

# Lesson 14: Reasoning about Angles (Part 1)

## Standards Alignments

Building On 4.G.A.1  
Addressing 4.MD.C.6, 4.MD.C.7

### Teacher-facing Learning Goals

- Draw angles of given measurements.
- Reason about angle measurements within a circle.

### Student-facing Learning Goals

- Let's find the size of angles on the clock.

## Lesson Purpose

The purpose of this lesson is twofold: for students to use known angles to reason about unknown angles on a clock, and for them to practice drawing angles of given measurements.

Angles are ever present on an analog clock. In this lesson, students investigate and solve problems about the angles formed by a clock's hour and minute hands. Students reason about the number of degrees between the two hands or the number of degrees the minute hand has turned over some specified time. To do so, students rely on their understanding of fractional parts (for example, a round clock can be divided into 12 and 60 equal parts), their ability to tell time and elapsed time, and their knowledge of angle types and measurements.

### Access for:

#### Students with Disabilities

- Engagement (Activity 2)

#### English Learners

- MLR8 (Activity 1)

## Instructional Routines

MLR1 Stronger and Clearer Each Time (Activity 2), Which One Doesn't Belong? (Warm-up)

## Materials to Gather

- Protractors: Activity 1, Activity 2
- Rulers or straightedges: 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 did students' understandings about time—how to tell time and find elapsed time—help their work with angles on the clock?

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

🕒 5 min

### One Angle at a Time

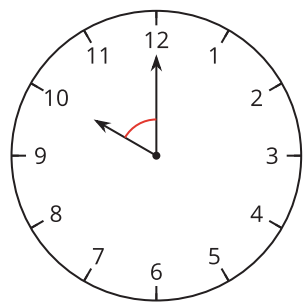
#### Standards Alignments

Addressing 4.MD.C.6, 4.MD.C.7

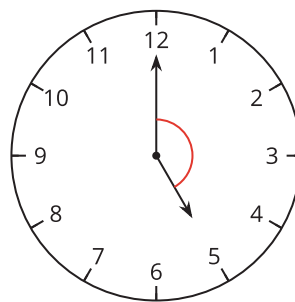
#### Student-facing Task Statement

How many degrees is each marked angle on the clock? Explain or show your reasoning.

**A**



**B**



#### Student Responses

- A.  $60^\circ$ . Sample response: Every time the minute hand moves from one number to the next, it turns  $30^\circ$ . The angle between the hands is 2 numbers apart, so it is  $2 \times 30$ , which is 60.
- B.  $150^\circ$ . Sample responses:
- $5 \times 30 = 150$
  - If it was 6 o'clock, the angle would be  $180^\circ$ . The angle for 5 o'clock is  $30^\circ$  less than  $180^\circ$ .