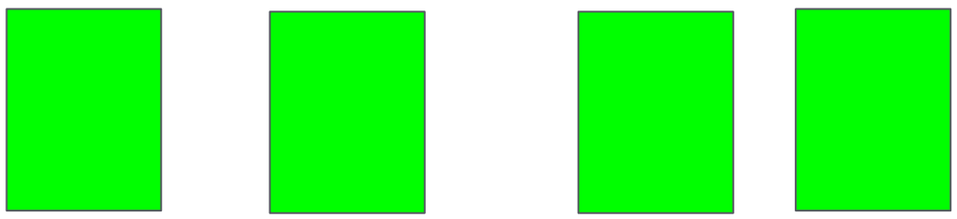
Let’s skip-count by nines to find the answer.



# Multiply By 9

Write 4 × 9 = ____

Let’s skip-count by nines to find the answer.



# Multiply By 9

Let’s practice multiplying by 9. Be sure to work left to right across the page.



Multiply.

| | | | |
|---|---|---|---|
| 9 x 1 = _____ | 9 x 2 = _____ | 9 x 3 = _____ | 9 x 4 = _____ |
| 9 x 5 = _____ | 9 x 1 = _____ | 9 x 2 = _____ | 9 x 1 = _____ |
| 9 x 3 = _____ | 9 x 1 = _____ | 9 x 4 = _____ | 9 x 1 = _____ |
| 9 x 5 = _____ | 9 x 1 = _____ | 9 x 2 = _____ | 9 x 3 = _____ |

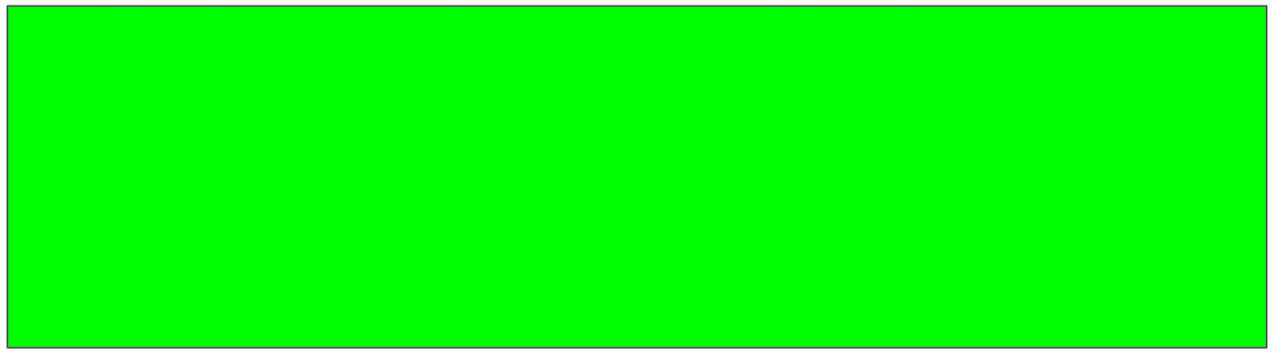
# Concept Development

Part 1: Extend the 9 = 10 – 1 strategy of multiplying with units of 9.

How is the 9 = 10 – 1 strategy, or add ten, subtract 1, from the last lesson used to solve 2 × 9?

# Concept Development

Let’s use this strategy to find 2 × 9 another way. (Draw a 2 × 10 array.) When we start with 2 × 10, how many tens do we have?

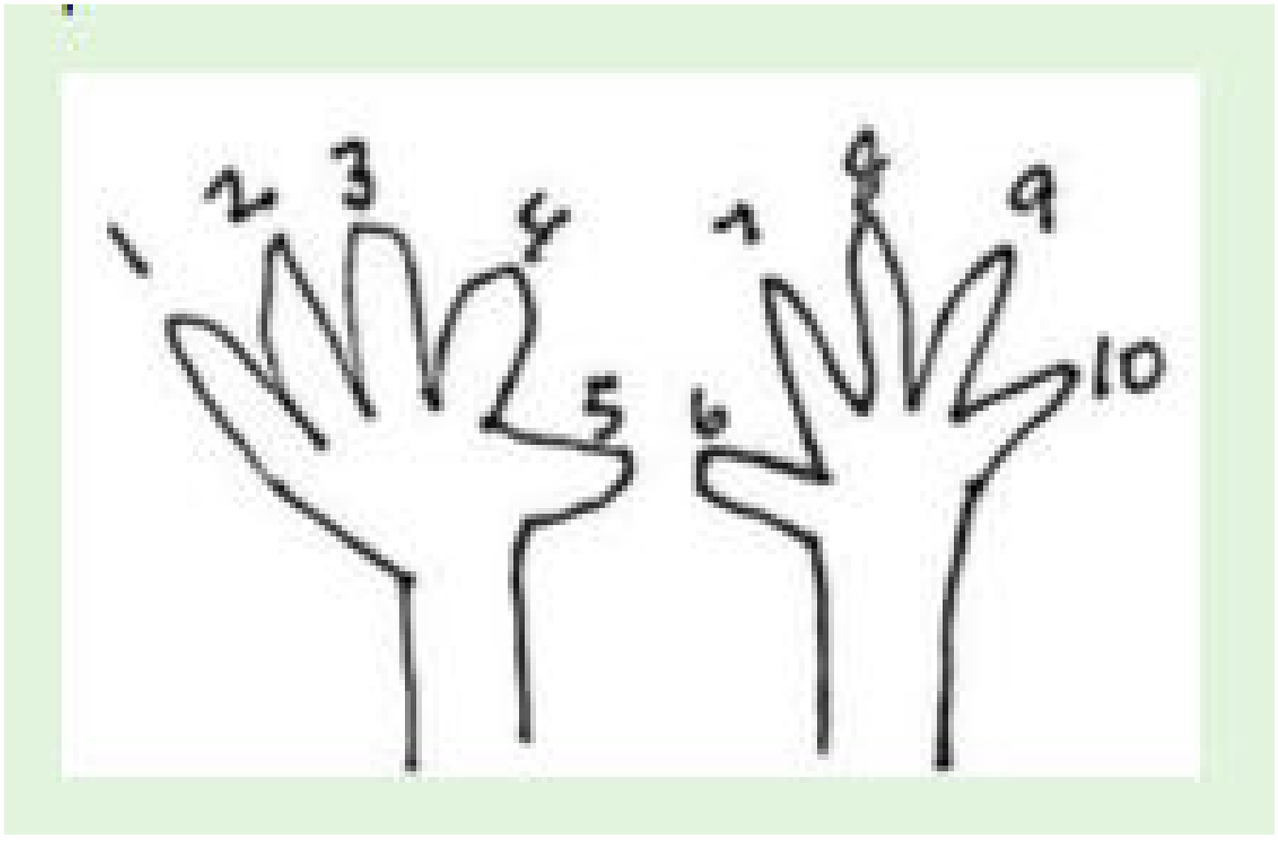


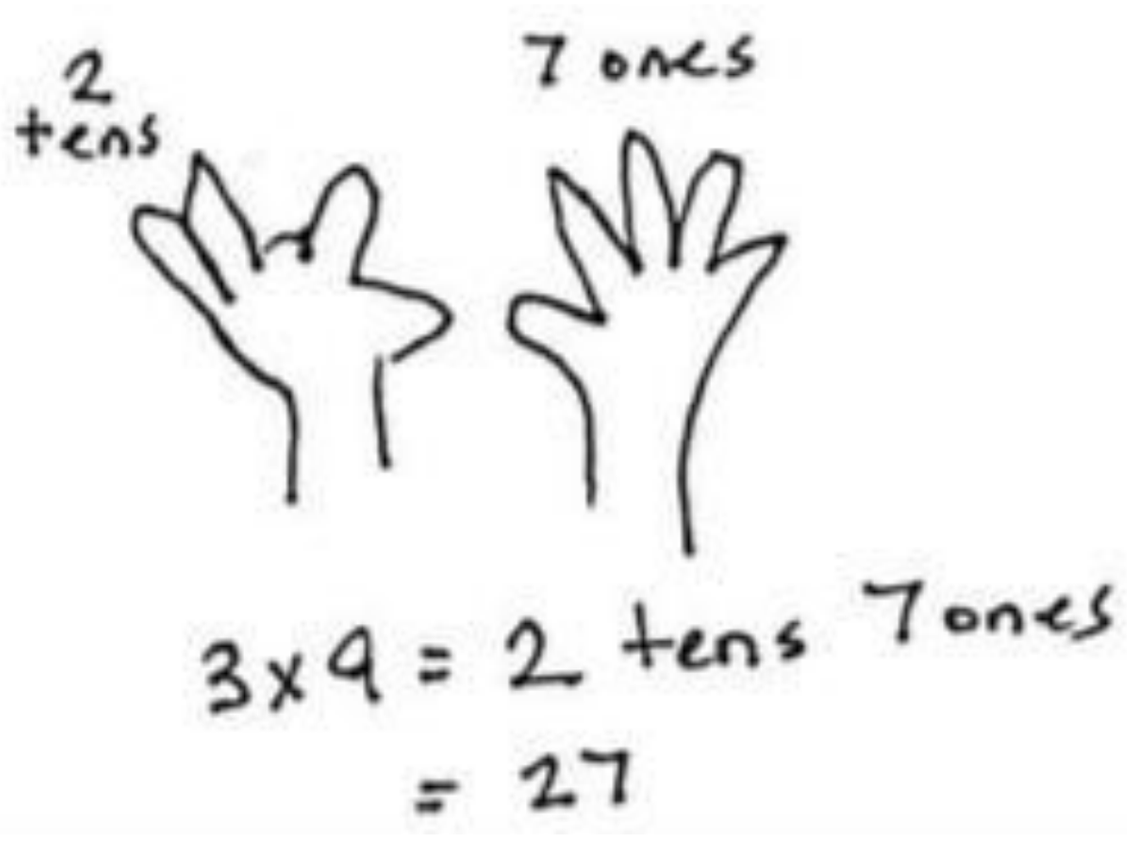
# Concept Development

Let’s use the 9 = 10 – 1 strategy to solve 3 × 9.

Draw an array for 3 × 10. To solve, how many should we subtract?

You can use your fingers to quickly solve a nines fact using this strategy. Put your hands out in front of you with all 10 fingers up, like this.



# Concept Development

Station 1:
Use the add 10, subtract 1 strategy to list facts from 1 × 9 to 10 × 9.

Station2:
Use 9 × n = (10×n) – (1×n), a distributive strategy, to solve facts from 1 × 9 to10 × 9.

Station 3: Use the finger strategy to solve facts from 1 × 9 to 10 × 9.

Station 4: Use the number of groups to find the digits in the tens and ones places of the product to solve facts from 6 × 9 to 9 × 9.

Station5: Use 9 × n = (5×n) + (4×n), a distributive strategy, to solve facts from 6 × 9 to 9 × 9.

# Concept Development

Is there a strategy that is easiest for you? What makes it easier than the others?

What strategy is quickest in helping you solve a nines fact with a large number of groups, such as 12 × 9 = n?

Which strategies would not work for such a large fact?

Which strategies could easily be used to solve a division fact?

# Problem Set



Name _____ Date _____

1. a. Multiply. Then, add the tens digit and ones digit of each product.

| | |
|---|---|
| 1 × 9 = 9 | 0 + 9 = 9 |
| 2 × 9 = 18 | 1 + 8 = _____ |
| 3 × 9 = | _____ + _____ = _____ |
| 4 × 9 = | _____ + _____ = _____ |
| 5 × 9 = | _____ + _____ = _____ |
| 6 × 9 = | _____ + _____ = _____ |

# Student Debrief


Lesson Objective: Identify and use arithmetic patterns to multiply.

Encourage students to explain a different strategy that could be used to solve Problem 3.

Why is it important to know several strategies for solving larger multiplication facts?

Which strategies for solving nines facts can be modified to apply to a different set of facts (sixes, sevens, eights, etc.)?

# Exit Ticket



Name _____ Date _____

Donald writes 6 × 9 = 54. Explain two strategies you could use to check his work.