

Lesson 3: Prime and Composite Numbers

Standards Alignments

Addressing 4.OA.B.4, 4.OA.C.5

Teacher-facing Learning Goals

- Determine whether a given whole number in the range 1–100 is prime or composite.
- Find the factor pairs of a given whole number 1–100.

Student-facing Learning Goals

- Let's identify prime and composite numbers.

Lesson Purpose

The purpose of this lesson is for students to identify factor pairs and determine whether a given whole number in the range 1–100 is prime or composite.

In previous lessons, students were introduced to the terms “multiples” and “factor pairs.” In this lesson, they learn that whole numbers can be classified as prime or composite based on the number of factor pairs they have.

Students reason about these numbers in terms of the area and pairs of side lengths of rectangles. They learn that a **prime number** has exactly 1 factor pair—1 and the number itself, and that a **composite number** has more than 1 factor pair. They relate “prime” to a number that could represent the area of only one rectangle (with only one pair of side length) and “composite” to a number that could represent the area of multiple rectangles (with multiple pairs of side lengths).

Math Community

Tell students that, at the end of the lesson, they will be asked to identify specific actions they personally experienced from their “Doing Math” list (both teacher and student sections).

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Engagement (Activity 1)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Card Sort (Activity 1), Choral Count (Warm-up)

Materials to Gather

- Grid paper: Activity 1, Activity 2
- Inch tiles: Activity 1, 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

- Card Sort: Area (groups of 2): Activity 1

Teacher Reflection Question

Which voices went unheard in math class today? How might you leverage each student's ideas and support them being heard and seen in tomorrow's lesson?

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

 5 min

Prime or Composite?

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Addressing 4.OA.B.4

Student-facing Task Statement

1. a. What are the factor pairs of 40?
b. Is 40 a prime or composite number? Explain or show your reasoning.
2. Is 17 a prime or composite number? Explain or show your reasoning.

Student Responses

1. a. 1 and 40, 2 and 20, 4 and 10, 5 and 8.
b. Composite, because it has more than 1 factor pair.
2. Prime, because it has only one factor pair, 1 and 17.