

# Measurement Benchmarks

6689

## Introduction

This activity introduces students to the importance of benchmarks when estimating measurements.

## Grades 6-8

### NCTM Measurement Standards

- Apply appropriate techniques, tools, and formulas to determine measurements
- Use common benchmarks to select appropriate methods for estimating measurements

### Files/Materials Needed

None

1

Tell students that you are going to ask each of them a question, individually, about measurement. Explain that it is important that each student keep their question and answer a secret until all the students have answered their question.

2

Borrow a student calculator and summon each student out in the hallway. Tell him/her that they must estimate the distance to the end of the hall (in feet) and that they have 10 seconds to give you an answer. Record the result in L1 and repeat for each student in the class. Return to the classroom.

3

- a. Launch TI-Navigator™ on the computer and start the session.
- b. Have each student log into NavNet on their calculator.

4

Use **Collect from Class** to *force collect* L1 from the student whose calculator contains the data.

5

Use **Send to Class** to *force send* the list to all the students in the class.

6

- a. Make a histogram in Activity Center by clicking **Frequency Plot** and selecting an appropriate graph style. Use **Zoom Fit** and change the interval width accordingly.
- b. You will most likely see that there is a fairly wide discrepancy among the student responses. This will provide a perfect opportunity to emphasize the need for students to use common benchmarks to estimate distance. For example, you might want to ask students if they think their estimate could be improved upon if they used a benchmark such as
  - a typical school bus is about 36 feet in length
  - the height of a door is about 7 feet
  - the distance from a gym floor to a basketball rim is 10 feet

# Measurement Benchmarks

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Use **Quick Poll** (*with Open Response*) to ask several questions such as

- *Estimate the height of the flagpole in front of the school knowing that a school bus is about 36 feet long.*
- *Estimate the height of the school knowing that each floor is about 10 feet in height.*
- *Estimate the width of your desk knowing that a standard piece of paper is 11 inches long.*

Remember to start and stop the poll before and after each question.

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You should find that answers are not as widespread as the distances to the end of the hall given in step 2. Try a few more **Quick Poll** questions; however, refrain from giving students benchmark lengths to work with. Hopefully, they will begin thinking of their own benchmarks.

Depending on the topics being taught, you can also discuss other areas of measurement such as time, volume, area, and so on. Again, students should be thinking of benchmarks (either themselves or with your assistance) to refine their estimates.