



Texas 4-H Computer Science Project

Project Description

The Texas 4-H Computer Science project empowers youth to harness the power of technology, developing critical thinking and programming skills to solve real-world problems and shape the digital future.

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In the Texas 4-H Computer Science project, youth are introduced to the fascinating world of technology and its vast potential. Beyond merely understanding how to use gadgets and software, participants delve deep into the realms of coding, algorithmic thinking, and digital problem-solving. Through hands-on activities and challenges, they learn the intricacies of programming languages, web development, and even robotics. The project emphasizes not just technical know-how, but also cultivates critical thinking, creativity, and teamwork. This holistic approach equips them with the tools to not only thrive in our increasingly digital world but to actively shape its future.

Basic

- Introduction to computer hardware and software.
- Basics of operating systems and software applications.
- Understanding internet safety and digital citizenship.
- Introduction to algorithms and flowcharts.
- Basics of coding using block-based languages like Scratch.
- Fundamentals of website design using platforms like Wix or WordPress.

Intermediate

- Delving into more advanced programming languages such as Python or Java.
- Introduction to data structures and algorithms.
- Basics of mobile app development.
- Understanding of databases and basic SQL.
- Introduction to robotics and basic robot programming.

Advanced

- Mastery of advanced programming languages.
- Development of software applications.
- Deep dive into Artificial Intelligence and Machine Learning.
- Advanced robotics and automation.
- Cybersecurity fundamentals and ethical hacking.

TAKE COMPUTER SCIENCE FURTHER

Project Learning Opportunities:

- Participate in coding clubs or project groups
- Join Texas 4-H STEM Ambassador program
- Engage in Hour of Code events and online lessons
- Robotics programming workshops and contests
- Enroll in online courses
- Compete in ethical hackathons

Resources:

- Texas 4-H Computer Science
 - <https://texas4-h.tamu.edu/projects/computer/>
- 4-H Computer Science Playbook
 - https://texas4-h.tamu.edu/wp-content/uploads/computer_science_playbook.pdf
- Click 2 Computer Science
 - <https://click2computerscience.org/>
- Hour of Code
 - <https://hourofcode.com/us>
- Scratch
 - <https://scratch.mit.edu/>
- CS First
 - <https://csfirst.withgoogle.com/s/en/home>

Did you know?

4-H is a club for kids and teens to develop life skills and make friends. Youth can join 4-H in all 254 counties. Everybody ages 8-18 and in 3rd-12th grades can join 4-H. Kids in Kindergarten to 2nd grades can join as Clover Kids. There are 43 different project areas in five project categories: Agriculture & Livestock, Family & Community Health, Leadership & Citizenship, Natural Resources, and STEM.

Want to get started?

First...Contact your County Extension Agent!

- Contact information can be found at texas4-h.tamu.edu > contacts information at the bottom of the page > county offices

Explore more at texas4-h.tamu.edu