# Lesson 14: Write and Solve Equations with Unknowns

### Standards Alignments

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| --- | --- |
| 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

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| --- | --- |
| 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) 5min

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

### Student Responses

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