Science Self-Tutorials for Students

Coding in Astronomy

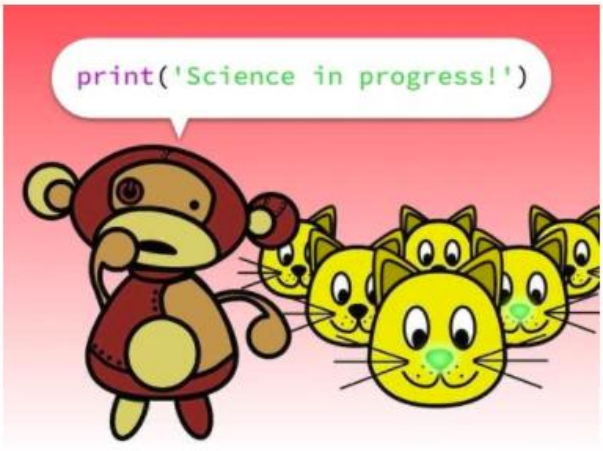
Quorum

Grades 6+ | Quorum

Learn about coding using themes from computational astronomy in this accessible online tutorial. In it, students will discover how to control telescopes while also practicing with the Quorum programming language's computer graphics engine. By the final lesson, students will create a graphical and accessible map of the stars to find items in the universe.

Start

https://hourofcode.com/quorumastro



Disease Epidemic

Grok Learning

Grades 9+ | Python

This activity is designed to give you your first experience programming, and has been specially designed for the Hour of Code. Use the programming language Python to model a disease outbreak. Can you solve the curious case of the glowing nose?

Start

https://hourofcode.com/grokdisease

Vidcode: Climate Science & Code

Vidcode

Grades 6+ | JavaScript

Students research a fact about the Earth's climate, engaging with the work of scientists and artists in response to climate change. Students take their research and plan a video sharing their fact. Videos can be about Understanding climate changes and its effects Public responses to the climate change effects How climate change impacts everyday life What actions can you take to make a difference

Start

https://hourofcode.com/vidclim

Teacher notes: https://app.vidcode.io/hourofcode/science-teacher-guide

Basketball

Codesters

Grades 6-8 | Blocks, Python

Students use our drag-to-text toolkit to start coding in Python right away! In this self-guided activity, students complete a series of direct-instruction activities in which they build a pull and shoot basketball game! Students explore variables, events, basic syntax, creating random coordinates. Advised prereq knowledge: variables, dot notation, events, negative numbers

Start

https://hourofcode.com/codestersbb

Teacher notes: https://goo.gl/VPNwSg

Ecological Pyramid STEM Kit

Tynker

Grades 2-8 | Blocks, Tynker, JavaScript, Python

Create an interactive ecological pyramid to track how energy flows through an ecosystem! This project comes with step-by-step instructions that guide you through creating an ecological pyramid for any ecosystem with animals and plants that glide to the proper location in the pyramid when clicked.

Start

https://hourofcode.com/tynkereco

Teacher notes: https://www.tynker.com/hour-of-code/tynker-stem-teacher-guide.pdf

Solar System STEM Kit

Tynker

Grades 2+ | Blocks, Tynker, JavaScript, Python

Program an interactive model of our Solar System. This project comes with step-by-step instructions that guide you through creating a simulation with planets orbiting the Sun. Then add facts about each planet that pop up when clicked.

Start

https://hourofcode.com/tynkersol

Teacher notes: https://www.tynker.com/hour-of-code/tynker-stem-teacher-guide.pdf