

Algebra/Geometry Institute Summer 2010

Faculty Name: Sara Norman

School: Presbyterian Day School

Grade Level: 5th grade lesson



1 Teaching objective(s)

MDE Standard 4d.) Select and apply units for measuring length, mass, volume and temperature in the standard systems. (DOK1)

Objective:

- Students will be able to explore and apply common units of measurement (inches, feet and centimeters) and will be able to determine what units of measurement are appropriate to use for measuring different sized objects.

2 Instructional Activities

OVERVIEW

- For this activity, students will have to determine what object to use for making different measurements. Students will have to choose between using their thumbs, a width of a pencil, or a piece of paper. They will be given objects in their groups and take measurements of those objects. Objects include: paper clips, notecards, pencils, pens, and student binders. Students will also be allowed to choose an object or objects within the classroom to measure. Examples might include: arm length, shoe length, student height. Once they have taken measurement of the selected objects, they will measure the objects using a ruler or measuring tape to make a more accurate measurement.
- Students will determine which unit of measurement is most appropriate for a scenario then will use their units of measurement approximations to determine the approximate length of certain objects. (centimeters, inches, feet, yards)
Afterwards, students will use rulers to find the measurement of the same objects using their chosen unit of measurement and compare the different measurements.
 - Students will be given an array of objects to measure and a sheet to record their findings.

- Randomly chosen students will share their answers and explanations with the class using the overhead.

STEPS:

- 1.) Assign students into groups of four.
- 2.) Distribute materials to students: rulers, paperclips, pencils, notecards, sheet of paper, measurement worksheet, student binders. Make sure one of each object is given to the group. Measurement worksheets need to be given to each student in the group.
- 3.) Tell students that they will be measuring each of the objects as a group. Show worksheet- explain to students each of the columns of the worksheet.

First column- they are to write the name of the object, what they are measuring.

Second column- they are make a “rough” estimate of the object they are trying to measure using thumb, pencil or sheet of paper. They are to record results in the middle column.

Third column- students will record approximate measurement in this column. They also need to specify what unit of measurement they used to measure the different objects.

Teacher will also ask students to measure different objects in the group in addition to the ones distributed by the teacher. Teacher may suggest: folders, shoe length, arm length, height, ect. They are also to record results in the corresponding columns.

- 4.) After students have measured objects, allow students to share measurements. This can be done at random, pulling class names out of the bucket. Ask students what they measured, and how they determined the rough estimate. Also, ask students to compare their rough and approximate measurements. How were they similar/different?

- Additional Activity:

Have students go to the playground. Students may measure the height or length of different playground equipment. Such as the slide, swing seat, bridge length, bench seat, ect.

Have students first guess what they think the measurement might be for their particular object and what unit of measurement they think would be best suited to measure their object. (inches, feet, yard) Students may then use a tape measure or ruler to take a measurement. Students will compare and contrast their measurements.

3 Materials and Resources

- Paper
- Pencils
- Paper clips
- Binders
- Rulers
- Objects within the classroom: folders, arm length, shoe length, student heights, staplers, ect. Objects chosen will be determined by students and group members.
- Teacher created record keeping sheet

Resources

- <http://www.studyzone.org/testprep/math4/d/measure4l.cfm>
- http://www.mde.k12.ms.us/acad/id/curriculum/math/2007_framework/2007%20MS%20Math%20Framework%20Competencies%20and%20Objectives%209-18-07.pdf

4 Assessment

The assessment for this lesson will consist of two parts. There will be an informal and formal assessment given. The informal assessment will occur at the beginning of and during the lesson to gauge current knowledge base students regarding units of measurement. This will be primarily teacher-guided questions and brief discussion following.

The formal assessment will be a group activity to be completed by each student. Students will be arranged into groups by their table seats. Students will then be given each a worksheet to which they will be asked to identify the appropriate unit of measurement to measure a given object on the worksheet. They will be asked to then measure the object based on the unit of measurement they selected.

After students have completed and turned in assessment, the teacher will go over the assessment. This will be done by the teacher randomly selecting a student to share answers to the class. The teacher will then allow for questions and answers. The teacher will then close the lesson by going over the units of measurement introduced, and discuss appropriate uses for each.

NAME:

UNITS OF MEASUREMENT

Directions: Determine what unit of measurement you would use to measure each of the objects. In the second column, you will do a rough measurement of the object by using your thumb, a pencil or a sheet of paper. In the third column, you will then measure the object by using a ruler. Once you have measured all the objects, compare the second and third column answers. Were your “rough” measurements similar to the actual measurement? How were they different?

OBJECTS	OBJECT USED TO MEASURE & ROUGH EST.	ACTUAL

In a few sentences, briefly report your observations:

