Computer Project Exhibit Requirements

Current exhibit requirements are being deleted and replaced with the following:

10/2019

There are three exhibit grade level divisions; Grades 3-5, Beginner; Grades 6-8, Intermediate; and Grades 9-12, Advanced. Exhibits are to be skill appropriate for the member's grade level.

Youth enrolled in the computer project will select one of the below subject categories to study, regardless of grade. Youth may choose to create an exhibit demonstrating skills learned during the year. Check with your county Purdue Extension Office to determine if a computer will be available during judging and if there will be an opportunity to explain your exhibit to the judge. Exhibits qualifying for state fair are to be submitted on a thumb drive securely attached to a notebook/portfolio describing accomplishments, skills learned, design ideas, budget, a summary of what was done, etc. as the exhibitor will not be able to discuss their work with a judge. Poster exhibits are not acceptable. Youth may continue in the same subject category in subsequent years expand on the previous year's topic, or choose a new topic. Subject categories are:

- Block Based Programming
- Text Based Programming
- Web Design and Computer Entrepreneurship
- Computer Forensics
- Hardware and Networking Design/Install/Repair

Software must be compatible on both PC and Mac platform. If additional software other than Microsoft Office Suite is required to view the member's work, that software must be provided by the member and comply with all manufacturer copyright laws. Apps can be Android or IOS compatible.

All notebooks/portfolios must include a reference list indicating where information was obtained, giving credit to the original author, to complete the 4-H member's exhibit. This reference list should/might include web site links, people and professionals interviewed, books, magazines, etc. It is recommended this reference list be the last page of a notebook or included as part of the display visible to the public. A judge is not to discredit an exhibit for the manner in which references are listed.

A county may submit a total of three state fair entries, one entry per grade level division.

Blocked Based Programming:

Beginner – Grades 3-5 – Create a block based program using Scratch, Code Studio, Alice, or another graphic programming language of your choice. You should comment your work and it must include at least ten different commands. Skills this program could use are:

- Sequence
- Iteration
- Conditionals
- Variables
- Loops
- User input

Intermediate Grades 6-8 – Create a block based program using Scratch, Code Studio, Alice, or another graphic programming language of your choice. You should comment your work and it must include at least ten different commands. Skills this program could use are:

- More robust demonstration of beginner skills
- Modularization
- Lists

Advanced Grades 9-12 – Create a block based program using Scratch, Code Studio, Alice, or another graphic programming language of your choice. You should comment your work and it must include at least ten different commands. Skills this program could use are:

- More robust demonstration of Intermediate Skills
- Parameters
- Recursion

Text Based Programming

Beginner Grades 3-5 – This option is not available.

Intermediate Grades 6-8 - Create a text based program of your choosing using any text based language you are comfortable in. The code should demonstrate an understanding of at least 4 of these skills:

- Commenting
- Correct syntax
- Variables
- Loops
- Conditionals
- User Input
- Lists
- Functions
- Algorithms

Advanced Grades 9-12 - Create a text based program of your choosing using any text based language you are comfortable in. The code should demonstrate an understanding of at least 8 of these skills:

- A more robust understanding of the intermediate skills
- Interact with databases
- Classes
- Objects
- Methods
- Inheritance
- Integrate multiple languages into one program

Web Design and Computer Entrepreneurship

Beginner Web Design and Computer Entrepreneurship – Grades 3-5 - Build a businesslike website demonstrating a knowledge of:

- Use a website builder to create your website
- Insert non-stock image into your site
- Use a template to achieve a unified look
- Explain CSS in your documentation, what CSS is and why it's important
- Must have at least two pages and include all items listed above

Intermediate Web Design and Computer Entrepreneurship – Grades 6-8 - Build a businesslike website demonstrating a knowledge of:

- Create your own site or use a website builder
- Modify existing HTML
- Use HTML5
- Modify existing CSS
- Have a unified theme throughout
- Use a photo editing software to create custom images
- Must have at least five pages and include all items listed above

Advanced Web Design and Computer Entrepreneurship – Grades 9-12 - Build a businesslike website demonstrating a knowledge of:

- Create a custom site using appropriate industry tools
- Have a responsive website
- Add useful and appropriate plugins
- Test for and eliminate bugs
- Include links for social media
- Include custom audio/video
- Must have at least ten pages and include all items listed above

Computer Forensics (id theft, online bullying, ethical use of technology, responsible social media use)

Beginner Computer Forensics – Grades 3-5 – Research and create a 3-5 minute presentation on one of the following topics. Present to a group of peers and have an adult leader verify, create a YouTube or MP4 instructional video, or printed slides and notes using PowerPoint or similar presentation software.

- Media Balance and Well Being
- Privacy and Security
- Digital Footprint and Identity
- Relationships and Communication
- Cyberbullying, Digital Drama and Hate Speech
- News and Media Literacy

Intermediate Computer Forensics – Grades 6-8 – Research and create a 6-8 minute presentation on one of the following topics. Present to a group of peers and have an adult leader verify, create a YouTube or MP4 instructional video, or printed slides and notes using PowerPoint or similar presentation software.

- Digital Citizenship:
    - Media Balance and Well Being
    - Privacy and Security
    - Digital Footprint and Identity
    - Relationships and Communication
    - Cyberbullying, Digital Drama and Hate Speech
    - News and Media Literacy
- Cyber Security
    - Ethics and Society
    - Security Principles
    - Classic Cryptography
    - Malicious Software
    - Physical Security
    - Web Security

Advanced Computer Forensics – Grades 9-12 – Research and create a 10-12 minute presentation on one of the following topics. Present to a group of peers and have an adult leader verify, create a YouTube or MP4 instructional video, or printed slides and notes using PowerPoint or similar presentation software.

- Digital Citizenship:
    - Media Balance and Well Being
    - Privacy and Security
    - Digital Footprint and Identity
    - Relationships and Communication
    - Cyberbullying, Digital Drama and Hate Speech
    - News and Media Literacy

- Cyber Security
    - Ethics and Society
    - Security Principles
    - Classic Cryptography

- Malicious Software
- Physical Security
- Web Security

Hardware and Networking Design/Install/Repair

Beginner – Grades 3-5 – Choose 1-2 items from the list and create a report/presentation (including images) of what you did.

- Deconstruct and reconstruct a computer
- Learn and report how binary works and how computers use numbers
- Troubleshoot hardware problems
- Explore operating systems
- Investigate open source resources
- Install/upgrade operating systems
- Design a dream machine (give reasons)

Intermediate – Grades 6-8 – Choose 1-2 items from the list and create a report/presentation (including images) of what you did.

- Identify network hardware
- Design a computer network
- Explain Internet Protocol
- Explain different types of servers
- Use different protocols to communicate
- Add peripherals to a network
- Secure a networked computer
- Share applications simultaneously
- Setup a Raspberry Pi or other micro-controller

Advanced – Grades 9-12 - Choose one or two items from the list ad create a report/presentation (including images) of what you did.

- Design and implement a computer network
- Secure your network
- Understand technology needs in your community.
- Help to solve these needs by organizing a committee or team to work on identified issues.
- Teach a computer science class to younger 4-Hers.
- Build your dream computer
- Network multiple micro-controllers
- Research careers in technology