

**Project FOCUS  
Best Lessons  
FOURTH GRADE**

**Title of Lesson: Measuring Length and Conversions**

**Theme: Physical Science**

**Unit Number:        Unit Title:**

**Performance Standard(s) Covered (enter codes):**

**Enduring Standards (objectives of activity):**

**Habits of Mind**

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

**Content (key terms and topics covered):**

**Learning Activity (Description in Steps)**

**Abstract (limit 100 characters):** This is an end of course review of measuring length and conversions.

**Details:** Divide the students (using a class roster) into equal groups of approximately four, five, or six students. \*You may want to group the students by ability or just randomly assign them to groups.\* Make sure all of the Ziploc bags contain the correct amount of

1 materials for each group. Write out half of the conversion factors on a poster board, so that while teaching you can fill in the blanks. Examples: 1 mile = \_\_\_\_ ft (5280), 1 meter = \_\_\_\_ cm (100), and 1 centimeter = \_\_\_\_ mm (10). Also, write out blanks for each length abbreviation on the other poster board, so that the students can help you fill them in. Examples: mile = \_\_\_\_ (mi), feet= \_\_\_\_ (ft), and yard = \_\_\_\_ (yd). Cut 13 sheets of notebook paper in half, so that you have 25 halves. You might want to decide ahead of time what measures of length they are going to use for the questions after the activity.

At the beginning of the lesson, use the poster boards to review the abbreviations and length conversions. Let the students fill in as many of the blanks as they can, and then help them with the ones that they are unfamiliar with. After everything has been filled out, break the students up into the already assigned groups. Place each group at different spots of the classroom. It works well if there is one group in each corner of the classroom and then one group in the middle of the classroom. Have your partner teacher help you hand out the Ziploc bags and tell the students that they will have approximately 10 minutes to construct the tallest possible free standing tower that

they can. They are to only use the materials in the bag, and the tower has to be able to stand on its own. At the end of ten minutes, the towers will be measured in inches by either yourself or the partner teacher with a tape measure. The height of each tower should be written on the board under each group name. The tallest tower wins the competition. The length (in inches) of the tallest tower is the length that all of the students will use in their conversions. Hand out the half sheets of paper and give them a few minutes to start the conversions into whichever lengths you picked. After about 7 minutes or so, you could have different students come up to the board and explain how they got their answer. At the end of the period, the students should turn in their work to the teacher for grading.

**Materials Needed (Type and Quantity):**

5 Ziploc gallon size plastic bags (1 per group)  
20 pieces of construction paper (4 per bag)  
20 pieces of computer paper (4 per bag)  
15 drinking straws (3 per bag)  
5 rolls of masking tape (1 per bag) 5 pairs of scissors (1 per bag) 1  
5 craft sticks (3 per bag) 1  
5 large paper clips (3 per bag)  
10 Styrofoam cups (2 per bag)  
1 tape measure  
1 kitchen timer (or stopwatch)  
2 pieces of poster board  
Poster markers  
25 half sheets of notebook paper

**Notes and Tips (suggested changes, alternative methods, cautions):**

**Critical Thinking Questions:**

What materials helped them construct the strongest free standing tower? What challenges did they encounter? What techniques did they use to achieve the tallest height?

**Sources/References:**

- 1)
- 2)
- 3)