

# Lesson 5: Patterns with Even and Odd Numbers

## (Optional)

### Standards Alignments

Addressing 2.OA.B.2, 2.OA.C.3

### Teacher-facing Learning Goals

- Recognize patterns in sums of odd and even numbers.

### Student-facing Learning Goals

- Let's look for patterns with even and odd numbers.

### Lesson Purpose

The purpose of this optional lesson is for students to notice and describe patterns in sums within 20 using what they know about even and odd numbers.

In previous lessons, students worked with physical objects and images to determine if groups of objects were even or odd. They represented even numbers as an equation with two equal addends.

In this lesson, students continue to practice identifying and justifying even and odd numbers and deepen their number sense with numbers within 20. They notice patterns in even and odd numbers when counting and use what they know about 2 equal groups and pairs to generalize why adding 1 changes whether a group is even or odd, but adding 2 does not (MP8). Students add even and odd numbers and connect the mental strategies they use to add within 20 to patterns in the value of the sums of even and odd addends.

This lesson is optional because it goes beyond the depth of understanding required to address the standards.

### Access for:

#### Students with Disabilities

- Representation (Activity 2)

#### English Learners

- MLR2 (Activity 2)

### Instructional Routines

How Many Do You See? (Warm-up)

## Materials to Gather

- Counters: Activity 2

## Lesson Timeline

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

## Materials to Copy

- Presto Chango Recording Sheet (groups of 1): Activity 2

## Teacher Reflection Question

How did students use what they have learned about even and odd numbers to explain the effect of adding 1 or 2? How did students show what they understand about numbers that can be decomposed into 2 equal groups or can be made into pairs? How can you build on that understanding as students consider other equal groups in the next section?

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

 5 min

### Odd One Out

#### Standards Alignments

Addressing 2.OA.B.2, 2.OA.C.3

#### Student-facing Task Statement

- Elena has 8 counters. Does she have an even or odd number of counters? Explain or show your reasoning.
- Without adding, explain which one of these expressions represents an odd number.

A

$4 + 4$

B

$8 + 1$

C

$8 + 2$

#### Student Responses

- Even. Sample response: Even because you can count to 8 by skip-counting by 2. 2, 4, 6, 8.
- $8 + 1$ . Sample response:  $8 + 1$  is odd because 8 is even. If you add one more it would not have a pair.