

Module 3: Sensation and Perception

Topic 1 Content: Transduction Notes

Introduction

Transduction

Introduction

In this interactivity, click on the images in the media panel to learn about transduction.



In this interactivity, click on the images in the media panel to learn about transduction.

Module 3: Sensation and Perception

Topic 1 Content: Transduction Notes

Transduction Defined

Transduction

Transduction Defined

In transduction, the sensory organs of the body take energy from the environment and convert it into signals. These signals are then sent to the brain through the nerves in the body.



In transduction, the sensory organs of the body take energy from the environment and convert it into signals. These signals are then sent to the brain through the nerves in the body.

Module 3: Sensation and Perception

Topic 1 Content: Transduction Notes

Energy

Transduction

Energy

Whether you realize it or not, you are awash in energy every moment of the day, including right now. Take a moment to think of all the forms of energy that you can currently sense. Is the computer screen you are looking at bright or dim? How much light energy is entering your eyes? What sound energies are entering your ears? Are you cold or warm? All of these questions rely on your body's ability to take energy from the environment and convert it into usable signals that your brain can then perceive.



Whether you realize it or not, you are awash in energy every moment of the day, including right now. Take a moment to think of all the forms of energy that you can currently sense. Is the computer screen you are looking at bright or dim? How much light energy is entering your eyes? What sound energies are entering your ears? Are you cold or warm? All of these questions rely on your body's ability to take energy from the environment and convert it into usable signals that your brain can then perceive.

Module 3: Sensation and Perception

Topic 1 Content: Transduction Notes

Limitations

Transduction

Limitations

Humans are limited in the forms of energy signals they can detect. For example, there are radio waves that are passing through you at this very moment. These are the same signals that a radio is designed to detect and convert into sound through speakers. These waves are too long for your eyes to see, but they are still very much there.



Humans are limited in the forms of energy signals they can detect. For example, there are radio waves that are passing through you at this very moment. These are the same signals that a radio is designed to detect and convert into sound through speakers. These waves are too long for your eyes to see, but they are still very much there.

Module 3: Sensation and Perception

Topic 1 Content: Transduction Notes

More Limitations

Transduction

More Limitations

Similarly, bats use a process called echolocation to navigate and find bugs to eat. The sounds that bats emit bounce off of cave walls and mosquitoes. While they are too high in frequency for human ears to detect, they fall perfectly within the range of hearing for bats, which use the sounds to detect important information about location and motion of the objects around them.



Similarly, bats use a process called echolocation to navigate and find bugs to eat. The sounds that bats emit bounce off of cave walls and mosquitoes. While they are too high in frequency for human ears to detect, they fall perfectly within the range of hearing for bats, which use the sounds to detect important information about location and motion of the objects around them.