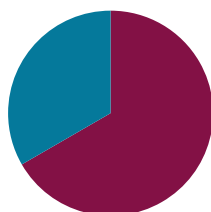# Lesson 33

## Objective: Solidify fluency with Grade 3 skills.

### Suggested Lesson Structure

■ Fluency Practice          (50 minutes)
■ Student Debrief          (10 minutes)
   **Total Time**          **(60 minutes)**

### Fluency Practice  (50 minutes)

- Sprint: Mixed Division  **3.OA.7**          (10 minutes)
- Multiply  **3.OA.7**          (3 minutes)
- Mixed Review Games          (37 minutes)

### Sprint:  Mixed Division  (10 minutes)

Materials:   (S) Mixed Division Sprint

Note:  This Sprint focuses on student mastery of all quotients within 100.

### Multiply  (3 minutes)

Materials:   (S) Personal white board

Note:  This activity focuses on student mastery of all products of two one-digit numbers.

   T:   (Write 4 × 2 = ____.)  Say the multiplication sentence.
   S:   4 × 2 = 8.

Continue with the following possible sequence:  3 × 4,
4 × 4, and 5 × 6.

   T:   (Write 7 × 6 = ____.)  Write the answer.
   S:   (Write 42.)

Continue with the following possible sequence:  8 × 7 and 9 × 6.

   T:   (Write 3 × 2 = ____.)  Say the multiplication sentence.
   S:   3 × 2 = 6.
   T:   Flip the factors, and say it.
   S:   2 × 3 = 6.

Continue with the following possible sequence:  6 × 3, 7 × 5, 7 × 6, and 9 × 8.

> **NOTES ON**
> **MULTIPLE MEANS**
> **OF REPRESENTATION:**
>
> Clarify the expression "flip the factors" for English language learners and others.  Explain that students are to switch the placement of the factors in the multiplication sentence.  It may be helpful to give an example.

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## Mixed Review Games  (37 minutes)

Materials:   (S) Fluency game materials (listed with each activity and included at the end of the lesson), Problem Set

For the rest of today's lesson, students review and play fluency games from Grade 3.  They play in pairs, alternating the role of teacher.  Students might periodically move around the room selecting different partners or stay in the same grouping for the duration of this practice.  Choose a few ideas from the suggested games, and let students choose which ones to play, or select other fluency activity favorites based on the needs and interests of the class.

Students should have their Problem Sets with them as they play the fluency games and use them to keep a list of their favorite activities.  They reference the list in Lesson 34 when recording the directions for their favorites in a summer practice booklet.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> These are games that students can play with family members to maintain skills over the summer.  It may be appropriate to invite parents and siblings to learn and participate.  This might be done at a math or parents' night.  Students may consider who their game partners might be at home and make adjustments accordingly.  For example, if played with a younger or an older sibling, games may include math appropriate for siblings.  Discuss with students how to best adapt the games for their personal summer experiences.

## Student Debrief  (10 minutes)

**Lesson Objective:**  Solidify fluency with Grade 3 skills.

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.

Any combination of the questions below may be used to lead the discussion.

- What is something you did today that you could not do before you came to the third grade?
- Are there any activities that were still a little challenging?  What might you do to get better?
- Which of these games might be fun to play over the summer so you can keep your math skills sharp?  Who will you teach to play with you?

## Exit Ticket  (3 minutes)

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.

# A

Number Correct: _____

Mixed Division

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | 4 ÷ 2 = | | 23. | 16 ÷ 8 = | |
| 2. | 6 ÷ 2 = | | 24. | 40 ÷ 8 = | |
| 3. | 10 ÷ 2 = | | 25. | 32 ÷ 8 = | |
| 4. | 20 ÷ 2 = | | 26. | 56 ÷ 8 = | |
| 5. | 10 ÷ 5 = | | 27. | 18 ÷ 9 = | |
| 6. | 15 ÷ 5 = | | 28. | 45 ÷ 9 = | |
| 7. | 25 ÷ 5 = | | 29. | 36 ÷ 9 = | |
| 8. | 20 ÷ 5 = | | 30. | 63 ÷ 9 = | |
| 9. | 8 ÷ 4 = | | 31. | 64 ÷ 8 = | |
| 10. | 12 ÷ 4 = | | 32. | 48 ÷ 8 = | |
| 11. | 20 ÷ 4 = | | 33. | 81 ÷ 9 = | |
| 12. | 16 ÷ 4 = | | 34. | 54 ÷ 9 = | |
| 13. | 6 ÷ 3 = | | 35. | 24 ÷ 6 = | |
| 14. | 9 ÷ 3 = | | 36. | 16 ÷ 2 = | |
| 15. | 15 ÷ 3 = | | 37. | 28 ÷ 7 = | |
| 16. | 12 ÷ 3 = | | 38. | 27 ÷ 3 = | |
| 17. | 60 ÷ 6 = | | 39. | 24 ÷ 8 = | |
| 18. | 12 ÷ 6 = | | 40. | 32 ÷ 4 = | |
| 19. | 18 ÷ 6 = | | 41. | 27 ÷ 9 = | |
| 20. | 35 ÷ 7 = | | 42. | 72 ÷ 9 = | |
| 21. | 14 ÷ 7 = | | 43. | 56 ÷ 7 = | |
| 22. | 21 ÷ 7 = | | 44. | 72 ÷ 8 = | |

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# B

**Number Correct:** _____

**Improvement:** _____

Mixed Division

| #   | Problem    |     | #   | Problem    |     |
|-----|------------|-----|-----|------------|-----|
| 1.  | 10 ÷ 5 =   |     | 23. | 18 ÷ 9 =   |     |
| 2.  | 15 ÷ 5 =   |     | 24. | 45 ÷ 9 =   |     |
| 3.  | 25 ÷ 5 =   |     | 25. | 27 ÷ 9 =   |     |
| 4.  | 50 ÷ 5 =   |     | 26. | 63 ÷ 9 =   |     |
| 5.  | 4 ÷ 2 =    |     | 27. | 16 ÷ 8 =   |     |
| 6.  | 6 ÷ 2 =    |     | 28. | 40 ÷ 8 =   |     |
| 7.  | 10 ÷ 2 =   |     | 29. | 24 ÷ 8 =   |     |
| 8.  | 8 ÷ 2 =    |     | 30. | 56 ÷ 8 =   |     |
| 9.  | 6 ÷ 3 =    |     | 31. | 81 ÷ 9 =   |     |
| 10. | 9 ÷ 3 =    |     | 32. | 54 ÷ 9 =   |     |
| 11. | 15 ÷ 3 =   |     | 33. | 64 ÷ 8 =   |     |
| 12. | 12 ÷ 3 =   |     | 34. | 48 ÷ 8 =   |     |
| 13. | 8 ÷ 4 =    |     | 35. | 30 ÷ 6 =   |     |
| 14. | 12 ÷ 4 =   |     | 36. | 18 ÷ 2 =   |     |
| 15. | 20 ÷ 4 =   |     | 37. | 35 ÷ 7 =   |     |
| 16. | 16 ÷ 4 =   |     | 38. | 24 ÷ 3 =   |     |
| 17. | 70 ÷ 7 =   |     | 39. | 32 ÷ 8 =   |     |
| 18. | 14 ÷ 7 =   |     | 40. | 36 ÷ 4 =   |     |
| 19. | 21 ÷ 7 =   |     | 41. | 45 ÷ 9 =   |     |
| 20. | 30 ÷ 6 =   |     | 42. | 72 ÷ 8 =   |     |
| 21. | 12 ÷ 6 =   |     | 43. | 49 ÷ 7 =   |     |
| 22. | 18 ÷ 6 =   |     | 44. | 72 ÷ 9 =   |     |

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Name _____     Date _____

List some games we played today in the chart below.  Place a check mark in the box that shows how you felt about your level of fluency as you played each activity.  Check off the last column if you would like to practice this activity over the summer.

| Activity | I still need some practice with my facts. | I am fluent. | I would like to put this in my summer activity book. |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |

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Name _____     Date _____

What fluency activity helped you the most in becoming fluent with your multiplication and division facts this year?  Write three or four sentences to explain what made it so useful.

Name _____ Date _____

Teach a family member your favorite fluency game from class.  Record information about the game you taught below.

Name of the game:  _____

_____

Materials used:  _____

_____

Name of the person you taught to play:  _____

Describe what it was like to teach the game.  Was it easy?  Hard?  Why? _____

_____

_____

_____

Will you play the game together again?  Why or why not?  _____

_____

_____

Was the game as fun to play at home as in class?  Why or why not? _____

_____

_____

## Multiplication

Materials: (S) Personal white board

T: (Draw an array with 3 rows of 2.) Say the repeated addition sentence.
S: 2 + 2 + 2 = 6.
T: (Write 3 × ____ = ____.) On your personal white board, complete the multiplication sentence.
S: (Write 3 × 2 = 6.)

Repeat using the following ideas: 4 rows of 10, 3 rows of 4, 7 rows of 3, and 8 rows of 2. Or you can think of your own.

## Equal Groups

Materials: (S) Personal white board

T: (Draw a picture with 2 groups of 4 circled.) Say the total as a repeated addition sentence.
S: 4 + 4 = 8.
T: Write a division sentence that means the number of groups is unknown.
S: (Write 8 ÷ 4 = 2.)
T: Below that division sentence, write a division sentence that means the number in each group is unknown.
S: (Write 8 ÷ 2 = 4.)

Repeat using the following ideas: 5 groups of 3, 3 groups of 4, and 6 groups of 2. Or you can think of your own.

## Commutative Multiplying

Materials: (S) Personal white board

T: (Draw an array with 3 rows of 2 dots.) How many rows of 2 do you see?
S: 3 rows of 2.
T: Write four different multiplication sentences for the picture.
S: (Write 3 × 2 = 6, 2 × 3 = 6, 6 = 3 × 2, and 6 = 2 × 3.)

Repeat using the following ideas: 3 rows of 5 and 4 rows of 3. Or you can think of your own.

T: (Write 4 × 2 = 2 × ___.) On your personal white board, fill in the blank.
S: (Write 4 × 2 = 2 × 4.)

Repeat using the following ideas: 9 × 5 = 5 × ___ and 3 × 6 = 6 × ___. Or you can think of your own.

## Tape Diagrams

Materials: (S) Personal white board

T: (Draw a tape diagram with 5 equal units and 2 stars in the first unit.) What is the value of each unit?
S: 2 stars.
T: How many units are there?
S: 5 units.
T: Write a multiplication sentence for this tape diagram.
S: (Write 5 × 2 = 10.)

Repeat using the following ideas:
4 × 3 = 12, 8 ÷ 4 = 2, and 15 ÷ 3 = 5. Or you can think of your own.

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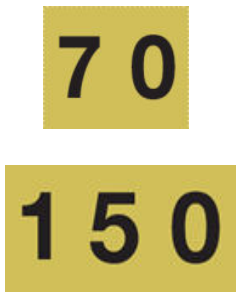
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## Tens

Materials:   (S) Place value cards, personal white board

Note:  Place value cards can be made with index cards for personal practice.

T:   (Write 7 tens = _____.)  Say the number.

S:   70.

Repeat using the following ideas:  10 tens, 12 tens, 20 tens, 28 tens, 30 tens, and 37 tens.  Or you can think of your own.

**7 0**

**1 5 0**

**Place value cards**

## Tens and Hundreds

Materials:   (S) Personal white board

T:   (Write 9 + __ = 10.)  Say the missing number.

S:   1.

T:   (Write 90 + __ = 100.)  Say the missing number.

S:   10.

T:   (Write 91 + __ = 100.)  Say the missing number.

S:   9.

T:   (Write 291 + __ = 300.)  Say the missing number.

S:   9.

Repeat using the following ideas:

1 + __ = 10, 10 + __ = 100, 11 + __ = 100, 211 + __ = 300, 8 + __ = 10, 80 + __ = 100, 85 + __ = 100, and 385 + __ = 400.

Or you can think of your own.

## Make Twenty-Four Game

Materials:   (S) Set of 6 cards per pair

Note:  Students play in pairs.  Each pair has a set of 6 cards, each with a number (2, 3, 4, 6, 8, and 12).

T:   (Write ___ × ___ = 24.)  Spread the cards out in front of you.

T:   Put your hands behind your back.  I'll put a number in the first blank.  When you know the number that belongs in the second blank, touch the card that shows the number.  The first one of us to touch the card keeps it.  Whoever has the most cards at the end wins. (Write 12 in the first blank.)

S:   (Touch the 2 card.  The first to touch it keeps the card.)

Repeat.  This time, however, you might make 36 with the same cards plus 9 and 18.

## Write in the Parentheses

Materials:   (S) Personal white board

T:   (Write 10 – 5 + 3 = 8.)  On your personal white board, copy the equation.  Then, insert parentheses to make the statement true.

S:   (Write (10 – 5) + 3 = 8.)

Repeat using the following ideas:
10 – 5 + 3 = 2, 10 = 20 – 7 + 3, 16 = 20 – 7 + 3, 8 + 2 × 4 = 16, 8 + 2 × 4 = 40, 12 = 12 ÷ 2 × 2, 3 = 12 ÷ 2 × 2, 10 = 35 – 5 × 5, and 20 – 10 ÷ 5 = 2.

Or you can think of your own.

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### Round Three- and Four-Digit Numbers

Materials:   (S) Personal white board

T:   (Write 87 ≈ _____.)  What is 87 rounded to the nearest ten?

S:   90.

Repeat using the following ideas:  97, 43, 643, 35, and 835.  Or you can think of your own.

T:   (Write 253 ≈ _____.)  What is 253 rounded to the nearest hundred?

S:   300.

Repeat using the following ideas:  1,253, 735, 1,735, 850, 1,850, 952, 1,371, and 1,450.  Or you can think of your own.

### Partition Shapes

Materials:   (S) Personal white board

T:   Draw a square.

S:   (Draw a square.)

T:   (Write $\frac{1}{2}$.)  Estimate to equally partition the square into halves.

S:   (Partition.)

Repeat using the following ideas:  line $\frac{1}{5}$, circle $\frac{1}{4}$, circle $\frac{1}{8}$, bar $\frac{1}{10}$, and bar $\frac{1}{6}$.

Or you can think of your own.

### Write the Unit Fraction

Materials:   (S) Personal white board

T:   (Draw a shape with $\frac{1}{2}$ shaded.)  Write the unit fraction.

S:   (Write $\frac{1}{2}$.)

Repeat using the following ideas:  $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{6}$, $\frac{1}{10}$, and $\frac{1}{5}$.

Or you can think of your own.

### Greater or Less Than 1?

T:   (Write $\frac{1}{2}$.)  Greater or less than 1?

S:   Less!

Repeat using the following ideas:  $\frac{3}{2}$, $\frac{5}{4}$, $\frac{3}{4}$, $\frac{3}{7}$, $\frac{5}{3}$, and $\frac{5}{2}$.

Or you can think of your own.

### Draw Fractions from Part to Whole

Materials:   (S) Personal white board

T:   Draw 1 unit on your personal white board.

S:   (Draw 1 unit.)

T:   Label the unit $\frac{1}{3}$.  Now, draw the whole that goes with your unit of $\frac{1}{3}$.

Repeat using the following ideas:  $\frac{1}{5}$, $\frac{1}{6}$, $\frac{1}{4}$, and $\frac{1}{2}$.

Or you can think of your own.

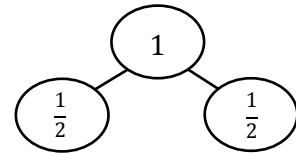### Draw Number Bonds of One

Materials:   (S) Personal white board

T:   Draw a number bond to partition one into halves.

S:   (Draw.)

T:   How many copies of 1 half did you draw to make one?

S:   2 copies.

Repeat using the following ideas:  thirds, fourths, fifths, sixths, sevenths, etc.  Or you can think of your own.

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