Barrow Student Technology Competition 2022-23
Category Judging Supplement

3D Modeling

Any original work digitally created and modeled in three dimensions using specialized software.

Models are NOT required to be printed on a 3D printer. Project must be presented in the software used to create the model(s).

- Project is complete and recognizable as a 3-dimensional model.
- Model is complete with elements of lighting, shadows, colors, textures, and shapes that create a realistic model.

Animation

Any original project that generally consists of a sequence of images of the motion of objects to create a video.

Animation can involve programming sprites to talk, move, and interact. This can include, but is not limited to, short movies, music videos, comical shorts, and others by using a variety of animation techniques, including stop-motion.

- Project displays a complete animation in its entirety
- Choice of colors, textures, and shapes creates realistic images.
- Movement is smooth and realistic with varying speeds in the movement of foreground and background objects.
- Design includes three or more objects or sources of movement, including the background

Audio Production

Any original audio production that has been edited/produced with digital tools. Projects may include speaking, singing, music, sounds effects, and other audio components.

The project must be displayed on a device using the program in which it was created to demonstrate to the judges how the software was used to create the finished project.

- Project has a clear beginning, middle, and end with audio effects and musical elements included throughout the entire project
- High-end production quality with no sound level problems, background noise, hiss, poor cuts, fades, etc.
- Speaking or singing is clearly well rehearsed
- Editing and effects are purposeful and effective in enhancing the project

Device Modification

Any device engineered and/or modified by students to serve a specific purpose or meet a specific goal. Device and parts do not have to be new. However, the device must be fully functional.

- Device meets a specific, real-world purpose
- Specific modifications made to the original device are appropriate to the overall goal of the project
- Finished device is aesthetically pleasing

Digital Game Design

Project includes original content, design, and rules of an interactive game.

Project should demonstrate creativity, originality, organization, and interactivity. Students should be able to explain to judges what inspired their game idea and how they programmed their game to achieve project goals.

- Project should be an interactive, finished game with a clear rule set and goal
- Game should be playable by one or more people
- Game has high quality sound, animation, environments, and elements
- Game should be fun, challenging, and engaging
- Easy navigation of game environments and menus

Digital Photo Production

Any project using a single original student photograph where digital editing tools were used to enhance/modify the image.

The project must be displayed on a device using the program in which it was created to demonstrate how the software was used to create the finished project.

A hard copy of the finished project may be displayed but is not required.

- Student presents all edits in order to show the editing process from the original photo to the final, completed project
- Final image is high quality with proper levels of exposure and white balance
- Final image is properly composed due to the placement of objects in the image in relation to the location of the camera
- Multiple edits work together to create specific effects on the photo.

Graphic Design

Any combination of static images and/or words into a single design to convey information or an idea with an intended effect.

The project, including all images and content, must be displayed on a device using the program in which it was created.

- The graphic is fully-completed and aesthetically pleasing
- Use of colors, textures, shapes, and layout are cohesive and enhance the overall theme of the design

Internet Applications

Any network-based applications, such as: websites, chat rooms, forums, and blogs.

The project must be displayed on a device to demonstrate elements of the design and production process. Source code must be available where applicable.

- Application is complete and functional with no apparent bugs.
- Layout and user interface are consistent and intuitive
- Overall design and functionality are impressive
- Individual elements work together to enhance the aesthetics and functionality of the application

Mobile Apps

Any app that is specifically developed for a mobile device using a mobile operating system.

The student(s) must be able to run the app on the day of the competition on a device or a mobile simulator to explain what inspired their idea and how they programmed their app to achieve its intended purpose.

- App should function as designed on a device or simulator with no apparent bugs in the demonstration
- App has a well-stated purpose, description, and intended audience
- User interface is visually appealing and intuitive
- App utilizes some device peripherals such as microphone, accelerometer, GPS, camera, etc.

Multimedia Applications

Any multi-page creative presentation using any combination of media including audio, video, images, or text.

A Storyboard may be displayed to show sequencing of project creation.

- The combination of multimedia elements and content reinforces the intended message
- Special attention is given to the layout of text, graphics, and special effects
- Project gives the viewer a thorough understanding of the topic

Productivity Design

Any project developed from various non-multimedia application programs such as desktop publishing, word processing, spreadsheets, databases or any other non-multimedia software.

Hard copies of projects may be displayed at original size to show the judges, but no large displays are allowed.

- Layout follows best practices, is logical and appealing
- Design elements (graphics, fonts, colors, etc) enhance and reinforce the intended message
- Masterful selection and use of graphics to enhance the overall project

Project Programming

Any executable program created by the student using a recognizable programming language, such as: Java, JavaScript, C++, Python, Scratch, Blockly, etc. All parts of the program must be the author's own design. Programs must be functional and be identifiable in one of the following categories:
1. Computer-aided instruction or educational/learning game
2. Business or commercial application
3. Personal applications that, with minor alterations, could be marketed for larger commercial audiences.

- Program functions as designed to serve its specific purpose with no apparent bugs in the demonstration
- Program is able to be compiled as a self-executing file
- Program solutions are easy to understand and maintain
- Comments are used throughout the code to aid in troubleshooting
- Code is organized and efficient without repeating throughout the project

Robotics

Any autonomous machines engineered and programmed by the student from their own concepts and designs, or published drawings/kits.

Devices controlled through direct, real time remote control by the student are not appropriate (i.e. remote-controlled cars). Once started, the robotics project should operate as a standalone independent machine without human interaction.

- Robot completes one or more specific tasks as designed through student created programming
- No human interaction or remote-control input is required once the machine is started
- Entire machine is focused on performing an efficient solution for the stated task

Video Production

Any original video project that has been edited on a computer with digital video editing software and exported into a digital video format. The project must be displayed for viewing on a computer in order to demonstrate the software and production process.

This category does NOT include Stop-motion or animation projects.

- Project is an original student created video edited by the student to enhance the final product
- Student can explain the purpose and process of each included edit
- Audio and video have smooth transitions that enhance the overall presentation
- Audio segments have a consistent quality and are properly synchronized with the video segments
- All edits are clean and effective