

Science, Engineering and Technology

4-H Computers

North Dakota 4-H Project Sheet

The 4-H computer project provides hands-on experiences in understanding, programming and building computers.

- Identify computer components and operating systems.
- Exhibit knowledge of building, maintaining and repairing computers.
- Demonstrate a basic understanding of networking.
- Work with peers, adults and community partners to develop service-related computer goals.



Here's what you can do all year!

Starting Out Basic/Level 1

- Assemble computer and software tool kits.
- Deconstruct and reconstruct a computer.
- Understand how computers use numbers.
- Troubleshoot PC hardware problems.
- Explore operating systems.
- Explore open-source resources.
- Install operating systems.
- Decide to upgrade or replace an old computer.
- Design a dream machine.

Learning More Intermediate/Level 2

- Identify network hardware.
- Design a computer network.
- Find an Internet protocol address.
- Understand different types of servers.
- Use different protocols to communicate.
- Identify computers on a local area network.
- Add peripherals to a network.
- Secure a networked computer.
- Share applications simultaneously.

Expanding Horizons Advanced/Levels 3

- Share the ways you use a computer with an adult.
- Understand technology needs in your community.
- Organize a team to identify and set goals for community technology needs.
- Contact community partners for your goals.
- Develop an activity plan.
- Use "Newbie Know-How" to teach a class on computers.

Pass it on!
Now that you know how,
share it with others. Here are
ideas to get you started.

Communication

- Demonstrate how to install a program or repair a computer.
- Create a display about different types of computers.

Citizenship

- Volunteer to help maintain computers at your local community center or library.
- Help other youth, senior citizens or others interested in learning about computers.
- Offer to teach a class on computer care at your local community center or library.

Leadership

- Teach younger 4-H members in your club about computers.
- Plan a trip to a computer business for your 4-H club.
- Plan a computer recycling day in your community

Entrepreneurship

- Start a computer repair service.
- Job shadow a computer programmer or business owner.



Learn more at www.ndsu.edu/4h or contact your county NDSU Extension office.



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Here are other opportunities to explore computers:

- Sign up for classes provided by your school or community education programs.
- Tour a local computer business (retail store, repair store, manufacturing company, etc.)
- Compete in your local <u>communication arts</u>
 contest with a speech or demonstration about computers.
- Create a display for the <u>project expo competition</u> about computers.
- Interested in a career in computers? Schedule a visit with North Dakota State University to explore Computer Science, http://cs.ndsu.nodak.edu/.



4-H Resources

National 4-H Computer Curriculum

- ◆ Level 1—Inside the Box
- ♦ Level 2—Peer to Peer
- ◆ Level 3—Teens Teaching Tech
- ♦ Newbie Know-How
- National 4-H Online
 Curriculum Information
- 4-H Computer Mysteries

Other Resources

- What is a Computer?
- CPU Online Activity
- Street Tech Toolkit
- TechSoup.org
- Computer User High Tech Dictionary
- Computer History
 Museum Center
- Smithsonian National Museum of American History

Recordkeeping

- 4-H Project Plan
- Planning for My Project <u>Adventure</u> (Ages 8-10)
- 4-H Plan of Action (Ages 11-18)
- ND 4-H Participation Summary for 11- to 19year-olds

Exhibit Ideas

- Create a labeled chart, graph, poster or 3-D display showing the components of a computer and how it works.
- Develop a display of consumer choices involved when buying a computer.
- Develop a display about the history of computers, changes in society resulting from the invention of computers, the ethics involved in using computers or another topic.
- Create a display about computer technology, languages or hardware other than monitors, keyboards or disk drives.
- Write a report of a study on a computer science career.
 Include positions available, skills needed, course work needed to obtain skills and programs offered at universities and other institutions that relate to the career.
- Develop software. Include a statement of objectives and a discussion of the program.
- Create a display showing how to use an application related to 4-H. Include a statement of purpose, a written plan for the use and an example of the use.

