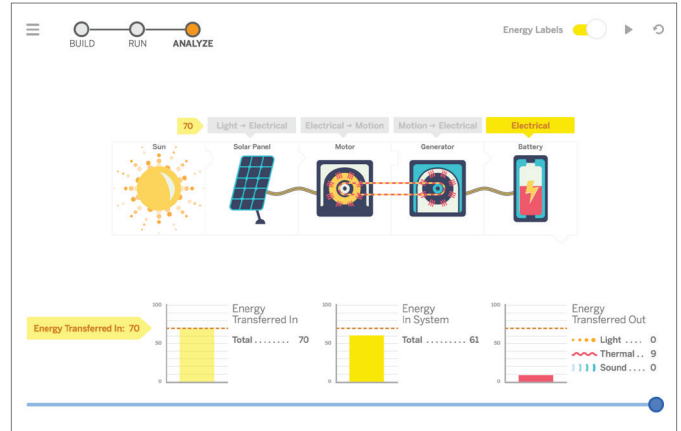


Introduction

Developed exclusively for Amplify Science, digital simulations, or “sims,” are interactive, virtual worlds that allow students to discover and construct understanding of science concepts and phenomena. Sims provide students with opportunities to explore scientific phenomena that might otherwise be challenging to investigate in a classroom because they are too small, large, slow, distant, dangerous, or difficult to manipulate directly. Much like real scientists do, students in Amplify Science use technology to explore and investigate phenomena, observe and identify relationships, model processes, make predictions, gather evidence, and apply their understanding of science concepts.

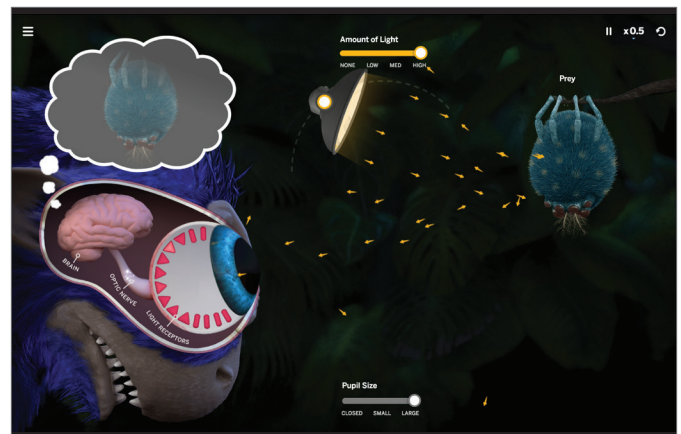
Energy Conversions

The Energy Conversions sim allows students to set up, modify, and compare different energy system configurations in order to explore different energy sources and investigate how energy changes as it moves through a system.



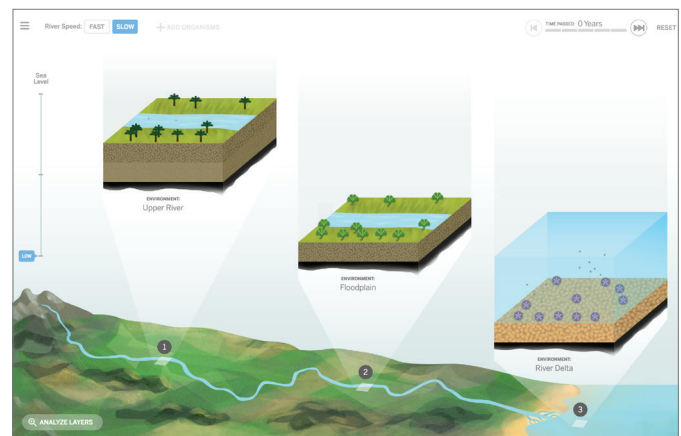
Vision and Light

The Vision and Light sim allows students to observe the movement of light and discover how light allows animals to see. Students are able to visualize how a predator sees and recognizes prey by changing the amount of light released, the direction of light released, and the size of the predator's pupil.



Earth's Features

The Earth's Features sim is a dynamic model that shows the processes of rock and fossil formation through the accumulation and compression of sediment over time. The sim allows students to see how different sediment accumulates in different environments, leading to the formation of different rock layers in those environments. It also models the formation of different kinds of fossils in different environments.



Waves, Energy, and Information

The Sound Waves sim allows students to explore and visualize how sound energy travels through a material. Sounds are represented as longitudinal (compression) waves, traveling through particles, and as waveforms. Students can play different pre-recorded sounds to view the corresponding sound waves. They can also design custom sounds by manipulating the amplitude and wavelength of waveforms.

The Code Communicator Tool supports students in understanding how information can be translated into patterns of zeroes and ones (binary code) and communicated via digital devices. By using the tool, students are able to explore how images, text, and sounds can be encoded into binary code, the language of computers, and also decoded back into images, text, and sounds.

