Computer Science

MISSISSIPPI STATE UNIVERSITY™
EXTENSION

The 4-H Computer and Internet Project provides an exciting opportunity for members to explore the fascinating world of computing and technology. By actively engaging in hands-on activities and guided exploration, participants will develop essential skills and knowledge that are crucial in today's digital age. From understanding computer hardware to exploring software applications and coding, this project equips members with valuable tools for success in academic, professional, and personal endeavors.

The 4-H Computer and Internet Project aims to empower members with essential skills and knowledge in computer hardware, software, and their applications in various fields. Through hands-on activities and guided exploration, participants will delve into the world of computing, learning about hardware components, operating systems, software applications, coding, and the role of computers in science, engineering, math, and technology.

4-H Thrive
Positive Youth Development

Developing Competence
Adults create environments where youth can develop competence in their chosen project area.

Building Confidence
Youth build confidence as they learn to think for themselves, build mastery, and are recognized for their efforts.

Nurturing Caring
Adults nurture a caring environment where mutual trust between youth and adults is established. Caring relationships with adults are key to resilient youth.

Finding Connection
Youth build solid connections which are critical to their well-being.

Forming Character
Create a community where youth play an active role in developing their character.

Determining Contribution
Youth actively contribute to their clubs and communities.

Mississippi State University is an equal opportunity institution.

Starting Out — Beginner	Learning More — Intermediate	Exploring Depth — Advanced
Hardware Exploration: Participants will learn about the basic components of a computer system, including the CPU, RAM, storage devices, and input/output peripherals.	**Advanced Hardware Concepts:** Understanding more advanced concepts in computer hardware, such as graphics processing units (GPUs), motherboards, and networking components.	**Hardware Troubleshooting:** Learning advanced troubleshooting techniques for identifying and resolving hardware issues.
Operating System Navigation: Introduction to navigating through the operating system interface (Windows or macOS) and basic file management techniques.	**Software Applications:** Exploring and utilizing software applications for specific purposes.	**Software Development:** Introduction to basic software development principles and practices, including algorithm design and debugging techniques.
Software Installation: Basic understanding of how to install and uninstall software applications for specific tasks.	**Coding Proficiency:** Enhancing coding skills with Scratch to create more complex programs and interactive projects.	**Advanced Coding Projects:** Engaging in more advanced coding projects using Scratch or other programming.
Introduction to Coding: Introduction to Scratch programming language to create simple animations	**Exploring Computer Applications:** Investigating the use of computers in various fields, including science, engineering, math, and technology, through interactive project & studies.	**Application in STEM Fields:** Exploring real-world applications of computer science and technology in STEM fields.

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Expand your experiences!

Advanced Coding:
Offer advanced coding workshops or online courses focusing on languages such as Python, JavaScript, or Java to further enhance participants' programming skills beyond Scratch.

Hardware Modification Projects:
Explore hardware modification projects, such as upgrading computer components, building custom PCs, or creating electronic gadgets using Raspberry Pi or Arduino kits.

STEM Competitions and Hackathons:
STEM competitions, hackathons, or robotics competitions where participants can apply their skills to solve real-world problems and collaborate with peers.

Internships or Apprenticeships:
Pursue internships or apprenticeships with local tech companies, IT departments, or STEM organizations to gain hands-on experience in the field.

Community Outreach Projects:
Organize community outreach projects where participants can use their skills to support local organizations or schools by providing tech support, teaching coding workshops, or assisting with technology-related initiatives.

Mentorship Programs:
Connect with industry professionals, college students, or experienced volunteers who can provide guidance, advice, and support as they further their exploration in computer science and technology.

Resources

[Computer Science & Programming with Scratch – Level 1](#)

[Computer Science & Programming with Scratch – Level 2](#)

[Computer Science & Programming with Scratch – Level 3](#)

[Computer Science & Programming with Scratch – Level 1 Facilitator Guide](#)

[Learn About Computer Science](#)

[National Center for Women and Information Technology](#)

[Code.org](#)

[Computational Thinking](#)

Connections & Events

For Cloverbuds & Juniors:
- Participation in Project Achievement Days, STEAM Day

For Seniors:
- Club Congress

Networking opportunities with peers, educators, and industry professionals.

Collaboration with other 4-H clubs and organizations on joint projects or presentations.

Curriculum

National 4-H Computer Curriculum:

- Computer Science & Programming with Scratch Level 1-3
- Junk Drawer Robotics, Level 3

Other:

- Computer Science Unplugged
- Computer Power Unlimited

4-H Record Book

Members will maintain a record book documenting their progress, experiences, and achievements throughout the project. The record book serves as a valuable tool for reflection, goal setting, and showcasing individual growth in computer science and technology skills.

The record book should be submitted in Other Project/Computer.