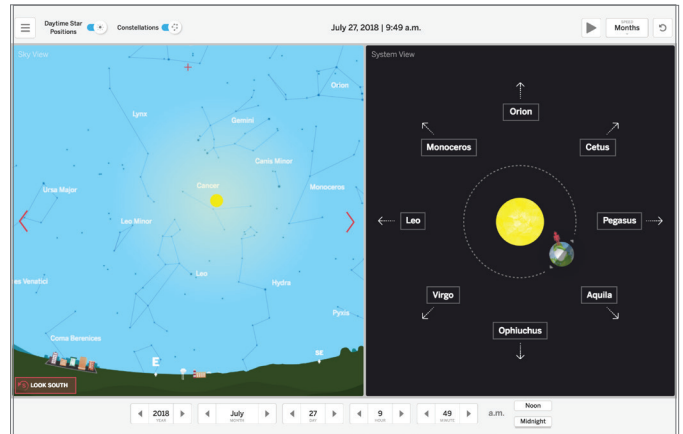


Introduction

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.

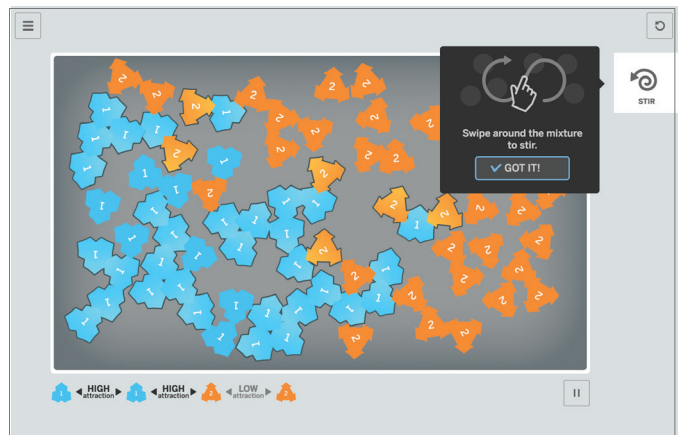
Patterns of Earth and Sky

The Patterns of Earth and Sky sim allows students to investigate the appearance of the sky any time from 2000 CE to 2100 CE. The sim also includes a model of the Earth/Sun system along with eight benchmark constellations. This model makes the sim different from other planetarium simulations, because students can use this Earth/Sun system to discover the causes of the daily pattern of daytime and nighttime and the yearly pattern of when certain constellations are visible in the night sky.



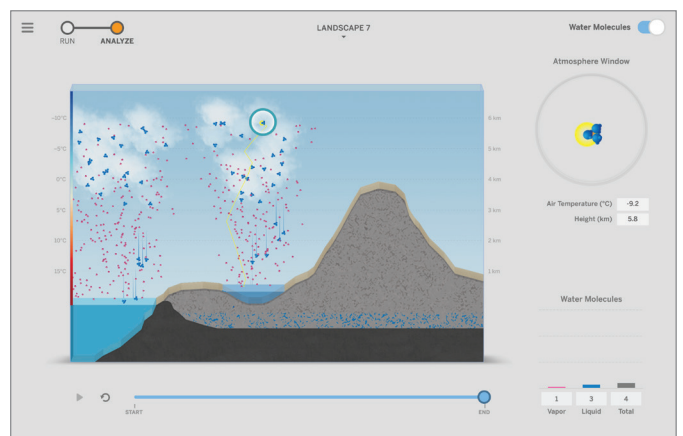
Modeling Matter

The Modeling Matter sim allows students to study solubility at the nanoscale. The sim is a dynamic model showing interactions of molecules based on their attraction to molecules of the same kind or to other kinds of molecules.



The Earth System

The Earth System sim is intended to help students connect the behavior of water molecules to the macroscopic weather patterns produced through these interactions. Students can investigate different landscapes—with varying configurations and sizes of oceans, lakes, and mountains—to understand how interactions between different parts of the Earth system create different patterns of rain.



Ecosystem Restoration

The Ecosystem Restoration sim allows students to control and observe the movement of matter in an ecosystem and discover how this affects the flow of energy through the ecosystem. There are visual data represented in the sim to help students develop an understanding of matter flow through an ecosystem and the connections between energy and matter in plants and animals.

