



Lesson Plan 5: Reaction Time

Subject: Math/Science

Course/Grade: Grades 6-8

Objectives/Outcomes:

- To measure the reaction time of an experiment and make comparisons with a standard as well as with other students in the virtual class room

Curriculum Framework Standard(s):

- Measurement, statistics

Procedure:

1. “Frontloading” (Before)

a. Preparation & Planning

- Find an assistant to help show as a model for classroom
- Ask assistant to extend hand and hold it out open with thumb and forefinger facing each other
- Hold ruler (with measurement in centimeters) so that the 0 is now between the subject’s finger and thumb
- Ask subject to catch the ruler when released with the thumb and finger
- Give no advanced warning as to when you are going to release the ruler
- Release the ruler and record the positioning on the ruler when it is caught (assuming that it is caught by the finger and thumb)
- Repeat the release at least 10 or 12 times with the subject. Check with the class for understanding
- When they are ready, have your students find a sibling, parent, guardian, etc. and begin the exercise checking frequently to make sure that they get it
- If doing it 12 times drop the highest and lowest and check the data (if doing it 10 times; simply record the data)

2. Assistance and Associations (During)

a. The formula to test the reaction time is expressed as:

i. $S = V_0 \cdot t + \frac{1}{2} g t^2$

Where: s= distance; V_0 = initial dropping speed;
g= gravitational acceleration of 980 cm/s^2
t= reaction time

Or simply use the chart below (the chart will show, when you know how far the ruler has fallen, the approximate length of time it took to fall that far):





CM	SEC	CM	SEC
10	.143	16	.181
11	.150	17	.186
12	.156	18	.191
13	.163	19	.197
14	.169	20	.202
15	.175		

3. Reflection & Readiness for Application (After)

- a. Name and discuss areas of football that would be affected by low/high reaction times.
- b. Discuss why reactions time might be important for different positions in football.
- c. Try this reaction drill with a dollar bill; to add to the frustration make sure that the finger and thumb are placed at George Washington's head prior to the release of the bill by a partner. (Unless there is some prompting, they probably won't catch the dollar)

