Reaction Time 2

Overview

This activity continues the work on understanding the functioning of the nervous system and asks students to design an experiment based on their understanding of previous observations.

Background

This activity takes a classic reaction time activity, dropping a ruler between thumb and forefinger, and asks students to design an experimental procedure that will make performing the task more difficult. The ruler drop is an ideal system as it generates concrete numbers for comparison and analysis. Students should participate in the **Reaction Time 1** activity before they do this activity.

Materials

Materials for small groups

- Rulers

Materials for individual students

- Science notebook for data collection

Preparation

- Students should have completed the **Reaction Time 1** activity.

Procedure

- Demonstrate the ruler drop reaction tester with a student volunteer. Have her hold her thumb and index finger about a half-inch apart. Hold a ruler with the zero end just between her fingers. When you drop the ruler, the student tries to catch it. The number of inches where she catches the ruler is a measure of her reaction time.
- Ask the students working in pairs to do ten trials each and record the results. This will give them a baseline value for their individual reaction times.
- After students have collected their data, discuss the test with them, focusing in on what signals and responses are involved in the task. Discuss how the class thinks they could slow down or speed up reaction times with this system.
- Ask the students to design a procedure using the ruler drop that will lead to either a slower or faster response time in the person catching the ruler.
- This exercise can be used as an assessment. Stipulate that students have to write out their proposed procedure in detail. Their results could show the same, faster, or slower reaction times. Ask students to write out what each possible result would indicate and which one they predict will happen.

Reflection/Discussion

Talk with the class about their results. Ask for their analysis of the results.