

# Lesson 6: The Locker Problem

## Standards Alignments

Addressing 4.OA.B, 4.OA.B.4

### Teacher-facing Learning Goals

- Apply understanding of factors, multiples, and prime and composite numbers to solve problems.

### Student-facing Learning Goals

- Let's figure out what's happening in a game about lockers.

## Lesson Purpose

The purpose of this lesson is for students to examine factors of numbers from 1 to 20 and use them to solve problems.

In previous lessons, students used multiples to solve problems about equal-size groups (tables that accommodate certain numbers of seats and packages that contain certain numbers of items). In this lesson, students apply their knowledge of factors, multiples, prime numbers, and composite numbers to solve problems about a game involving opening and closing of lockers. Students look for patterns in the factors or multiples of numbers and use them to make predictions about the lockers that will have been touched after all 20 players of the game have a turn.

## Math Community

Tell students they will reflect on the norms they identified at the end of this lesson.

## Access for:

### Students with Disabilities

- Representation (Activity 2)

### English Learners

- MLR7 (Activity 2)

## Instructional Routines

Choral Count (Warm-up)

## Materials to Gather

- Coins: Activity 1
- Index cards: Activity 1

- Paper: Activity 1
- Two-color counters: Activity 1

### Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	25 min
Lesson Synthesis	10 min
Cool-down	5 min

### Teacher Reflection Question

As students worked in their small groups today, whose ideas were heard, valued, and accepted? How can you adjust the group structure tomorrow to ensure each student's ideas are a part of the collective learning?

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

 5 min

Reflect on Problem Solving

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Addressing 4.OA.B.4

### Student-facing Task Statement

Reflect on your work today. How did you organize your thinking? How did you adjust your work and thinking along the way? What was helpful to you?

### Student Responses

Sample response: I started trying to write everything in one color but then I saw that if I used different colors, it was easier to keep track.