Lesson 14: Write and Solve Equations with Unknowns

Standards Alignments

Addressing	3.OA.A.1, 3.OA.A.3, 3.OA.A.4, 3.OA.D.9
Building Towards	3.OA.C.7

Teacher-facing Learning Goals

- Relate equations to multiplication situations and diagrams using a symbol for the unknown number.
- Write equations for multiplication situations and diagrams using a symbol for the unknown number.

Student-facing Learning Goals

- Let's work with equations with unknown numbers.

Lesson Purpose

The purpose of this lesson is for students to relate equations to and write equations for multiplication situations and diagrams using a symbol for the unknown number.

Students have worked with addition and subtraction equations with a symbol to represent the unknown number in grades 1 and 2. Students build on that work and the work with multiplication equations in the previous lesson as they encounter multiplication equations that have a symbol for the unknown number for the first time.

Access for:

Students with Disabilities

- Representation (Activity 2)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Card Sort (Activity 1), Number Talk (Warm-up)

Materials to Copy

- Card Sort Unknown Numbers (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

How do tape diagrams help students make sense of equations in which the unknown number is in different positions?

Cool-down (to be completed at the end of the lesson)

5 min

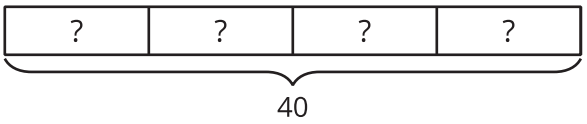
Unknown and a Number

Standards Alignments

Addressing 3.OA.A.1, 3.OA.A.4

Student-facing Task Statement

1. Write an equation to match the diagram. Use a symbol for the unknown.



2. Find the number that makes the equation true. Rewrite the equation with that number. Explain your reasoning.

Student Responses

1. $4 \times ? = 40$ or $? \times 4 = 40$
2. $4 \times 10 = 40$ or $10 \times 4 = 40$. Sample response: If I count by ten 4 times I get 40, so I know the missing number is 10.