Measurement and Estimation Game: - Adapted from Cara Brolin

Objectives-

- Students will gain a better understanding of visual distances and estimation
- Students will actively practice using metric measurement and conversion.
- Students will practice cooperative learning.

Materials-

3 orange cones
1 stop watch
2 long tape measures (marked off in meters)
2 meter sticks
3 dry erase boards
3 dry erase markers
Box
Paper

Prep Work-

- Acquire materials.
- If tape measure is not metric, mark off meters units.
- Write various distances on pieces of paper, fold them, and place in box.
- Organize students and take them outside to an open area.
- Explain the rules of the game to the students.

Procedure-

1) Divide class into two teams.
2) Place an orange cone in a central location to act as the starting point for all distances that will be marked out during the game. Designate one team to be on the right and designate the other to be on the left.
3) Have each team designate two students to be measurers, one to be the recorder, and another to be the runner. Give the measurers of each team a long tape measure and a meter stick. Give the recorders a dry erase board and marker. Give the runners an orange cone.
4) Each round of the game will be conducted in this manner:
    a. A student from one of the teams draws a distance out of the box.
    b. Working collectively, the teams direct the runners how far to go from the central cone (one team goes the right,, while the other goes to the left) to place their team's cone at the distance drawn (an estimation). They have 30 seconds to accomplish this task (which will be timed by the teachers). The runners must be back to the central cone by the 30-second mark in order for their team to score points in that round. (The teacher can count down the last 10 seconds as a warning).
    c. The measurers then use the tape measure and meter stick to determine the actual distance that their teams have marked out with the cones. (This distance should be verified by the teachers). They tell this distance value to the recorder (in meters).
    d. The recorders determine the difference between the estimated distance and the distance that was drawn from the box. This value should be written on the top of their boards and presented to the teachers. The team that was closer to the distance drawn wins one point for that round. If the

difference is less than 2 dm (20 cm), an additional point is awarded. The scores are recorded on another dry erase board, which is kept by the teachers.

e. Both teams can earn a bonus point by converting their team's distance from meters into another unit (Km, dm, cm, mm), which the teacher picks. They have 15 seconds to work collectively to convert the value and then have the recorder put this value on their boards. If correct, each team earns a point. If incorrect, no point is awarded.
f. Before the next round starts, have runners retrieve the orange cones. Also have the teams designate new measurers, recorders, and runners.

5) Run as many rounds as time constraints allow (est. 5).