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| **Grade 3 Module 1: Properties of Multiplication and Division and Solving Problems with Units of 2-5 and 10** | | | |
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TEKS Grade 3 Module 1 Fluencies

Lesson 1

Fluency Practice (5 minutes)

⬛ Group Counting 3.4E (5 minutes)

**Group Counting (5 minutes)**

Note: Basic skip-counting skills from Grade 2 shift focus in this

Grade 3 activity. Group counting lays a foundation for

interpreting multiplication as repeated addition. When

students count groups in this activity, they add and subtract

groups of 2 when counting up and down.

T: Let’s count to 20 forward and backward. Watch my

fingers to know whether to count up or down. A

closed hand means stop. (Show signals during the

explanation.)

T: (Rhythmically point up until a change is desired. Show a closed hand; then point down.)

S: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9,

8, 7, 6, 5, 4, 3, 2, 1, 0.

T: Let’s count to 20 forward and backward again. This time whisper every other number. Say the other

numbers in a regular voice.

S: (Whisper) 1, (speak) 2, (whisper) 3, (speak) 4, (whisper) 5, (speak) 6, etc.

T: Let’s count to 20 forward and backward again. This time, hum every other number instead of

whispering. As you hum, think of the number.

S: (Hum), 2, (hum), 4, (hum), 6, etc.

T: Let’s count to 20 forward and backward again. This time, think every other number instead of

humming.

S: (Think), 2, (think), 4, (think), 6, etc.

T: What did we just count by? Turn and talk to your partner.

S: Twos.

T: Let’s count by twos. (Direct students to count forward to and backward from 20, changing directions

at times.)

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**Lesson 2**

Fluency Practice (15 minutes)

⬛ Sprint: Add or Subtract Using 2 2.4A, 2.4B (9 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Add Equal Groups 3.4D, 3.4E (3 minutes)

**Sprint: Add or Subtract Using 2 (9 minutes)**

Materials: (S) Add or Subtract Using 2 Sprint

Note: This Sprint supports group counting skills that are foundational to interpreting multiplication as

repeated addition.

Directions for Administration of Sprints

A Sprint has two parts, A and B, with closely related problems on each. Each part is organized into four

quadrants that move from simple to complex. This builds a challenge into each Sprint for every learner.

Before the lesson, print Sprint A and Sprint B on two separate sheets of paper. Students complete the two parts of the Sprint in quick succession with the goal of improving for the second part, even if only by one more. With practice, the following routine takes about 9 minutes.

Sprint A

Place Sprint A face down on student desks, and instruct students not to look at the problems until a signal is given.

T: You will have 60 seconds to do as many problems as you can. I do not expect you to finish all of

them, just as many as you can, trying for your personal best.

T: Take your mark! Get set! THINK!

Students turn papers over and work furiously to finish as many problems as they can in 60 seconds. Time

precisely.

T: Stop! Circle the last problem you completed. I will read just the answers. If you got the answer

right, call out “Yes!” If you made a mistake, circle it. Ready?

Repeat to the end of Sprint A or until no student has a correct answer.

T: Now, at the top of the page, write the number of problems you got correct. This is your personal

goal for Sprint B.

T: How many of you got one right? (All hands should go up.)

T: Keep your hand up until I say a number that is one more than the number you got right. So, if you

got 14 right, when I say 15, your hand goes down. Ready?

T: (Continue quickly.) How many got two right? Three? Four? Five? (Continue until all hands are

down.)

If the class needs more practice with Sprint A, continue with the optional routine presented below.

T: Take one minute to do more problems on this half of the Sprint.

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As students work, the student who scored highest on Sprint A might pass out Sprint B.

T: Stop! I will read just the answers. If you got it right, call out “Yes!” If you made a mistake, circle it.

Ready?

Read the answers to the first half again as students stand.

Movement: To keep the energy and fun going, do a stretch or a movement game in between Sprints.

Sprint B

Place Sprint B face down on student desks, and instruct students not to look at the problems until a signal is given. Repeat the procedure for Sprint A up through the show of hands for how many correct answers.

T: Stand up if you got more correct on the second Sprint than on the first.

S: (Stand.)

T: Keep standing until I say the number that tells how many more you got right on Sprint B. If you got

three more right on Sprint B than on Sprint A, when I say three , you sit down. Ready?

Call out numbers, starting with one. Students sit as the number by which they improved is called. Students may take Sprints home.

**Group Counting (3 minutes)**

Note: Basic skip-counting skills from Grade 2 shift focus in this Grade 3 activity. Group counting lays a

foundation for interpreting multiplication as repeated addition. When students count groups in this activity, they add and subtract groups of three when counting up and down.

T: Let’s count to 18 forward and backward. I want you to whisper, whisper, and then speak numbers.

T: Watch my fingers to know whether to count up or down. A closed hand means stop. (Show signals

while explaining.)

T: (Rhythmically point up until a change is desired. Show a closed hand then point down.)

S: (Whisper) 1, (whisper) 2, (speak) 3, etc.

T: Let’s count to 18 forward and backward again. This time, think every number instead of whispering.

S: (Think), (think), 3, (think), (think), 6, (think), (think), 9, etc.

T: What did we just count by? Turn and talk to your partner.

S: Threes.

T: Let’s count by threes. (Direct students to count forward and backward to 18, periodically changing

directions. Emphasize the 9 to 12 transition.)

**Add Equal Groups (3 minutes)**

Materials: (S) Personal white board

Note: This activity reviews Lesson 1. Students directly relate repeated addition to multiplication. They

interpret products as the number of equal groups times the number of objects in each group.

T: (Project a picture array with 3 groups of 2 circled.) How many groups are circled?

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S: 3.

T: How many are in each group?

S: 2.

T: Write this as an addition sentence.

S: (Write 2 + 2 + 2 = 6.)

T: Write a multiplication sentence for 3 twos equals 6.

S: (Write 3 x 2 = 6.)

Continue with this possible sequence: 3 groups of 5, 5 groups of 10, and 3 groups of 4.

**Lesson 3**

Fluency Practice (1S minutes)

⬛ Sprint: Add Equal Groups 3.4E (9 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Add to Multiply 3.4D, 3.4E (3 minutes)

**Sprint: Add Equal Groups (9 minutes)**

Materials: (S) Add Equal Groups Sprint

Note: This Sprint reviews Lesson 1. See Lesson 2 for the directions for administering a Sprint.

Group Counting (3 minutes)

Note: Basic skip-counting skills from Grade 2 shift focus in this Grade 3 activity. Group counting reviews

interpreting multiplication as repeated addition. Counting by twos and threes in this activity anticipates work with those factors in Topic B.

T: Let’s count by twos. (Direct students to count forward and backward to 20, periodically changing

directions.)

T: Let’s count by threes. (Direct students to count forward and backward to 21, periodically changing

directions. Emphasize the 9 to 12 and 18 to 21 transitions.)

**Group Counting (3 minutes)**

Note: Basic skip-counting skills from Grade 2 shift focus in this Grade 3 activity. Group counting reviews

interpreting multiplication as repeated addition. Counting by twos and threes in this activity anticipates work

with those factors in Topic B.

T: Let’s count by twos. (Direct students to count forward and backward to 20, periodically changing

directions.)

T: Let’s count by threes. (Direct students to count forward and backward to 21, periodically changing

directions. Emphasize the 9 to 12 and 18 to 21 transitions.)

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**Add to Multiply (3 minutes)**

Materials: (S) Personal white board

Note: This activity reviews Lesson 2. Students directly relate repeated addition to multiplication. They

interpret products using the array.

T: (Project a picture with 3 groups of 5 circled.) How many groups are circled?

S: 3.

T: How many are in each group?

S: 5.

T: Write it as an addition sentence.

S: (Write 5 + 5 + 5 = 15.)

T: Write a multiplication sentence representing 3 fives equals 15 .

S: 3 x 5 = 15.

Continue with this possible sequence: 3 groups of 10, 3 groups of 4, and 7 groups of 2.

**Lesson 4**

Fluency Practice (14 minutes)

⬛ Sprint: Repeated Addition as Multiplication 3.4E (9 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Array Multiplication 3.4D, 3.4E (2 minutes)

**Sprint: Repeated Addition as Multiplication (9 minutes)**

Materials: (S) Repeated Addition as Multiplication Sprint

Note: Students relate repeated addition to multiplication. This reviews Topic A’s objectives. See Lesson 2 for the directions for administering a Sprint.

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and threes in this activity anticipates work with those factors in this lesson.

T: Let’s count by twos. (Direct students to count forward and backward to 20, periodically changing

directions, e.g., 2, 4, 6, 8, 10, 8, 10, 12, 10, 12, 14, 16, 18, 20, 18, 20, 18, 16, 14, 12, 10, 12, 10, 8, 10,

8, 6, 4, 2, 0.)

T: Let’s count by threes. (Direct students to count forward and backward to 24, periodically changing

directions. Emphasize the 9 to 12 and 18 to 21 transitions, e.g., 3, 6, 9, 12, 9, 12, 9, 12, 15, 18, 21, 18,

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21, 18, 21, 24, 21, 18, 21, 18, 15, 12, 15, 12, 9, 12, 9, 6, 3, 0.)

**Array Multiplication (2 minutes)**

Materials: (S) Personal white board

Note: This activity reviews Topic A’s objectives. Students directly relate repeated addition to multiplication,

interpreting products using the array.

T: (Project a picture with 3 groups of 2 circled.) Say the repeated addition equation.

S: 2 + 2 + 2 = 6.

T: (Write 3 x \_\_ = \_\_\_.) On your personal white board, complete the multiplication equation.

S: (Write 3 x = 6.)

Continue with the following possible sequence: 4 groups of 10, 3 groups of 4, 7 groups of 3, and 8 groups of 2.

**Lesson 5**

Fluency Practice (8 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Divide Equal Groups 3.4H, 3.4J (5 minutes)

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and threes in this activity supports work with those factors in Topic B.

T: Let’s count by twos. (Direct students to count forward and backward to 20, emphasizing the 8 to 10,

10 to 12, and 18 to 20 transitions.)

T: Let’s count by threes. (Direct students to count forward and backward to 27, changing directions.

Emphasize the 9 to 12 and 18 to 21 transitions.)

Record the count-by threes to use later in the lesson.

**Divide Equal Groups (5 minutes)**

Materials: (S) Personal white board

Note: Students directly relate repeated addition to division. They interpret the number of groups as the

unknown in division. This activity anticipates the lesson objective.

T: (Project an array with 2 groups of 5.) How many groups are there?

S: 2.

T: How many are in each group?

S: 5.

T: Say the total as a repeated addition sentence.

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S: 5 + 5 = 10.

T: Write a division sentence for 10 divided into 2 equal groups.

S: (Write 10 ÷ 2 = 5.)

Continue with the following possible sequence: 4 groups of 2, 3 groups of 4, and 2 groups of 6.

**Lesson 6**

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and threes

in this activity supports work with those factors in Topic B.

T: Let’s count by twos. (Direct students to count forward and backward to 20, emphasizing the 8 to 10,

10 to 12, and 18 to 20 transitions.)

T: Let’s count by threes. (Direct students to count forward and backward to 30, periodically changing

directions. Emphasize the 9 to 12, 18 to 21, and 27 to 30 transitions.)

**Divide Equal Groups (5 minutes)**

Materials: (S) Personal white board

Note: Students directly relate repeated addition to division. They interpret the unknown in division. This

activity bridges Lessons 5 and 6.

T: (Project an array with 3 groups of 5.) Say the total as a repeated addition sentence.

S: 5 + 5 + 5 = 15.

T: Write a division sentence for 15 divided into 3 equal groups.

S: (Write 15 ÷ 3 = 5.)

Continue with the following possible sequence: 5 groups of 3, 4 groups of 3, 3 groups of 4, 9 groups of 2, and 2 groups of 9.

Alternate between division sentences where the quotient represents either the number of objects in a group or the number of groups.

**Lesson 7**

Fluency Practice (13 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Divide Equal Groups 3.4H, 3.4J (5 minutes)

⬛ Multiply with Twos 3.4E (5 minutes)

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**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and threes

in this activity anticipates work with those factors in Topic C.

T: Let’s count by twos. (Direct students to count forward and backward to 20, emphasizing the 8 to 10,

10 to 12, and 18 to 20 transitions.)

T: Let’s count by threes. (Direct students to count forward and backward to 30, periodically changing

directions. Emphasize the 9 to 12, 18 to 21, and 27 to 30 transitions.)

**Divide Equal Groups (5 minutes)**

Materials: (S) Personal white board

Note: Students directly relate repeated addition to division. They interpret the unknown in division. This activity reviews Lesson 6.

T: (Project an array with 2 groups of 4.) Say the total as a repeated addition sentence.

S: 4 + 4 = 8.

T: Write a division sentence for 8 divided into 2 equal groups.

S: (Write 8 ÷ 2 = 4.)

T: Below that division sentence write a division sentence dividing 8 into 4 equal groups.

S: (Write 8 ÷ 4 = 2.)

Continue with this possible sequence: 5 groups of 3, 3 groups of 4, and 6 groups of 2.

A picture containing bubble chart

Description automatically generated

**Multiply with Twos (5 minutes)**

Materials: (S) Personal white board, twos array (Fluency Template), blank paper

Note: Students unit count objects in an array and write

multiplication sentences that match the count-by in

anticipation of this lesson’s objective.

T: Slip your template into your personal white board.

T: Turn your board so that it’s vertical. Use your blank

paper to cover all but the first row of dots.

T: How many twos show?

S: 1 two.

T: Say the multiplication sentence to represent the array

that’s shown and solve.

S: 1 x 2 = 2.

T: Uncover another row.

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Continue this sequence having students uncover twos for 2 x 2, 3 x 2, 4 x 2, 5 x 2, 6 x 2, 7 x 2, 8 x 2, and 9 x 2, 10 x 2.

**Lesson 8**

Fluency Practice (6 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Commutative Multiplying 3.4K (3 minutes)

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos, threes,

and fours in this activity supports work with units of 2 and 3 in this topic and anticipates work using units of 4 in Topic E.

T: Let’s count by twos to 20. Whisper the numbers, and then speak them.

T: Let’s count by twos to 20 again. This time, hum the first number, and then speak it. As you hum,

think of the number.

T: Let’s count by twos to 20. This time, instead of humming, think every other number.

T: What did we just count by?

S: Twos.

T: Let’s count by fours. (Direct students to count forward and backward to 20, periodically changing

directions.)

T: Let’s count by threes. (Direct students to count forward and backward to 30, periodically changing

directions. Emphasize the 9 to 12, 18 to 21, and 27 to 30 transitions.)

**Commutative Multiplying (3 minutes)**

Materials: (S) Personal white board

Note: Practicing this concept, which was taught in Lesson 7, helps students build confidence and automaticity.

T: (Project a 3 x 2 array.) How many groups of 2 do you see?

S: 3 groups of 2.

T: Write two different multiplication sentences for the array.

S: (Write 3 x 2 = 6 and 2 x 3 = 6.)

Continue with the following possible sequence: 3 by 5 and 4 by 3.

T: (Write 4 x 2 = 2 x \_\_.) On your board, fill in the blank.

S: (Write 4 x 2 = 2 x 4.)

Repeat the process for 9 x 5 = 5 x \_\_\_and 3 x 6 = 6 x \_\_\_\_.

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**Lesson 9**

Fluency Practice (15 minutes)

⬛ Multiply by 2 Pattern Sheet 3.4F (8 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Forms of Multiplication 3.4D, 3.4E (4 minutes)

**Multiply by 2 Pattern Sheet (8 minutes)**

Materials: (S) Multiply by 2 (1–5) (Pattern Sheet)

Note: This activity builds fluency with multiplication facts using units of 2. It works toward students knowing from memory all products of two one-digit numbers.

T: (Write 5 x 2 = \_\_\_.) Let’s skip-count by twos to find the answer. (Count with fingers to 5 as students

count. Record skip-count on the board.)

S: 2, 4, 6, 8, 10.

T: (Circle 10 and write 5 x 2 = 10 above it. Write 3 x 2 = \_\_\_.) Let’s skip-count up by twos again. (Count with fingers to 3 as students count.)

S: 2, 4, 6.

T: Let’s see how we can skip-count down to find the answer, too. Start at 10 with 5 fingers, 1 for each

two. (Count down with your fingers as students say numbers.)

S: 10 (5 fingers), 8 (4 fingers), 6 (3 fingers).

Repeat the process for 4 x 2.

T: Let’s practice multiplying by 2.

Directions for Administration of Multiply-By Pattern Sheet

⬛ Have students locate (or distribute) the Multiply-By Pattern Sheet.

⬛ Allow a maximum of 2 minutes for students to complete as many problems as possible.

⬛ Direct students to work left to right across the page.

⬛ Encourage skip-counting strategies to solve unknown facts.

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by threes and fours

in this activity supports work with units of 3 in this topic and anticipates work using units of 4 in Topic E.

T: Let’s count by threes. (Direct students to count forward and backward to 30, emphasizing the

transition from 18 to 21.)

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T: Let’s count by fours. (Direct students to count forward and backward to 24, emphasizing the 16 to 20

transition.)

**Forms of Multiplication (4 minutes)**

Materials: (S) Personal white board

Note: Students directly relate repeated addition to multiplication in preparation for using the distributive

property in this lesson.

T: (Project a 3 X5 array.) Represent this array as a repeated addition sentence using 5 as the size of the

groups.

S: (Write 5 + 5 + 5 = 15.)

T: (Project a 3 X4 array. Write \_\_\_\_\_\_ fours = \_\_\_\_\_\_.) Complete the equation on your personal white

board.

S: (Write 3 fours = 12.)

T: (Project a 7 X2 array.) Write two multiplication sentences for 7 groups of 2.

S: (Write 7 X2 = 14 and 2 X7 = 14.)

T: (Project a 6 X3 array. Write 18 = 6 X\_\_\_\_\_.) Complete the equation on your personal white board.

S: (Write 18 = 6 X3.)

T: (Project a 5 X3 array. Write 5 threes = \_\_\_\_\_.) Complete the equation on your personal white board.

S: (Write 5 threes = 15.)

T: (Add one more group of 3 to the array. Write 5 threes + 1 three = \_\_\_\_\_threes = \_\_\_\_\_ ones.)

Complete the equation on your personal white board.

S: (Write 5 threes + 1 three = 6 threes = 18 ones.)

**Lesson 10**

Fluency Practice (11 minutes)

⬛ Multiply by 2 Pattern Sheet 3.4F (8 minutes)

⬛ Group Counting 3.4E (3 minutes)

**Multiply by 2 Pattern Sheet (8 minutes)**

Materials: (S) Multiply by 2 (6–10) (Pattern Sheet)

Note: This activity builds fluency with multiplication facts using units of 2. It works toward students knowing from memory all products of two one-digit numbers. See Lesson 9 for the directions for administering a

Multiply-By Pattern Sheet.

T: (Write 7 x 2 = \_\_\_\_.) Let’s skip-count up by twos. (Count with fingers to 7 as students count.)

S: 2, 4, 6, 8, 10, 12, 14.

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T: This time, let’s start from 10 to find our answer more quickly. Show 5 fingers all at once to show 10.

S: (Show 5 fingers.)

T: Now, count by twos from 10. Raise another finger for each two you count. (Model as students count.)

S: 10, 12, 14. (Raise a sixth finger at 12, and a seventh finger at 14.)

T: Let’s see how we can skip-count down to find the answer, too. Start at 20. (Show 10 fingers to

represent 20. Hide one finger at a time as students say numbers.)

S: 20, 18, 16, 14.

Repeat the process for 9 x 2 and 8 x 2.

T: Let’s get some practice multiplying by 2. Be sure to work left to right across the page.

S: (Complete the Multiply by 2 Pattern Sheet.)

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by threes and fours

in this activity supports work with units of 3 in this topic and anticipates work using units of 4 in Topic E.

T: Let’s count by threes. (Direct students to count forward and backward to 30, emphasizing the

transition from 18 to 21.)

T: Let’s count by fours. (Direct students to count forward and backward to 24, emphasizing the 16 to 20

transition.)

**Lesson 11**

Fluency Practice (11 minutes)

⬛ Multiply by 3 Pattern Sheet 3.4F (8 minutes)

⬛ Group Counting 3.4E (3 minutes)

**Multiply by 3 (8 minutes)**

Materials: (S) Multiply by 3 (1–5) (Pattern Sheet)

Note: This activity builds fluency with multiplication facts using

units of 3. It works toward students knowing from memory all

products of two one-digit numbers. See Lesson 9 for the

directions for administering a Multiply-By Pattern Sheet.

T: (Write 5 x 3 = \_\_\_\_.) Let’s skip-count up by threes to

solve. (Raise a finger for each number to track the

count. Record the skip-count answers on the board.)

S: 3, 6, 9, 12, 15.

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T: (Circle 15 and write 5 x 3 = 15 above it. Write 4 x 3 = \_\_\_\_.) Skip-count up by threes to find the

answer. (Track with fingers as students count.)

S: 3, 6, 9, 12.

T: Let’s count down to find the answer to 4 x 3, too. Start at 15. (Count down with fingers as students

say numbers.)

S: 15, 12.

T: Let’s practice multiplying by 3. Be sure to work left to right across the page.

S: (Complete the Multiply by 3 Pattern Sheet.)

Group Counting (3 minutes)

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and fours in

this activity reviews multiplication with units of 2 from Topic C and anticipates using units of 4 in Topic E.

T: Let’s count by twos. (Direct students to count forward and backward to 20.)

T: Let’s count by fours. (Direct students to count forward and backward to 36, emphasizing the 20 to 24

and 28 to 32 transitions.)

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and fours in

this activity reviews multiplication with units of 2 from Topic C and anticipates using units of 4 in Topic E.

T: Let’s count by twos. (Direct students to count forward and backward to 20.)

T: Let’s count by fours. (Direct students to count forward and backward to 36, emphasizing the 20 to 24

and 28 to 32 transitions.)

**Lesson 12**

Fluency Practice (13 minutes)

⬛ Multiply by 3 Pattern Sheet 3.4F (8 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Divide 3.4E (2 minutes)

**Multiply by 3 Pattern Sheet (8 minutes)**

Materials: (S) Multiply by 3 (6–10) (Pattern Sheet)

Note: This activity builds fluency with multiplication facts using units of 3. It works toward students knowing

from memory all products of two one-digit numbers. See Lesson 9 for the directions for administering a

Multiply-By Pattern Sheet.

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T: (Write 6 x 3 = \_\_\_\_\_.) Let’s skip-count up by threes to solve. (Count with fingers to 6 as students count.)

S: 3, 6, 9, 12, 15, 18.

T: Let’s skip-count down to find the answer, too. Start at 30. (Count down with fingers as students

count.)

S: 30, 27, 24, 21, 18.

Repeat the process for 8 x 3 and 7 x 3.

T: Let’s practice multiplying by 3. Be sure to work left to right across the page.

S: (Complete the Multiply by 3 Pattern Sheet.)

Group Counting (3 minutes)

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and fours in

this activity reviews multiplication with units of 2 from Topic C and anticipates using units of 4 in Topic E.

T: Let’s count by twos. (Direct students to count forward and backward to 20.)

T: Let’s count by fours. (Direct students to count forward and backward to 36, emphasizing the 20 to 24

and 28 to 32 transitions.)

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and fours in

this activity reviews multiplication with units of 2 from Topic C and anticipates using units of 4 in Topic E.

T: Let’s count by twos. (Direct students to count forward and backward to 20.)

T: Let’s count by fours. (Direct students to count forward and backward to 36, emphasizing the 20 to 24

and 28 to 32 transitions.)

**Divide (2 minutes)**

Materials: (S) Personal white board

Note: This activity builds fluency with multiplication and division. It works toward the goal of students knowing

from memory all products of two one-digit numbers and reviews the objective of Lesson 11.

T: (Project a 2 by 4 array of objects.) Draw an array to match my picture.

S: (Draw 2 by 4 array.)

T: Skip-count by twos to find how many total objects there are. (Point as students count.)

S: 2, 4, 6, 8.

T: How many groups of 2 are there?

S: 4.

T: Say the total as a multiplication sentence starting with the number of groups.

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S: 4 x 2 = 8.

T: (Write 4 x 2 = 8. Below it, write 8 ÷ 4 = \_\_\_\_\_.) Fill in the blank to make a true division sentence.

Then, divide your array into 4 equal groups to find the answer.

S: (Draw lines separating the array into 4 groups of 2, and write 8 ÷ 4 = 2.)

T: Erase the lines that divided the array.

S: (Erase lines.)

T: Show 8 ÷ 4 by making groups of 4.

S: (Circle 2 groups of 4.)

Repeat process for the following possible sequence: 9 ÷ 3, 12 ÷ 2, and 12 ÷ 3.

**Lesson 13**Fluency Practice (14 minutes)

⬛ Sprint: Multiply or Divide by 2 3.4F (9 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Divide 3.4J (2 minutes)

**Sprint: Multiply or Divide by 2 (9 minutes)**

Materials: (S) Multiply or Divide by 2 Sprint

Note: This activity builds fluency with multiplication and division using units of 2. It works toward students’

ability to multiply and divide fluently within 100. See Lesson 2 for the directions for administering a Sprint.

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by threes and fours

in this activity reviews multiplication with units of 3 from Topic C and anticipates using units of 4 in Topic E.

T: Let’s count by threes. (Direct students to count forward and backward to 30.)

T: Let’s count by fours. (Direct students to count forward and backward to 40, emphasizing the 20 to 24

28 to 32, and 36 to 40 transitions.)

**Divide (2 minutes)**

Materials: (S) Personal white board

Note: This activity builds fluency with multiplication and division. It works toward students knowing from

memory all products of two one-digit numbers.

T: (Write 2 x 3 = \_\_\_.) Say the multiplication sentence.

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S: 2 x 3 = 6.

T: (Write 2 x 3 = 6. Directly below it, write \_\_\_ ÷ 3 = 2.) On your personal white board, write the

equation and fill in the blank.

S: (Write 6 ÷ 3 = 2.)

Repeat the process for the following possible sequence: 3 x 3, 5 x 3, and 9 x 3.

**Lesson 14**

Fluency Practice (12 minutes)

⬛ Sprint: Multiply or Divide by 3 3.4F (9 minutes)

⬛ Read Strip Diagrams 3.4K (3 minutes)

**Sprint: Multiply or Divide by 3 (9 minutes)**

Materials: (S) Multiply or Divide by 3 Sprint

Note: This activity builds fluency with multiplication and division using units of 3. It works toward students’ fluency within 100. See Lesson 2 for the directions for administering a Sprint.

Instead of movement exercises between Sprints, have students:

⬛ Count by twos to 20 forward and backward.

⬛ Count by fours to 40 forward and backward.

**Read Strip Diagrams (3 minutes)**

Materials: (S) Personal white board

Note: Students practice reading the difference between the value of the unit (the size of the groups) and the number of units. The activity anticipates using the strip diagram as a model for commutativity.

T: (Project a strip diagram partitioned into 5 equal units, drawing 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 strip diagram.

S: (Write 5 x 2 = 10.)

Repeat the process, alternating between finding the number of groups and the size of the groups, for

4 x 3 = 12, 8 ÷ 4 = 2, and 15 ÷ 3 = 5.

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**Lesson 15**

Fluency Practice (11 minutes)

⬛ Multiply by 4 Pattern Sheet 3.4F (8 minutes)

⬛ Group Counting 3.4E (3 minutes)

**Multiply by 4 (8 minutes)**

Materials: (S) Multiply by 4 (1–5) (Pattern Sheet)

Note: This activity builds fluency with multiplication facts using units of 4. It works toward the goal of

students knowing from memory all products of two one-digit numbers. See Lesson 9 for the directions for administering a Multiply-By Pattern Sheet.

T: (Write 5 × 4 = \_\_\_\_.) Let’s skip-count up by fours to find the answer. (Count with fingers to 5 as

students count. Record the skip-count answers on the board.)

S: 4, 8, 12, 16, 20.

T: (Circle 20 and write 5 × 4 = 20 above it. Write 4 × 4 = \_\_\_\_.) Let’s skip-count up by fours again.

(Count with fingers to 4 as students count.)

S: 4, 8, 12, 16.

T: Let’s see how we can skip-count down to find the answer to 4 × 4. Start at 20. (Count down with

fingers as students say numbers.)

S: 20, 16.

Repeat the process for 3 x 4.

T: Let’s practice multiplying by 4. Be sure to work left to right across the page.

S: (Complete the Multiply by 4 Pattern Sheet.)

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and threes

in this activity reviews multiplication with units of 2 and 3 from Topics C and D.

T: Let’s count by twos. (Direct students to count forward and backward to 20.)

T: Let’s count by threes. (Direct students to count forward and backward to 30.)

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**Lesson 16**

Fluency Practice (14 minutes)

⬛ Multiply by 4 Pattern Sheet 3.4F (8 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Read Strip Diagrams 3.4K (3 minutes)

**Multiply by 4 Pattern Sheet (8 minutes)**

Materials: (S) Multiply by 4 (6–10) (Pattern Sheet)

Note: This activity builds fluency with multiplication facts using units of 4. It works toward the goal of

students knowing from memory all products of two one-digit numbers. See Lesson 9 for the directions for

administering a Multiply-By Pattern Sheet.

T: (Write 7 × 4 = \_\_\_\_.) Let’s skip-count up by fours to solve. (Count with fingers to 7 as students

count.)

S: 4, 8, 12, 16, 20, 24, 28.

T: Let’s skip-count up by fours starting at 5 fours or 20.

S: (Show 5 fingers to represent 5 fours, or 20.) 20, 24, 28. (Count with fingers up to 7 fours as students

count.)

T: Let’s skip-count down to find the answer to 7 × 4. Start at 10 fours or 40. (Count down with fingers

as students say numbers.)

S: 40, 36, 32, 28.

Repeat the process of skip-counting up from 5 fours and down from 10 fours to solve 9 x 4 and 8 x 4. Then have students complete the Multiply by 4 Pattern Sheet (6–10).

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by twos and threes in this activity reviews multiplication with units of 2 and 3 from Topics C and D.

T: Let’s count by twos. (Direct students to count forward and backward to 20.)

T: Let’s count by threes. (Direct students to count forward and backward to 30. Whisper the numbers

between threes and speak each three out loud. For example, whisper 1, whisper 2, say 3, whisper 4,

whisper 5, say 6, and so on.)

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**Read Strip Diagrams (3 minutes)**

Materials: (S) Personal white board

Note: Students practice reading the difference between the value of the unit (the size of the groups) and the number of units. The activity reviews using the strip diagram as a model for commutativity.

T: (Project a strip diagram partitioned into 2 equal units. Draw 8 stars in each unit, and bracket the total

with a question mark.) Say the addition sentence.

S: 8 + 8 = 16.

T: Say the multiplication sentence starting with the number of groups.

S: 2 x 8 = 16.

T: Draw the strip diagram, and label units with numbers instead of stars. Label the missing total.

Beneath the diagram, write a multiplication sentence.

S: (Draw a strip diagram with 8 written inside both units and 16 written as the total. Beneath the

diagram, write 2 x 8 = 16.)

Repeat the process for 3 x 7 and 4 x 6.

**Lesson 17**

Fluency Practice (9 minutes)

⬛ Sprint: Multiply or Divide by 4 3.4F (9 minutes)

**Sprint: Multiply or Divide by 4 (9 minutes)**

Materials: (S) Multiply or Divide by 4 Sprint

Note: Framing division through missing factors in multiplication sentences builds a strong foundation for

understanding the relationships between multiplication and division. See Lesson 2 for directions for

administering a Sprint.

Between Sprints, include the following group counts in place of movement exercises.

⬛ Count by twos to 20 forward and backward.

⬛ Count by threes to 30, hum/talk forward and backward. (Hum as you think 1, 2, say 3, hum 4, 5, say

6, etc.)

⬛ Count by fives to 50 forward and backward.

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**Lesson 18**

Fluency Practice (9 minutes)

⬛ Sprint: Add or Subtract Using 5 2.4A, 2.4B (9 minutes)

**Sprint: Add or Subtract Using 5 (9 minutes)**

Materials: (S) Add or Subtract using 5 Sprint

Note: This activity builds a foundation for multiplication using units of 5 through reviewing skip-counting from

Grade 2. See Lesson 2 for the directions for administering a Sprint.

Between Sprints, include the following group counts in place of movement exercises.

⬛ Count by threes to 30, think/talk forward and backward.

⬛ Count by sixes to 30, forward and backward.

⬛ Count by fours to 40, forward and backward.

**Lesson 19**

Fluency Practice (14 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Commutative Multiplying 3.4E (3 minutes)

⬛ Decompose and Multiply 3.4K (4 minutes)

⬛ Compose and Multiply 3.4K (4 minutes)

**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by threes, fours, fives, and sixes in this activity reviews multiplication with units of 3, 4, and 5 and anticipates multiplication with units of 6 in Module 3.

T: Let’s count by fives. (Direct students to count forward and backward to 50.)

T: Let’s count by fours. (Direct students to count forward and backward to 40.)

T: Let’s count by threes. (Direct students to count forward and backward to 30.)

T: Let’s count by sixes. (Direct students to count forward and backward to 36, emphasizing the 24 to

30 transition.)

**Commutative Multiplying (3 minutes)**

Note: This activity reviews the commutativity of multiplication, learned in Lessons 7, 8, and 15.

T: (Write 3 × 2 = \_\_\_.) Say the multiplication sentence.

S: 3 × 2 = 6.

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T: Flip it.

S: 2 × 3 = 6.

Repeat the process for 5 × 2, 5 × 3, 3 × 4, 2 × 8, and 3 × 7.

**Decompose and Multiply (4 minutes)**

Materials: (S) Personal white board

Note: This activity anticipates multiplication using units of 6, 7, 8, and 9 by decomposing larger facts into

smaller known facts. It reviews the break apart and distribute strategy.

T: (Write 7 × 4 = \_\_\_\_.) Rewrite the equation in unit form.

S: (Write 7 fours = \_\_\_\_.)

T: (Write 7 fours = (5 fours) + (\_\_\_\_ fours) = \_\_\_\_.) 7 fours

is the same as 5 fours and how many fours?

S: 2 fours.

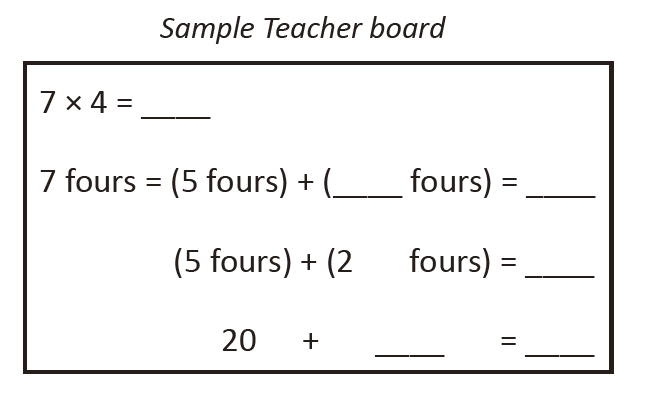
T: (Write (5 fours) + (2 fours) = \_\_\_\_. Below it, write

20 + \_\_\_\_ = \_\_\_\_.) Fill in the blanks.

S: (Write 20 + 8 = 28.)

T: 7 × 4 equals?

S: 28!



Repeat for the following possible sequence: 8 × 3, 9 × 2, and 6 × 4. Change the unknowns that students need to fill in.

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**Compose and Multiply (4 minutes)**

Materials: (S) Personal white board

Note: This activity anticipates multiplication using units of 6, 7, 8, and 9 by composing smaller known facts

into larger unknown facts. It reviews the break apart and distribute strategy.

T: (Write (5 × 3) + (2 × 3) = \_\_\_.) Fill in the blank to write a true multiplication sentence on your

personal white board. Below the multiplication sentence, write an addition sentence.

S: (Write (5 × 3) + (2 × 3) = 21. Below it, write 15 + 6 = 21.)

T: Write (5 × 3) + (2 × 3) as a single multiplication sentence.

S: (Write 7 × 3 = 21.)

Repeat for the following possible sequence: 8 × 2 and 9 × 4.

**Lesson 20**

Fluency Practice (9 minutes)

⬛ Sprint: Skip-Count by 5 2.2C (9 minutes)

**Sprint: Skip-Count by 5 (9 minutes)**

Materials: (S) Skip-Count by 5 Sprint

Note: This activity builds a foundation for multiplication using units of 5 through reviewing skip-counting from

Grade 2. See Lesson 2 for the directions for administering a Sprint.

Between Sprints, include the following group counting in place of movement exercises:

⬛ Count by fours to 40, hum/talk forward and backward. (Hum as you think 1, 2, 3; say 4. Hum as you

think 5, 6, 7; say 8, etc.)

⬛ Count by sixes to 42 forward and backward, emphasizing the 24 to 30 and 36 to 42 transitions.

⬛ Count by threes to 30 forward and backward.

**Lesson 21**

Fluency Practice (14 minutes)

⬛ Group Counting 3.4E (3 minutes)

⬛ Multiply by 5 Pattern Sheet 3.4F (8 minutes)

⬛ Commutative Multiplying 3.4E (3 minutes)

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**Group Counting (3 minutes)**

Note: Group counting reviews interpreting multiplication as repeated addition. Counting by threes, fours, and sixes in this activity reviews multiplication with units of 3 and 4 and anticipates multiplication with units of 6 in Module 3.

T: Let’s count by threes. (Direct students to count forward and backward to 30.)

T: Let’s count by fours, think/talk forward and backward. (Direct students to count forward and

backward to 40. Think 1, 2, 3; say 4. Think 5, 6, 7; say 8, etc.)

T: Let’s count by sixes. (Direct students to count forward and backward to 48, emphasizing the 24 to

30 and 36 to 42 transitions.)

**Multiply by 5 Pattern Sheet (8 minutes)**

Materials: (S) Multiply by 5 (1–5) (Pattern Sheet)

Note: This activity builds fluency with multiplication facts using units of 5. It works toward students knowing from memory all products of two one-digit numbers. See Lesson 9 for the directions for administering a Multiply-By Pattern Sheet.

T: (Write 5 × 5 = \_\_\_\_.) Let’s skip-count up by fives to solve. (Count with fingers to 5 as students count.

Record skip-count answers on the board.)

S: 5, 10, 15, 20, 25.

T: (Circle 25 and write 5 × 5 = 25 above it. Write 3 × 5 = \_\_\_\_.) Let’s skip-count up by fives again.

(Count with fingers to 3 as students count.)

S: 5, 10, 15.

T: Let’s see how we can skip-count down to find the answer, too. Start at 25. (Count down with fingers

as students say numbers.)

S: 25, 20, 15.

Repeat the process for 9 × 5 and 8 × 5.

T: Let’s practice multiplying by 5. Be sure to work left to right across the page.

S: (Complete the Multiply by 5 Pattern Sheet.)

**Commutative Multiplying (3 minutes)**

Note: This activity reviews the commutativity of multiplication, learned in Lessons 7, 8, and 15.

T: (Write 4 × 2 = \_\_\_.) Say the multiplication sentence.

S: 4 × 2 = 8.

T: Flip it.

S: 2 × 4 = 8.

Repeat the process for 5 × 3, 9 × 2, 4 × 3, 2 × 7, and 3 × 8.

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