



Children's Museum of Houston

Pre/Post Classroom Activities

How Do You Measure Up?

Rationale

It is the classic good vs. evil adventure as the dastardly Hacker attempts to overtake CyberSpace, but is continuously outsmarted by three curious kids and one cyberbird pal determined to stop him. Join forces with the CyberSquad, Matt, Inez, Jackie and Digit, in their quest to save CyberSpace as they zoom into *Cyberchase – The Chase Is On!*, an out-of-this-world, educational mathematics exhibit.

In this exhibit, children will enter CyberSpace through a special portal to explore favorite cybersites, including the *Control Central*, the *Grim Wrecker* and *Poddleville*. They will help the CyberSquad protect the virtual universe from the villainous Hacker while exploring math concepts such as place value, algebra, geometry, fractions and probability.

Students will engage in various measurement activities in Cyberchase. They will explore concepts of measuring weight in *Poddleville Identification*, capacity in *Pour the Score*, volume in *Wig Gels*, and with this activity length. Students will use string to measure and compare lengths and circumferences of parts of their body. This will give children concrete experience with non-standard measurement and will give a comprehensive measurement experience.

TEKS Objectives

V.D.1 (PreK): Child recognizes and compares heights or lengths of people or objects.

K.10, 1.7, 2.9, 3.11: The student directly compares the attributes of length, area, weight/mass, capacity, and/or relative temperature. The student uses comparative language to solve problems and answer questions.

*(2.9 includes: The student selects and uses nonstandard units to describe length, area, capacity, and weight/mass. The student recognizes and uses models that approximate standard units (from both SI, also known as metric, and customary systems) of length, weight/mass, capacity, and time.)

Background

Most children begin to understand measurement by exploring and comparing lengths. Here, students will practice measuring with standard units and understand attributes of length and circumference as well as make comparisons with their own length. An interesting correlation in this activity to science is to discover that some parts of a body are proportional to others - the length of one part is always the same multiple of another - so by measuring one part, you can predict the lengths of others.

Materials

- String
- Recording sheet

- Tape measure or other measuring tools
- Pencils
- Scissors

Procedure

Set Up: This activity will take place over one class period and works best in small groups of 3-4 students. Set out enough materials for each group.

1. Hold one end of the string at the top of your head. Let your partner pull it straight down to the floor. This distance is how tall you are. It is your height.
2. How many times do you think this string will wrap around your head? Make a guess and then write it on the recording sheet. Check your guess and write down the answer.
3. How many times do you think the string will go around a grown-up's head? Make a guess and then check your guess.
4. Do you think your height is longer or shorter than your arm span? Open your arms wide and measure finger tip to finger tip to find your arm span. Make a guess and then check your guess.

Questions to ask

- What similarities are there between height and circumference of your head? Is this true for most people?
- Some people say that if your height matches your arm span you are a 'square.' Why would they say that? What would you call someone whose arm span is shorter or longer than their height?

Extensions

- Try to find other similarities between body parts. Can you find a length that is the same length as your foot? (from elbow to wrist)
- Compare your height string to other objects such as tables, chairs, doors, etc.

Resources

- Measurement *For Real*: A short real life clip featuring Harry as he uses measurement and proportions to wow an audience: http://pbskids.org/cyberchase/forreal/301_for_real.html
- Use clues and measurement to find the height of various creatures: <http://pbskids.org/cyberchase/games/bodymath/index.html>
- Free lesson plan: Body Math CYBERCHASE Activity: http://pbskids.org/cyberchase/parentsteachers/lessons/pdf/finlit6_vdr_bodymath.pdf
- Length: Book by [Henry Arthur Pluckrose](#). Photographs and text introduce the concept of length and how to measure it.
- Twelve Snails to One Lizard: A Tale of Mischief and Measurement: Book by [Susan Hightower](#). A cute tale of one character's experience with non-standard and standard measurement.

How Do You Measure Up?

What are you measuring?	Length of string in centimeters:	Length of string in inches:	Are you a square or a rectangle?
Height			
Arm Span			
Head Circumference			How many times does your height string go around your head?