

Startle

Location

Ground floor, All About Us exhibition

In a nutshell

This exhibit allows visitors to trigger and watch their own startle reflex.

What to do

Sit in the chair so that the screen can be seen and press the green button.

Time Required

KS1 & KS2 2 minutes per student.

What's happening?

Our exhibit targets the blink reflex. The same reflex that would occur if a small insect came flying towards your eye. A reflex, or to give it the proper name, a reflex arc, is an example of the nervous system working without the brain inputting. Because of that, a particular event or stimulus can have only one outcome - the spinal cord can't take decisions.

In this reflex arc we can describe the series of events:

1. The sensory receptor in your eye detects the air movement, once this reaches a certain threshold level, the receptor will fire. Below this the stimulus isn't considered strong enough to make the reflex worthwhile.
2. The sensory neuron is excited to fire by the receptor. This neuron stretches into the spinal cord and connects, or synapses, with an interneuron (also known as spinal relay neurons) which will then connect with a motor neuron.
3. The motor neuron leads out of the spinal cord and connects with the muscle around the eye and causes it to contract, which will blink the eyelids.

It all sounds quite complicated and yet it's all over in less than a second!

There are a number of other reflexes, the classic knee jerk and the withdrawal from pain. With the latter there can be a second part of the reflex where the opposite limb reaches out to push away the problem.



Curriculum links

KS1/2	<p>Science - Animals, including humans</p> <ul style="list-style-type: none"> - (Yr 1) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense <p>English - Spoken language</p> <ul style="list-style-type: none"> - give well-structured descriptions, explanations and narratives for different purposes, including for expressing feelings - use spoken language to develop understanding through speculating, hypothesising, imagining and exploring idea
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Relates to:

Workshops & Theme Days	Shows	Trails	Other exhibits
<ul style="list-style-type: none"> • Body Basics (KS1) • Jungle senses (EYFS & KS1) • Body & brain day (KS1 & KS2 lower) 	<ul style="list-style-type: none"> • How my body works (KS2) • Brain works (KS1 & KS2 lower) • Boggling Brains (KS2 upper) 		<ul style="list-style-type: none"> • Push over • Pupil • Reflex & reflect • Real brain • High speed camera • Catch it • Reaction timer

