Microsoft's
Computer Science
Skilling Resources
for Students

Hello!

Welcome to **Microsoft's Computer Science Training Guide** – a one-stop shop for all of Microsoft's coding resources.

Whether you are a coding novice, or a complete pro, we have something for you! You might be wondering:

Why should I learn to code?

Coding is a great way to express your imagination and creativity – and flex your logical thinking skills.

When you learn to code, you develop various skills, like how to break down complex problems and solve them step-by-step.

Skills like problem solving can help you in your everyday life, and may even help you get your dream job sometime in the future.

Now, you might be thinking that...

learning or problem solving isn't my cup of tea

... but learning doesn't have to be boring.

In this guide you will find games, puzzles and videos demonstrating how coding plays a role in all sorts of interesting jobs.

From learning the basics, to creating a world of your own in Minecraft, there's sure to be something that takes your interest!

Small Basics

Welcome to Small Basics!

This app teaches you the basics of coding in a friendly, interactive environment. After learning just a few lines of code, you'll be well on your way to creating your very own game!

The tech teaches you as you type, and the interface is simple and easy to use. You can even show off the programs you make by sharing them with your friends online.

Why not see who can make the most interesting one?

Imagine Cup

Build it. Dream it. Live it.

Enter Microsoft's Imagine Cup competition for a chance to win cash or other great prizes by designing the coolest new technology.

We want you to put your skills to the test by creating technology which helps solve the world's biggest social, environmental and health issues.

Our worldwide competition has seen students just like you create incredible new products over the last 20 years, with some going on to have amazing careers in Computer Science.

And don't worry if you don't think your digital skills are up to scratch, the competition is for students of all abilities and will teach you all the basics of Computer Science.

Check out how the 2019 winner, 18-year-old Byran Chiang, designed an eye testing app to transform the way healthcare professionals monitor glucose levels **here**.

Kodu

Kodu lets you create games on the PC and Xbox through simple programming language. Anyone can use Kodu to make a game, it doesn't matter how much experience you have.

Kodu features an eye-catching design that makes it feel like a game by itself, and includes lessons and sample games to help you hit the ground running.

It's intended for young people with no or little experience with coding, so you don't have to worry about getting started – your skills will be up to speed in no time at all.

Creatively learn how programming can help you solve problems and tell stories by trying Kodu today.

Meet Code Creators

What career or careers are you interested in?

To help you explore Computer Science and how learning about it translates to interesting jobs, we've recorded five insightful classroom broadcasts with professionals who code every single day to create amazing things – even some that you wouldn't expect!

These videos include:

1 **Arts:** Fusion of Fashion, Dance & Technology

Interested in dance, fashion and design? You'll be more fascinated by Computer Science than you might think... discover why, here!

2 **Gaming:** Behind the Scenes with Minecraft

Hear from a Minecraft designer and a developer about how to build games and make them fun and engaging.

3 **Digital Storytelling:** How Technology Brought the Harry Potter Kindle Book to Life

Immerse yourself in films like Harry Potter and Fantastic Beasts and Where to Find Them like never before and discover the magic behind 3D animation and how it's changing storytelling. Did you know that all 3D animators have a background in Computer Science (or coding)?

4 **Animation:** How Computer Science Powers Movies

Ever wondered just how movies like Coco or Shrek are made? Stop wondering, and watch this video to discover how Computer Science brings your favorite movies to life.

5 **Artificial Intelligence:** How Machine Learning is helping our planet

You might have heard of artificial intelligence and machine learning, but how are they actually useful? Well, technology is being used to save our planet's most precious ecosystems in so many ways...today. Find out how in this video.
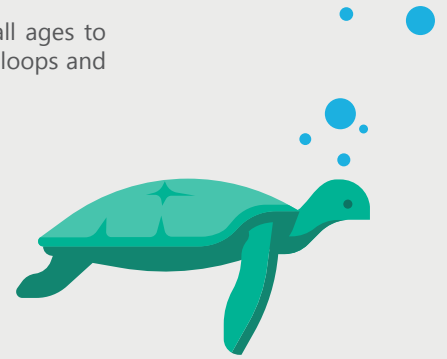
We've teamed up with Minecraft

Minecraft: Hour of Code

We've teamed up with everyone's favorite online game, Minecraft, to bring you the best coding puzzles to keep you entertained for hours on end.

Why not try out the **Minecraft Hour of Code: Voyage Aquatic tutorial**, and join an underwater treasure hunt with your friends?

Or how about the **Minecraft Hero's Journey tutorial**, where you can become a hero and design unique worlds.

There are currently 50 coding puzzles for students of all ages to play. By learning about Computer Science concepts like loops and conditionals, you'll be a coding pro in no time at all.

Minecraft: Education Edition

Wouldn't it be cool if you could play Minecraft at school? Well, we've helped develop a version of Minecraft that is specifically designed to be played in classrooms, including yours.

Microsoft has helped design a variant of Minecraft which allows you to explore, create and play in the Minecraft world to tackle forest fires and save villages! You can even play it together with your friends in the classroom.

This lesson was inspired by Microsoft's **AI for Earth** team, who use artificial intelligence to help solve global environmental challenges.

Code Builder for Minecraft: Education Edition is a special part of the game that teams you up with a robotic code building companion to complete coding challenges in the game. By the end of the tutorial, you'll be able to code commands to direct your buddy all around the Minecraft world!