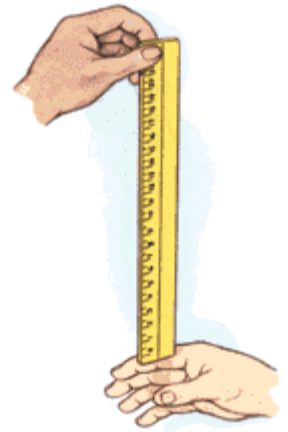


This reaction time experiment requires visual information (the movement of the ruler) to travel to your brain. Then your brain sends a motor command ("grab that falling ruler") to the muscles of your arm and hand. If all goes well, you will catch the ruler!!



How to hold the ruler

Reaction Time Test

How Fast are You?

This activity is designed to measure your response time to something that you see. Get a ruler. Hold the ruler near the end (highest number) and let it hang down. Have another person put his or her hand at the bottom of the ruler and have them ready to grab the ruler (however, they should not be touching the ruler). Tell the other person that you will drop the ruler sometime within the next 5 seconds and that they are supposed to catch the ruler as fast as they can after it is dropped. Record the level (centimetres) at which they catch the ruler. Test the same person 7 times (vary the time of dropping the ruler within the 5 second "drop-zone" so the other person cannot guess when you will drop the ruler). Note down the results.

Then convert the distance into reaction time in milliseconds (= ms)¹.

Use the following formula:

$$t = \sqrt{\frac{2y}{g}}$$

t = time (in seconds); y = distance (in cm); g = 980 cm/sec (acceleration due to gravity).

Test Person A		Test Person B	
centimetres	reaction time	centimetres	reaction time
	average:		average:

Then convert the distance into reaction time in milliseconds (= ms)².

Collect the data of your classmates.
Who is the reaction time champion?

¹ Remember that there are 1,000 milliseconds (ms) in 1 second (sec).