Lower Grades- Lesson Topic: Measuring Lengths

Unit Description:

In this unit, student will complete a Scholastic Education (see above technological tools section) virtual field trip entitled "Max's Measuring Adventure". Students will listen to a rhyming poem as a precursor to an activity in which they measure different objects around their classroom. They will use measuring instruments other than a ruler like their hands, feet, a book, a marker, etc. and record what they measured and the length. Then, students will share their ideas and measurements with another classroom from a different culture to compare and contrast the different items and lengths of objects in the classroom.

The first step in successfully implementing this unit into the classroom is to establish a partnership with a participating classroom from a different part of the world (could be same country). The Cooperative Educational Services Agency (CESA 7) and The Center for Interactive Learning and Collaboration (CILA) in the technology tools sections list thousands of different schools in areas both inside and outside the United States that have access to videoconferencing and their contact information. The classrooms listed in these directories are interested in establishing educational partnerships and should be contacted before the beginning of the year to effectively plan for an upcoming unit. Use the sample letter in the resources section for an example of what could be sent as an initial contact to potential cooperating classrooms.

Objectives:

- Students will find the measurements of different objects around the classroom using a variety of measuring tools.
- Students will practice recording measurements into a data table.
- Students will experience different types of classrooms from other locations in the world.

Standards (California State Content Standards):

CA- California K-12 Academic Content Standards
Subject : Mathematics
Grade : Kindergarten By the end of kindergarten, students understand small numbers, quantities, and simple shapes in their everyday environment. They count, compare, describe and sort objects, and develop a sense of properties and patterns.
Area : Measurement and Geometry
Sub-Strand 1.0: Students understand the concept of time and units to measure it; they understand that objects have properties, such as length, weight, and capacity, and that comparisons may be made by referring to those properties:
Standard 1.1: Compare the length, weight, and capacity of objects by making direct comparisons with reference objects (e.g., note which object is shorter, longer, taller, lighter, heavier, or holds more).
Sub-Strand 2.0: Students identify common objects in their environment and describe the geometric features:
Standard 2.1: Identify and describe common geometric objects (e.g., circle, triangle, square, rectangle, cube, sphere, cone).
Grade : Grade One By the end of grade one, students understand and use the concept of ones and tens in the place value number system. Students add and subtract small numbers with ease. They measure with simple units and locate objects in space. They describe data and analyze and solve simple problems.
Area : Measurement and Geometry
Sub-Strand 1.0: Students use direct comparison and nonstandard units to describe the measurements of objects:
Standard 1.1: Compare the length, weight, and volume of two or more objects by using direct comparison or a nonstandard unit.
Sub-Strand 2.0: Students identify common geometric figures, classify them by common attributes, and describe their relative position or their location in space:
Standard 2.4: Arrange and describe objects in space by proximity, position, and direction (e.g., near, far, below, above, up, down, behind, in front of, next to, left or right of).
Grade : Grade Two By the end of grade two, students understand place value and number relation-ships in addition and subtraction, and they use simple concepts of multiplication. They measure quantities with appropriate units. They classify shapes and see relationships among them by paying attention to their geometric attributes. They collect and analyze data and verify the answers.
Area : Measurement and Geometry
Sub-Strand 1.0: Students understand that measurement is accomplished by identifying a unit of measure, iterating (repeating) that unit, and comparing it to the item to be measured:

Standard 1.1: Measure the length of objects by iterating (repeating) a nonstandard or standard unit.
Standard 1.2: Use different units to measure the same object and predict whether the measure will be greater or smaller when a different unit is used.
Standard 1.3 (Key Standard): Measure the length of an object to the nearest inch and/or centimeter.

Sample Lesson:

Individual Instruction: In the lab part of this lesson, students will log onto the "Max's Measuring Adventure" activity through Scholastic Education and complete the activity. They will have to get out of their chairs, measure objects, and then go back and record them onto the computer. They will measure the objects using a measuring tools other than a ruler like their hands, feet, markers, books, etc. If there is extra time, have them go back and find the actual measurements using a ruler. Allow students to work together to complete this activity and compare answers.

Whole Group Instruction: Once all of the students have completed charts with the items that they measured and how they measured them, set up the videoconference session with the cooperating classroom who has completed the same activity. If there is time, you can set up more than one session with classrooms from a variety of different locations/cultures. Have students share what they measured and how they measured it. The students from the two different classrooms should have different items in their classroom that are different lengths so that there is a visual and numerical comparison to be made. This videoconference session will expand student global awareness by being able to see the different types of classrooms in the world while also making real world connections to math.

Assessing the Tool:

1. Was the tool simple to use as a teacher? For the students?

2. Did the use of this tool increase student global awareness?

3. What could be done differently to maximize the effectiveness of the tool?

Assessing the Lesson:

1. Did this lesson enhance student multicultural understanding?

2. Did this lesson develop collaborative skills amongst the students?

3. Did this lesson allow students to reach an understanding of the overlying concepts and objectives?