PRACTICE TASK: Find the Unknown Number

1 Day to complete

STANDARDS FOR MATHEMATCIAL CONTENT

MCC.3.OA.5. Apply properties of operations as strategies to multiply and divide.
Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)
Use arrays, area models, and manipulatives to develop understanding of properties.

MCC.3.OA.6. Understand division as an unknown-factor problem.
For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.
Conversations should also include connections between division and subtraction.

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

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

*****Mathematical Practices 1 and 6 should be evident in EVERY lesson. *****

BACKGROUND KNOWLEDGE

(Information quoted from Van de Walle and Lovin, Teaching Student-Centered Mathematics: Grades 3-5, page 123)

This missing-factor approach is likely to be invented by some students if they are solving measurement problems such as the following: "Grace can put 6 pictures on one page of her photo album. If she has 82 pictures, how many pages will she need?" Alternatively, you can simply pose a task such as 82 ÷ 6 and ask students, "What number times 6 would be close to 82?" and continue from there.

ESSENTIAL QUESTIONS

- How can you use multiplication facts to solve unknown factor problems
- How are multiplication and division related?

MATERIALS

- Ten sided dice or number cards (1-10) or playing cards Ace through 10
- Find the Unknown Number partner cards (You may want to put this in a sheet protector or laminate for reuse)

GROUPING

Partner

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Partners will take turns rolling the ten sided dice or choosing a card from a face down pile. If Partner 1 can use the number he/she rolled/chose to correctly complete any equation on the "Find the Unknown" partner card, they can record the number in the correct spot. Partner 2 then takes a turn. The partner to fill in the division equations correctly first wins that round. Partners can play again or switch cards with another pair of partners.

FORMATIVE ASSESSMENT QUESTIONS

- How do multiplication facts help in solving division equations?
- What strategy can you use to solve division equations?

DIFFERENTIATION

Extension:

- Create a game board that has two missing components. Use number cards to 100, or use a spinner (top) on a 100s chart. (must place books on each side to keep spinner (top) on the 100s chart.

Intervention:

- Allow student to use multiplication chart or reduce the amount of rounds.

Find the Unknown Number (Partner Card A)

Partner 2

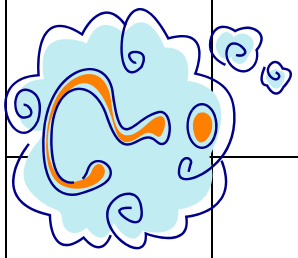
$18 \div 2 = \_\_\_$

$\_\_\_ \div 1 = 7$

$8 \div 4 = \_\_\_$

$30 \div \_\_\_ = 6$

$20 \div \_\_\_ = 2$



Partner 1

$12 \div \_\_\_ = 2$

$16 \div 4 = \_\_\_$

$5 \div 5 = \_\_\_$

$18 \div \_\_\_ = 6$

$\_\_\_ \div 2 = 4$

Find the Unknown Number (Partner Card B)

Partner 2

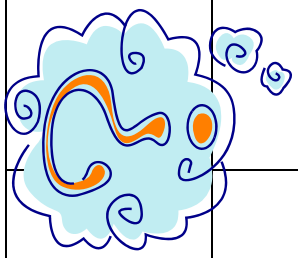
$20 \div 2 = \_\_\_\_$

$\_\_\_\_ \div 1 = 3$

$36 \div 4 = \_\_\_\_$

$36 \div \_\_\_\_ = 6$

$16 \div \_\_\_\_ = 2$



Partner 1

$24 \div \_\_\_\_ = 6$

$12 \div 4 = \_\_\_\_$

$6 \div 6 = \_\_\_\_$

$60 \div \_\_\_\_ = 6$

$\_\_\_\_ \div 2 = 5$

Find the Unknown Number (Partner Card C)

Partner 2

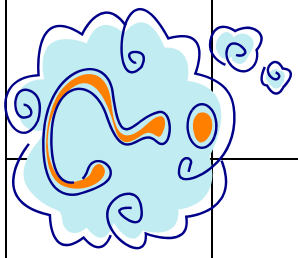
32 ÷ 8 = ____

____ ÷ 1 = 7

16 ÷ 4 = ____

63 ÷ ____ = 7

18 ÷ ____ = 2



Partner 1

80 ÷ ____ = 8

32 ÷ 4 = ____

7 ÷ 7 = ____

18 ÷ ____ = 6

____ ÷ 2 = 3