

## Lesson 18: Hagamos una vara de una yarda (Optional)

### Standards Alignments

Building On 2.MD.A.1

Addressing 2.MD.A.1, 2.MD.A.4, 2.MD.B.5, 2.MD.B.6, 2.MD.D.9, 2.OA.B.2

### Teacher-facing Learning Goals

- Use addition and subtraction to mark the inch marks on a yardstick.
- Use a yardstick to measure objects and compare measurements.

### Student-facing Learning Goals

- Hagamos una vara de una yarda.

### Lesson Purpose

The purpose of this lesson is for students to apply their understanding of addition, subtraction, and measurement to build their own yardstick.

This lesson is optional because it does not address any new mathematical content standards. This lesson does provide students with an opportunity to apply precursor skills of mathematical modeling.

In previous lessons, students made their own centimeter ruler and used different measuring tools such as rulers, measuring tapes, and yardsticks to measure objects.

In this lesson, students make their own yardstick using only a 3-by-5 inch index card as a tool. They use addition and subtraction to make lengths between 1 and 36 inches and mark them on a 3-foot-long strip of butcher paper. They then use their yardstick to measure a common object, the height of their chairs in inches.

In an optional activity, students use their yardstick to measure the lengths of their hands and forearms. They write equations using the measurements and explain what the equations mean in the context of the situation (MP2).

In these activities, students attend to precision as they mark each inch on their yardstick. When students make their own unit markings, they discover that unequal placement will lead to errors in measurement. The task emphasizes that an inch, or any standard length unit, must be the same size and that there must not be gaps or overlaps between length units. After they create their yardsticks, they compare their yardsticks directly across groups and by measuring the same object. They get a chance to revise their yardsticks based on their observations, an important part of mathematical modeling (MP4, MP6).

## Access for:

### Students with Disabilities

- Representation (Activity 1)

### English Learners

- MLR8 (Activity 1)

## Instructional Routines

Number Talk (Warm-up)

### Materials to Gather

- Chart paper: Activity 1
- Index cards: Activity 1
- Materials from a previous activity: Activity 2
- Sticky notes: Activity 2
- Tape: Activity 1

## Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	10 min

## Teacher Reflection Question

In what ways did you see students working together to make sense of problems and persevere in solving them? How were they able to engage in aspects of mathematical modeling as they created their yardsticks and revised their work?