UCSD StudentTECH 2020

Beginning Coding for Middle School Students
Sponsored by the San Diego Supercomputer Center
University of California, San Diego

Learn Coding Using Minecraft

Intro to computational thinking skills and core computer programming concepts using block coding, JavaScript or Python to build and create in Minecraft.

Monday to Friday, August 10-14, 2020

Class meets at the UCSD Supercomputer Center from 8:30am to 3:00pm

Course Overview:

This fun and engaging course is comprised of five units (one major focus for each day) that combines a variety of computer programming skills. Incorporating interesting lessons where students immediately apply what they've learned in a structured, linear approach to build a city with road networks, buildings, a park, a zoo, and a wind farm in their Minecraft world—all through guided coding activities which helps keep students on task. Most daily units include three lessons (of approximately 45-60 minutes each) using what they've learned coding in relevant experiences. Furthermore, knowledge check questions are included to assess student learning and optional and advanced activities are available.

What is Minecraft?

With over 100,000,000 active monthly users this hugely popular game is all about going on adventures: collecting resources, placing blocks and communicating with other users all set in infinite worlds of wide open terrain. It extends up into the mountains, and down into dark caves filled with treasure and beware of the lava. Students find the fun comes from setting your own goals and deciding how you want to play on a given day. Maybe you work together to build a working farm with chickens and pigs or set off by yourself into the jungle in search of a jungle temple. Perhaps you will build an extravagant house with a spectacular view of the ocean, or mine deep unde0000000000000000000000000000000000000000000000000000000000000000000000000 0000000000000000000000000000000000000000000000000000000000000000000000000000 0000000000000000000000rground in search of diamonds and gems. There's always something fun and exciting to do, and no matter what you choose to do, you'll always learn more efficient

ways through coding and be thinking about faster ways to accomplish what you want to do using the coding skills you will be learning each day.

Course Structure and Learning Goals:

- Class meets at 8:30am and begins each day with a hands-on activity where students learn general computing concepts like:

Algorithms	Functions	Loops	Events	Conditionals
Sequencing	Variables	Abstraction	Debugging	Persistence

- Students login and learn programming using Minecraft Education Edition
  - Computing with Minecraft dev world
  - Microsoft MakeCode
  - JavaScript-and Python programming
  - Code Connection app
- Midday students break for a 30-minute lunch
- Back to class with hands-on activity, demonstration, presentation and/or video
- On the computer for the final couple of hours with class out at 3:00pm

Instructor:

Mr. James Morris, M.Ed.
- Computer Science Teachers Association, San Diego Chapter Board Member
- Engineering, Coding and Robotics Teacher at Millennial Tech Middle School
- Taught high school science and middle school computer science courses with the San Diego Unified School District for over 28 years

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