

# TEACHER'S GUIDE Overview *continued*

*i-Ready Classroom Mathematics* lessons consist of three types of sessions: Explore, Develop, and Refine. The following is a walkthrough of the planning and support features within the Teacher's Guide for a Develop session. You will find many of the same features in the Explore and Refine sessions.

**Lesson Overview** provides information for use in planning whole class instruction, small group differentiation, and independent learning opportunities.

**Math Focus** sets learning expectations for students' conceptual understanding and how they demonstrate that understanding.

**Content Objectives** identify the mathematical learning goals for the lesson, while **Language Objectives** indicate the language students are expected to understand and produce as they work on those goals.

**Prior Knowledge** are opportunities to monitor understanding and identify students' learning needs.

**Math Vocabulary** is defined in the context of lessons, and academic words can be explored using the **Academic Vocabulary** Routine.

**Learning Progression** sets context for the mathematics of the lesson, providing information on how the content fits across and within grade levels—what students previously learned, what they are learning now, and what they will be learning next.

## LESSON 12

### Overview | Multiplication and Division Facts

#### MATH FOCUS

**Focus Standards**

**3.OA.A.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations  $8 \times ? = 48$ ,  $5 = \square \div 3$ ,  $6 \times 6 = ?$ .*

**3.OA.C.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one knows  $40 \div 5 = 8$ ) or properties of operations. *By the end of Grade 3, know from memory all products of two one-digit numbers.*

See Unit 2 Overview for developing and applied standards.

#### Objectives

**Content Objectives**

- Fluently multiply and divide within 100.
- Use fact families and the relationship between multiplication and division to find unknown whole numbers in multiplication and division equations.
- Solve word problems using equations with the unknown whole number in different places in the equations.

**Language Objectives**

- Understand and use lesson vocabulary to explain the relationship between multiplication, division, and fact families to find unknown whole numbers during partner and whole class discussion.
- Explain in writing how to solve word problems using equations with the unknown whole numbers in different places in the equations.
- Justify solution strategies and answer choices during partner discussions.

#### Vocabulary

**Math Vocabulary**

**fact family** a group of related equations that use the same numbers, but in a different order, and two different operation symbols. A fact family can show the relationship between addition and subtraction or between multiplication and division.

**multiplication table** a table showing multiplication facts.

Review the following key terms.

**division equation** an equation with a division symbol and an equal sign. For example,  $15 \div 3 = 5$ .

**factor** a number that is multiplied.

**multiplication equation** an equation with a multiplication symbol and an equal sign. For example,  $3 \times 5 = 15$ .

**product** the result of multiplication.

**quotient** the result of division.

**Academic Vocabulary**

**each** every.

**complete(verb)** to finish.

#### STANDARDS FOR MATHEMATICAL PRACTICE (SMP)

SMP 1, 2, 3, 4, 5, and 6 are integrated into the Try-Discuss-Connect framework.\*

This lesson provides additional support for:

- 2 Reason abstractly and quantitatively.
- 5 Use appropriate tools strategically.
- 7 Look for and make use of structure.

\* See page 1q to learn how every lesson includes these SMP.

#### Prior Knowledge

- Understand the meaning of multiplication.
- Know basic multiplication facts for 0 through 10.
- Understand the meaning of division.
- Connect multiplication and division.

#### Learning Progression

**In Grade 3** multiplication is a major focus. Students also build a foundational understanding of division and learn how the two operations are related. Students have learned these concepts in previous Grade 3 lessons.


**In this lesson** students use fact families and a multiplication table to solve multiplication and division problems and to write related multiplication and division facts. Students learn how to use the rows and columns in a multiplication table to find missing numbers in multiplication and division facts. Students then apply that understanding to finding the third number in fact families.
























**In later grades** fluency with multiplication facts up to  $9 \times 9$  and the related division facts becomes a critical skill. For this reason, it is important for students to develop a deep understanding of multiplication and division and use this understanding to make meaningful strategies to help them master multiplication and division facts.

**Pacing Guide** session-by-session pacing is used to plan daily instruction and practice.

**Additional Practice** is for use as in-class small group work, after class work, or at-home learning.

## Pacing Guide

Items marked with  are available on the Teacher Toolbox.

	MATERIALS	DIFFERENTIATION
<b>SESSION 1 Explore</b> Multiplication and Division Facts (35–50 min)	 <b>Math Toolkit</b> buttons, connecting cubes, counters, cups, multiplication models, number lines  Presentation Slides 	<b>PREPARE</b> Interactive Tutorial  <b>RETEACH or REINFORCE</b> Hands-On Activity <b>Materials</b> For each pair: 30 counters or connecting cubes
<b>SESSION 2 Develop</b> Working with Division Fact (45–60 min)	 <b>Math Toolkit</b> buttons, counters, cups, multiplication models, number lines, 1-centimeter grid paper  Presentation Slides 	<b>RETEACH or REINFORCE</b> Hands-On Activity <b>Materials</b> For each pair: 10 triangles from Activity Sheet <i>Multiplication Triangles</i>  <b>REINFORCE</b> Fluency & Skills Practice  <b>EXTEND</b> Deepen Understanding
<b>SESSION 3 Develop</b> Using a Multiplication Table (45–60 min)	 <b>Math Toolkit</b> connecting cubes, counters, multiplication models, multiplication tables, number lines, 1-centimeter grid paper  Presentation Slides 	<b>RETEACH or REINFORCE</b> Visual Model  <b>Materials</b> For each student: Activity Sheet <i>Blank Multiplication Table</i>  <b>REINFORCE</b> Fluency & Skills Practice  <b>EXTEND</b> Deepen Understanding (Model It) Deepen Understanding (Connect It)
<b>SESSION 4 Refine</b> Working with Multiplication and Division Facts (45–60 min)	 <b>Math Toolkit</b> Have items from previous sessions available for students.  Presentation Slides 	<b>RETEACH</b> Hands-On Activity <b>Materials</b> For each student: crayon, Activity Sheet <i>Multiplication Table</i>  <b>REINFORCE</b> Problems 4–9 <b>EXTEND</b> Challenge  <b>Materials</b> For each pair: ruler, Activity Sheet <i>Multiplication Table</i>   <b>i-Ready</b> Personalized Instruction 
<b>Lesson 12 Quiz</b>  or <b>Digital Comprehension Check</b>		<b>RETEACH</b> Tools for Instruction  <b>REINFORCE</b> Math Center Activity  <b>EXTEND</b> Enrichment Activity 

**Prepare** students for the lesson content with *Interactive Tutorials*.

**Reinforce** understanding with *Fluency & Skills Practice*, *Apply It* problems, and differentiated *Math Center Activities*. *Hands-On Activities* and *Visual Models* may also be useful in reinforcing mathematical concepts.

**Reteach** mathematical concepts using *Hands-On Activities* and *Visual Models*. Tools for Instruction also provide targeted skills instruction.

**Extend** mathematical concepts with *Deepen Understanding*, *Challenge Activities*, and *Enrichment Activities*.

**Optional Add-On: Personalized Instruction** resources provide students with opportunities to strengthen grade-level skills by working on their personalized path.

The **Lesson Quiz** or **Digital Comprehension Check** assesses students' progress toward mastery of lesson content and is a way to identify where reteaching is needed.

# TEACHER'S GUIDE **Overview** *continued*

**Purpose** provides a roadmap of what students will be learning and doing across the session.

**Start** establishes a clear and accessible entry point for each session, engaging students mathematically with prerequisite content. It frequently is an opportunity to have students engage in a math talk.

**Develop Academic Language** provides language support for all students and is especially useful in helping EL students use and produce academic language.

**Support Partner Discussion** provides teachers with prompts to help students engage in meaningful peer discourse.

**Make Sense of the Problem** uses a language routine to help students understand the problem. See the Language Routines section on the Teacher Toolbox (under the Program Implementation tab) for suggestions on how to integrate language routines, teacher moves, and conversation tips during instruction.

LESSON 12 | SESSION 2 ■ ■ ■ ■

## Develop

- Purpose**
- **Develop** strategies for solving division problems.
  - **Recognize** that a fact family uses the same 3 numbers to make related multiplication and division facts.

### START CONNECT TO PRIOR KNOWLEDGE

#### Always, Sometimes, Never

- A Multiples of 5 end in 1.
- B Multiples of 9 are even.
- C Multiples of 2 end in 0, 2, 4, 6, or 8.
- D The product of a number and 1 is that same number.

#### Solutions

- A is never true.
- B is sometimes true.
- C is always true.
- D is always true.

**WHY?** Support students' facility with multiplication facts.

### DEVELOP ACADEMIC LANGUAGE

- WHY?** Support students as they justify their strategies and solutions.
- HOW?** During Discuss It, ask students to rate their confidence in the strategy they used for Try It. Prompt students to tell how sure they are about their ideas and strategies and explain why.
- *I think my idea is correct because* \_\_\_\_.
  - *I believe this strategy works because* \_\_\_\_.

### TRY IT

SMP 1, 2, 4, 5, 6

#### Make Sense of the Problem

See **Connect to Culture** to support student engagement. Before students work on Try It, use **Notice and Wonder** to help them make sense of the problem. Have students respond to the question, *What do you notice?* Record as many responses as time or interest allows making only encouraging comments.

255

#### Common Misconception

identifies misconceptions that lead to errors in understanding, which can then be addressed in whole class discussion as students are prompted to explain their reasoning.

LESSON 12

SESSION 2 ● ● ● ●

## Develop Working with Division Facts

Read and try to solve the problem below.

Aki wants to make 5 sled dog teams. There are 40 sled dogs, and the teams must have the same number of dogs. She wants to find how many sled dogs to put on each team. Aki writes:

$$40 \div 5 = \square$$

How many sled dogs should Aki put on each team?



### TRY IT

Possible student work:

#### Sample A

- $5 \times 1 = 5$
- $5 \times 2 = 10$
- $5 \times 3 = 15$
- $5 \times 4 = 20$
- $5 \times 5 = 25$
- $5 \times 6 = 30$
- $5 \times 7 = 35$
- $5 \times 8 = 40$

#### Fact Family

- $5 \times 8 = 40$
- $8 \times 5 = 40$
- $40 \div 5 = 8$
- $40 \div 8 = 5$

Aki should put 8 sled dogs on each team.

#### Sample B

- 5, 10, 15, 20, 25, 30, 35, 40
- 1 2 3 4 5 6 7 8

8 sled dogs



#### Math Toolkit

- counters
- buttons
- cups
- 1-centimeter grid paper
- multiplication models
- number lines

### DISCUSS IT

Ask your partner: Why did you choose this strategy?  
Tell your partner: I started by ...

255

### DISCUSS IT

SMP 2, 3, 6, 7

#### Support Partner Discussion

Encourage students to use the terms *equal groups* and *quotient* as they discuss. Support as needed with questions such as:

- *What did you notice about your partner's strategy that is different than yours?*
- *Is there another way of looking at that?*
- *How could you use a fact family to find the number of sled dogs Aki needs?*

**Common Misconception** Look for students who try to multiply  $40 \times 5$  instead of dividing or using the multiplication facts  $5 \times 8 = 40$  or  $8 \times 5 = 40$ . Ask students to explain their reasoning as to whether the answer will be greater than or less than 40.

#### Select and Sequence Student Strategies

One possible order for whole class discussion:

- drawing or modeling equal groups
- drawing a number line to skip-count
- skip-counting by fives without a model
- using a fact from the related fact family

#### Select and Sequence Student Solutions

gives a range of possible strategies—from concrete to representational to abstract—for use in monitoring student work and facilitating discourse. This information can be used to make decisions about which models and strategies to share and discuss as a class.

Facilitate Whole Class Discussion

Call on students to share selected strategies. Prompt students to tell how sure they are about their ideas and explain why. Guide students to **Compare and Connect** the representations. After each strategy, allow individual think time for students to process the ideas.

**ASK** Where does each model show the total number of dogs? The number of teams she wants to put together? The number of sled dogs to put on each team?

**LISTEN FOR** Students should recognize that accurate representations show that the total, 40, is divided by 5 into 8 equal groups. Responses may include an equal-groups model, array, number line, skip-counting, and/or a fact family.

Model It

If no student presented these models, have students analyze key features and then point out the ways each model represents:

- the total number of dogs there are
- the number of sled dog teams Aki wants
- the number of dogs on each team
- either division or multiplication

**ASK** What number tells the number of equal groups in the number line? In the fact family? What does that number represent?

**LISTEN FOR** 8 is the number of jumps or equal groups in the number line and the fact family. It represents the number of dogs on each team.

For a number line model, prompt students to identify the ending number on the number line and the length of the jumps used.

- How is the number line set up?
- Why is each jump by 5?
- Why is the number of jumps counted?

For a fact family, prompt students to identify how knowing their multiplication facts can help them complete a fact family.

- How does knowing the multiplication facts for 5 help you to complete the fact family?
- What other multiplication facts could you use to help you complete the fact family?

LESSON 12 DEVELOP

Explore different ways to find the unknown number in a division fact.

Aki wants to make 5 sled dog teams. There are 40 sled dogs, and the teams must have the same number of dogs. She wants to find how many sled dogs to put on each team. Aki writes:

40 ÷ 5 = □

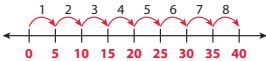
How many sled dogs should Aki put on each team?



MODEL IT

You can use a number line to help you understand the problem.

Skip-count by fives to find the answer. Start at 0 and jump by fives until you get to 40.



MODEL IT

You can use fact families and multiplication facts you know.

Here are the facts in this family:

5 × 8 = 40    8 × 5 = 40    40 ÷ 8 = 5    40 ÷ 5 = 8

Write the multiplication facts for 5:

1 × 5 = 5    2 × 5 = 10    3 × 5 = 15    4 × 5 = 20    5 × 5 = 25  
6 × 5 = 30    7 × 5 = 35    8 × 5 = 40    9 × 5 = 45    10 × 5 = 50

Look for the fact that has the numbers you know from the fact family, 5 and 40. Use that fact to fill in the unknown numbers above.

256

DIFFERENTIATION | EXTEND



Deepen Understanding

Relate Multiplication and Division Facts

SMP 2

To support discussion of the fact family model, prompt students to consider the relationship between the numbers in a fact family.

Have students discuss how to know which fact family works for this problem. Write the equation □ × 5 = 40 on the board.

**ASK** Where did this equation come from?

**LISTEN FOR** The missing number tells how many times you add 5 to get to 40. It uses the same numbers as the equation in the problem, 40 ÷ 5 = □.

Write the equation 5 × □ = 40 on the board.

**ASK** Where did this equation come from?

**LISTEN FOR** It is the same as □ × 5 = 40, with the order of the factors switched.

**Generalize** Prompt students to see that you can write related multiplication facts for a division problem using the same numbers as the division facts. Both the division and multiplication facts tell the number of equal groups.

**Ask/Listen for** are mathematical discourse questions followed by expected student responses that support and facilitate whole class discussion.

As students share their thinking, the discourse questions can be used to make connections between student approaches and different models and representations, prompt justifications and critiques of approaches and solutions, and check conceptual understanding.

**Standards for Mathematical Practice (SMP)** are infused throughout the instructional model.

**Deepen Understanding** is a consistent opportunity to build conceptual understanding of a key lesson concept by extending mathematical discourse. The content connects a particular aspect of lesson learning to an SMP, showing how it looks in the classroom.

# TEACHER'S GUIDE Overview *continued*

## Monitor and Confirm Understanding

is a way to ensure that students have made sense of mathematical learning goals.

## Facilitate Whole Class Discussion

provides a series of related discourse questions that illuminate the mathematical ideas of the lesson, prompting students to make connections and use that understanding to solve problems leading to abstract reasoning. These questions help students learn how to articulate a generalization of the mathematical concept.

## Hands-On Activities

occur consistently at strategic points in the lesson after teachers have acquired understanding of students' learning through observation and their work on questions in the Student Worktext. The activities support students who are unsure of the concept and are an opportunity for small group reteaching while other students work independently. Use of concrete objects lets students access understanding in a different way.

LESSON 12 | SESSION 2 ■ ■ ■ ■

## Develop

### CONNECT IT

SMP 2, 4, 5, 7

- Remind students that one thing that is alike about all the representations is the numbers.
- Explain that on this page, students will use fact families to complete a division fact with an unknown in any position.

### Monitor and Confirm Understanding

- Check for understanding that:
  - the other division fact in the same family includes 45, 5, and  $\square$ , but 5 and  $\square$  switch places
  - multiplication facts in the same family include 45, 5, and  $\square$ , but the factors 5 and  $\square$  change order

### Facilitate Whole Class Discussion

- Tell students that this problem will prepare them to provide the explanation required in problem 4.

Be sure students understand that the problem is asking them to select a multiplication fact from the table of multiplication facts for 5 in the second Model It on the previous page.

**ASK** How do you know which numbers to look for in the multiplication facts table?

**LISTEN FOR** A fact family uses the same three numbers in four related multiplication and division facts. So, a related multiplication fact will include 5 and 30. Only  $6 \times 5 = 30$  includes 5 and 30.

- Look for the idea that you need a fact in the same fact family, so the multiplication fact must use the same numbers as the division fact.

- Reflect** Have all students focus on the strategies used to solve this problem. If time allows, have students share their preferences with a partner.

SESSION 2 ■ ■ ■ ■

### CONNECT IT

Now you will use the problem from the previous page to help you understand how to use fact families to find an unknown number in a division fact.

- Clay wants to know how many sled dogs to put on each team if he uses 30 sled dogs to make 5 teams. He writes  $30 \div \square = 5$ . What other division fact can he write to model this problem?  
 $30 \div 5 = \square$
- Write the two multiplication facts that are in the same fact family as Clay's division fact in problem 1. Use  $\square$  for the unknown number.  
 $5 \times \square = 30$  and  $\square \times 5 = 30$
- Look at the list of multiplication facts for 5 on the previous page. Which fact will help Clay answer his division problem? How many sled dogs should Clay put on each team?  
 $6 \times 5 = 30$ ; Clay should put 6 sled dogs on each team.
- Explain how you know which multiplication fact you can use to help you find the unknown number in a division fact.  
**Possible answer:** You need to find a multiplication fact that has the same numbers that are given in the division problem.

### REFLECT

Look back at your **Try It**, strategies by classmates, and **Model Its**. Which models or strategies do you like best for finding unknown numbers in multiplication and division facts? Explain.

**Some students may like skip-counting because they are comfortable with it and can do it quickly. Others may prefer using fact families because they know their multiplication facts and can easily find the missing third number in a fact.**

257

### DIFFERENTIATION | EXTEND



#### Hands-On Activity

#### Make fact triangle cards.

If students have trouble writing the division facts of a fact family, then use this activity to give a more concrete experience and practice writing division facts.

**Materials** For each pair: 10 triangles from Activity Sheet *Multiplication Triangles*

- Have students write out the multiplication facts for 6 (or other facts you wish students to practice). Instruct them to circle the three numbers in each equation.
- Ask each pair to make a set of 10 triangle fact cards, one for each fact. For each card, have the students write the product in the top corner of the triangle and one of the factors in one of the other triangle corners.
- Have students practice their division facts by going through the cards, naming the missing factor, and then stating the related division fact with the missing factor, now the quotient of the division fact. The missing factor can be written on the back of each card.
- Repeat with facts for other numbers as time allows.

257

Lesson 12 Multiplication and Division Facts

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**Apply It** solutions at point of use give a correct response with explanations that include multiple approaches to solving the problem.

### Apply It

For all problems, encourage students to draw some kind of model to support their thinking.

- 6 6; See possible student work on the Student Worktext page.
- 7  $2 \times 3 = 6$ ;  $3 \times 2 = 6$ ;  
 $6 \div 2 = 3$ ;  $6 \div 3 = 2$   
The last three facts may be written in any order.

### CLOSE EXIT TICKET

- 8  $7 \times 3 = 21$ ;  $3 \times 7 = 21$   
Facts may be written in any order.  
Students' solutions should indicate understanding of:
- how to write related multiplication and division facts from the same fact family
  - how multiplication facts can be used to solve a division problem
- Error Alert** If students write multiplication facts that include 3 or 7 but are not in the same fact family, **then** have them make a multiplication facts for 3 table and then select the multiplication fact that includes both numbers used in the division problem.

LESSON 12 DEVELOP

SESSION 2 ● ● ● ●

### APPLY IT

Use what you just learned to solve these problems.

- 6 Use the number line to solve  $24 \div 4 = \square$ .  
Show your work.

Possible student work:



Solution  $24 \div 4 = 6$

- 7 Write the unknown product. Then complete this fact family.  
 $2 \times 3 = \underline{\quad 6 \quad}$   
 $\underline{3} \times \underline{2} = \underline{6}$   
 $\underline{6} \div \underline{2} = \underline{3}$   
 $\underline{6} \div \underline{3} = \underline{2}$
- 8 Write two multiplication facts Enrico can use to solve  $\square \div 3 = 7$ .  
 $7 \times 3 = 21$  and  $3 \times 7 = 21$

258

**Close: Exit Ticket** is a quick formative assessment of each day's learning and serves as an indicator of students' progress toward mastery or partial mastery of the learning goal of the session.

*This is the last question on the Student Worktext page.*

**Error Alert** gives insight into misconceptions that can lead to errors in calculation and provides on-the-spot remediation.

# TEACHER'S GUIDE **Overview** *continued*

**Additional Practice** can be used as in-class small group work, after class work, or at-home learning.

**Solutions** are labeled as *Basic*, *Medium*, and *Challenge* to show the relative difficulty level in relation to the questions at hand or the standard in question. Use these to support independent practice or differentiation as needed.

**Fluency & Skills Practice** provides ongoing opportunities for students to accurately, flexibly, and efficiently practice mathematical procedures and operations. This can be used as in-class small group work, after-class work, or at-home learning. Student pages are available in the optional Fluency and Skills Practice Book or on Teacher Toolbox. Download PDFs or editable versions, or assign to any LMS, including Google Classroom.

## LESSON 12 | SESSION 2 ■ ■ ■

### Additional Practice

#### Problem Notes

Assign **Practice Working with Division Facts** as extra practice in class or as homework.

- 1  $3 \times 5 = 15$  or  $5 \times 3 = 15$ ; 15 fish  
**Basic**
- 2  $15 \div 3 = 5$ ; 5 fish  
**Basic**
- 3  $15 \div 5 = 3$ ; 3 rows  
**Basic**
- 4  $4 \times 9 = 36$ ;  
 $9 \times 4 = 36$ ;  
 $36 \div 4 = 9$ ;  
 $36 \div 9 = 4$   
Pairs of equations may be written in any order.  
**Medium**

Name: \_\_\_\_\_

LESSON 12 SESSION 2

### Practice Working with Division Facts

Study the **Example** showing how a picture can help you understand division facts. Then solve problems 1–3.

#### EXAMPLE

Neena uses stickers to make an array of 15 fish. Write the whole fact family that describes Neena's array.

There are 3 rows with 5 fish in each row.

The fact family describes Neena's array in different ways.

$$\begin{array}{l} 3 \times 5 = 15 \quad 15 \div 5 = 3 \\ 5 \times 3 = 15 \quad 15 \div 3 = 5 \end{array}$$



Write one of the facts from the list above that can help you solve problems 1–3.

- 1 How many fish are there altogether?  
 $3 \times 5 = 15$  or  $5 \times 3 = 15$ ; 15 fish
- 2 15 fish swim in 3 equal rows. How many fish are in each row?  
 $15 \div 3 = 5$ ; 5 fish
- 3 15 fish swim in rows of 5 fish. How many rows of fish are there?  
 $15 \div 5 = 3$ ; 3 rows
- 4 You know that  $4 \times 9 = 36$ . Write the whole fact family. Use the numbers 4, 9, and 36.

$$\begin{array}{l} 4 \times 9 = 36 \\ 9 \times 4 = 36 \\ 36 \div 4 = 9 \\ 36 \div 9 = 4 \end{array}$$

259

### Fluency & Skills Practice

#### Assign Working with Division Facts

In this activity students practice solving division facts. Students will use division anytime they need to split a quantity into equal groups. Such situations could include sharing a group of marbles equally among friends, determining how many pages they need to read each night to finish a book, or cutting a length of ribbon into a certain number of pieces all the same length.

FLUENCY AND SKILLS PRACTICE | LESSON 12

Working with Division Facts

The answers are listed at the bottom of the page. Cross out the answers as you complete the problems.

1 $40 \div 4 =$	2 $18 \div 3 =$	3 $24 \div 6 =$
4 $24 \div 8 =$	5 $16 \div 2 =$	6 $40 \div 8 =$
7 $45 \div 7 =$	8 $48 \div 8 =$	9 $18 \div 9 =$
10 $36 \div 8 =$	11 $27 \div 9 =$	12 $18 \div 7 =$
13 $72 \div 8 =$	14 $40 \div 9 =$	15 $14 \div 9 =$
16 $48 \div 8 =$	17 $40 \div 7 =$	18 $27 \div 3 =$

Answers:

4	4	9	6	7	10
5	10	3	3	6	7
6	6	6	7	6	9

#### Learning Games



Match



Pizza

#### Interactive Practice

Assign your students additional digital practice, as needed.

#### Cumulative Practice

Assign Cumulative Practice to review major content from previous units, as needed.

#### i-Ready Personalized Instruction

A personalized instruction path helps students reinforce prerequisites and build grade-level skills.

**Additional Practice Opportunities** include digital Learning Games, Interactive Practice, Cumulative Practice, and i-Ready Personalized Instruction.

259

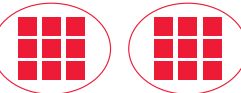
Lesson 12 Multiplication and Division Facts

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- 5 C;  $18 \div 2 = 9$   
**Medium**
- 6  $18 \div 6 = 3$ ;  $18 \div 3 = 6$   
Equations may be written in any order.  
**Medium**
- 7 3 friends; See Student Worktext page for possible student work.  
**Medium**
- 8  $24 \div 8 = 3$ ;  $24 \div 3 = 8$   
Equations may be written in any order.  
**Medium**
- 9  $8 \times 3 = 24$ ;  $3 \times 8 = 24$   
Equations may be written in any order.  
**Medium**

LESSON 12 SESSION 2

- 5 Anwar draws 18 squares in two equal groups of 9. Which division equation does his drawing show?  
 (A)  $9 \div 3 = 3$   
 (B)  $18 \div 6 = 3$   
 (C)  $18 \div 2 = 9$   
 (D)  $6 \div 2 = 3$

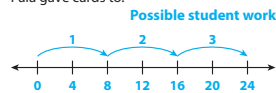


- 6 Write two different division equations about the array.
- $18 \div 6 = 3$   
 $18 \div 3 = 6$



Pala has 24 trading cards. He gives away all his cards to friends. He gives 8 cards to each friend. Use this information to solve problems 7–9.

- 7 Use the number line to show how you can find how many friends Pala gave cards to.



**Solution** Pala gave cards to 3 friends.

- 8 Write two different division facts for the story.

$24 \div 8 = 3$  and  $24 \div 3 = 8$

- 9 Write the multiplication facts that belong to the same fact family.

$8 \times 3 = 24$  and  $3 \times 8 = 24$

260

DIFFERENTIATION | ENGLISH LEARNERS

Use with Session 3 Apply It

Levels 1–3: Listening/Speaking

Read aloud Apply It problem 8. Ask: *What information do you have? What do you need to find out?* Have students turn and talk.

- The total is \_\_\_\_.
- There are \_\_\_\_ groups.
- I need to find \_\_\_\_.

Then ask: *What equations do you see that use the information you have?* Encourage partners to point to the correct equations. Have them explain why those equations work by using drawings or models and words/phrases in English or their home language. Provide sentence frames to help them describe the equations:

- This equation shows \_\_\_\_.

Levels 2–4: Listening/Speaking

Read Apply It problem 8 chorally with students. Ask: *What information do you have? What do you need to find out?* Have students turn and talk.

- I know there are \_\_\_\_ and \_\_\_\_.
- I need to find \_\_\_\_.

Then ask: *What equations do you see that use the information you have?* Encourage partners to point to the correct equations. Have them explain why those equations work by using drawings or models and words/phrases in English. Then have them explain the equations that do not work. Provide sentence frames:

- This equation works because \_\_\_\_.
- This equation does not work because \_\_\_\_.

Levels 3–5: Listening/Speaking

Have students read Apply It problem 8 with a partner. Ask: *What information do you have? What do you need to find out?* Have partners discuss. Encourage them to discuss what they know about the total number of items, the number of groups and the number in each group. Then ask: *What equations do you see that use the information you have?* Have partners discuss and explain why those equations work. Then have them explain the equations that do not work. Remind students to use *because* or *so* when providing explanations for their ideas. Then have partners share with another pair. Encourage pairs to ask clarifying questions and to compare their ideas.

**DIFFERENTIATION | ENGLISH LEARNERS** helps teachers scaffold or amplify language in the next session so English learners can access and engage with grade-level mathematics.