

Stimulus and responses

Responding time of person

Level Elementary

Concept

It takes time that a person makes a response when he or she gets a stimulus. The students can study it by this experiment and think the reason. This experience is the best for the study of the nervous system works.



Experiment 1

Materials

30cm scale

Procedure

(1) A and B two persons make a couple.

B holds a measure scale, and A places his or her fingers at the place of 0 scales of the measure.

A can not touch the scale.

(2) B suddenly releases the scale and then A tries to pick up the measure as quick as possible.

Science

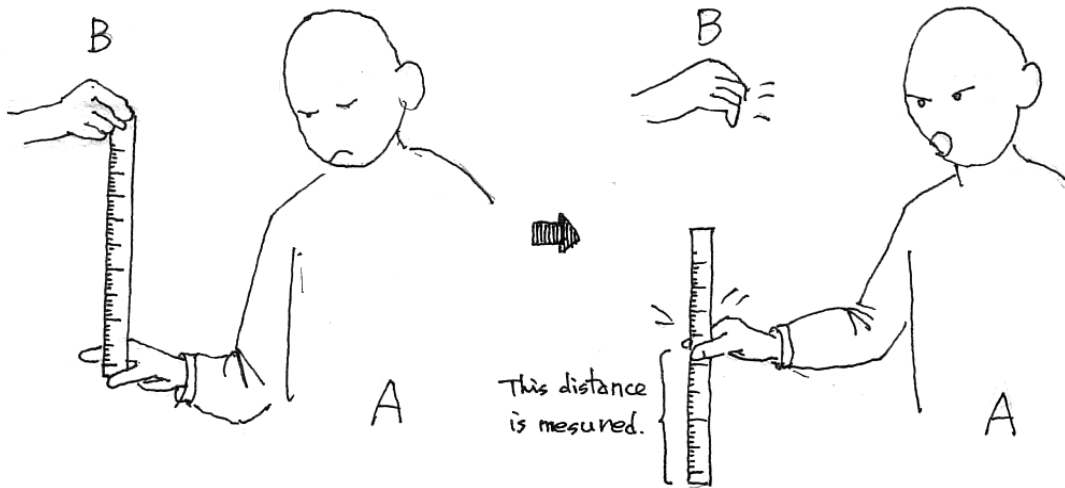
Rough time of taking place of the reaction can refer to the table below.

Distance of measure drops (cm)	10	15	20	25	30
Time required to fall (second)	0.14	0.17	0.20	0.23	0.25

In this case, the nervous system works as following.

eye → sensory nerve → cerebrum → spinal cord → motor nerve → hand muscle

If B makes to call "Yes" when B releases the scale, it becomes a route from the ear. And the tip of a finger of A is touched to the measure from the beginning. The route from the skin will be examined.



Experiment 2

Materials
stop watch

Procedure

- (1) All students line up in single file from left to right. The hand mutually ties to the next student.
- (2) The leader queues up most next to the student on the edge, and ties his hand.
The leader grasps the hand of the next student.
The button of the stop watch is pushed at this time by an opposite hand at the same time.
- (3) If the student is clasped the hand, do clasp of the hand of the next student as quickly as possible.
- (4) This operation is repeated.
The last student raises his or her hand and makes signal if the operation arrives.
- (5) The stop watch is stopped by the signal, and the taken time is divided by the number of students.

