

Science reaction time assignment



**ASSIGN
BUSTER**

Watts MOL Introduction: The time it takes from when an individual responds to a certain stimulus that they have detected is commonly referred to as reaction time. This delay in time is caused by the amount of time it takes information to go through the nervous system and then towards your brain. Your brain acts as the processor of your body and translates these informative signals so that your body can act accordingly. Reaction time is important so that humans can act fast and accordingly to whatever situations they come across.

Athletes such as short distance runners and cricketers require fast action times in order to enhance their ability and ultimately enhance their overall performance. The information given to your brain from the stimulus, 'stimuli' can be detected using any sense or even a combination of different senses. A visual stimulus is the most common with your eyes detecting a change. One of the common examples of visual modality stimuli is flashing, which has long been used as a signal coding method in the marine, aviation, and road transport industries, and shown to be able to attract attention from a distance.

To enhance road safety for pedestrians, a Roswell warning system with flashing lights adjacent to a marked crossing is used. In addition to the use of vision, auditory modality is widely used in transport, health care, and industrial environments as it has an immediate arousing effect. There was an investigation of the level of urgency of non-verbal auditory alarms used in aircraft environments, and found that the 'siren-like quality sounds' were judged as the most urgent. The siren type of auditory alarm was also rated

more alerting than the buzzer one. A tactile reaction time is the reaction from the sense of touch.

This is slightly different to the pain reaction time as touch and pain receptors aren't exactly the same. Tactile reaction time is used when the stimuli physically touches you such as if somebody were to touch you on the back. There is a common misunderstanding with 'reflexes' and 'reaction time' but they are actually quite different. Reflexes are developed survival tactics that are involuntary actions. These can still be improved but will often be quite faster than your reaction time. A reaction time is an intentional action that one does from their own will. Aim:

The aim of this experiment is to test one's visual, auditory, and tactile reaction times to see which is the fastest. Hypothesis: It has been hypothesized that the tactile stimuli will cause the fastest reaction time followed by auditory and then the visual stimuli. Material List: * Standard CACM ruler * Blindfold * Partner Method: 1. Have a person sit at a table with their dominant hand over the edge. 1. Firstly, visual response will be tested. Hold the ruler at the 30 CM mark so that the 0 CM end is just at the index finger. 2. When the ruler is released they are to grab it as fast as possible.

Do not make any sounds or gestures hinting the release of the ruler. They have to react to the visual stimulus of seeing the ruler being released. Record the centimeter mark. 3. Repeat the experiment three more times. 4. Now auditory reactions will be recorded. Have them sit at the table as before, also be sure that they put on the blindfold. 5. Again testing the dominant hand, say the word "Release" as the ruler is released. Once they

grab it record the centimeter mark and repeat 3 times. 6. For the last test, have them sitting at the table wearing he blindfold again.

This time the tactile response will be tested. Tell the person that their shoulder will be touched simultaneously to the ruler being released. There is no auditory cue to the release, Just a simple touch. 7. Record the measurement and like before, repeat three times. Variables: Independent Variable- Is the change in sensual stimuli Dependent Variable- The participant's reaction time Controlled: * The way the ruler is dropped * Repetition of each experiment three times * The environment (wind etc.) * Same person releasing ruler Risk Assessment: