

Subject: Elementary math

Lesson Type: Cooperative measurement - exploring standard measures

Grade Range: 2 – 4 can be adapted to grade one and five.

Resources needed: Pieces of string, strips of cardboard, pencils, shoes, mittens or other common items, tape measures (tailor and carpenter tape measures) rulers and meter sticks

Objectives: 1. teaching the reason for standard measures
2. practice in cooperative learning

Procedures:

Have objects in the classroom identified, labeled and ready for students to measure. For example: a window, a black or whiteboard, a desk, a box, a book, something round, a height,

Divide your class into groups of four. Give each group a record page identifying what needs to be measured, a piece of string, a strip of cardboard, a pencil, a shoe, a mitten or other common items. While each group should have one of each of these, these items should be of different size for each group. One group might have a piece of string 20 cm long, another 30 cm long and so on. Your record page might look something like this:

Measure a	How many	How many	How many	How many	How many
book	strings	strip	pencils	shoes	mittens
desk	strings	strip	pencils	shoes	mittens
box	strings	strip	pencils	shoes	mittens

Instructions:

Instruct the students to chose two of their group to do the measuring, one to do the recording and one to hold all the items used to measure. (They might also switch off.) Then ask them to measure the items and record them on the record sheet. You might want the students to measure approximately to the nearest half. Demonstrate how to do this.

When all students have finished, share and compare the data. You should have different numbers for the same items from each group. Explore with the group why the numbers are not all the same. (The measuring devices were not all the same length) You might want to point out that at one time people used their feet, hands and so on to measure.

Introduce the term “standard measure” show the ruler, meter stick, etc calling them a standard measuring device. Ask students to identify why if measured with these, they will show all the items on the record sheet to be the same. (The units of each one are the cm, and it is the same length on each measuring device.)

Closing the lesson

If time permits ask the groups to use the standard measuring devices to measure some or all of the items on the record sheet. Each student in the group could now use one of the measuring tools rather than dividing the tasks up in the group as done initially.

Follow-up

Use weight measures in a similar kind of lesson