show their multimedia skills. In general, multimedia includes a combination of text, audio, still images, animation, video, or animation. Multimedia combines multiple content forms. Youth are responsible for submitting clear directions on how judges can access the files. See additional exhibit requirements, above, for Computer classes. Evaluation: Use Computer Software Application Evaluation.

861 100 2__ __ Computer Programming: Description - Projects created by youth that show learning in the area of programming. Project should be created by the participant to show their programming skills. Hard copy or travel/thumb drive (for programs with excessive pages, such as GameMaker software) of the program must be submitted. It is up to the youth to ensure the program will function or display at Fair Youth are responsible for submitting clear directions on how judges can access the files. Submit information that allows a judge to look at the programming code in order to evaluate your work on the Computer Programming Project Description Form. If only an executable (compiled) product is submitted the project cannot be judged in the computer programming class. See additional exhibit requirements, above, for Computer classes. Evaluation: Use Computer Programming Evaluation.

861 100 3__ __ Computer Hardware Design: Description - Projects created by youth that show learning in the area of hardware. Project should be an original creation by the participant that shows their computer hardware skills. It is up to the youth to ensure the hardware and project will function or display at Fair. Intermediate and Senior members are expected to have apply their projects to real world scenarios. Youth are responsible for submitting clear directions on how judges can access the files. See additional exhibit requirements, above, for Computer classes. Evaluation: Use Computer Hardware Evaluation.

861 100 4__ __ Computer 3D Printer Application: Description - Projects created by youth that show learning in the area of 3D design and printing on a 3D printer. Project should be an original creation by the participant that shows their skills. Each exhibit must include the item created with the 3D printer and a series of screen shots from the design software that show the (1) early stages, (2) middle stages and (3) final stages of the design process. Application Project Description for the exhibit form filled out neatly and securely attached to the exhibit. *4-H Project Description* sheets are posted on the state website. See additional exhibit requirements, above, for Computer classes. Evaluation: Use Computer Software Application Evaluation.

ROBOTICS

1. Each exhibit piece must be labeled with the member's name, county and class number. If more than one article is contained in the exhibit each article must be labeled with the member's name, county and class number. This may be done with masking tape, attaching an index card, or writing directly on the back with a marker. All the articles that comprise the exhibit must be attached to each other.
2. Each exhibit must include the current year's edition of the appropriate Project Description for the exhibit form filled out neatly and securely attached to the exhibit. *4-H Project Description* sheets are posted on the state website. Be sure to use the newest version of the Project Descriptions for each technology exhibit. Exhibitors should answer the description page carefully and in full sentences. This is the exhibitor's opportunity to tell the judge about their project. Judging Evaluations can be found on the state website. These provide valuable information to youth on creating their project displays.
3. Education Posters may be a poster or a three-dimensional display. Individual exhibits are **limited in size to 30" wide, 24" deep (front to back), and 36" high. Club exhibits are limited in size to 60" wide, 24" deep and 36" high.** Posters must not exceed 22"x 28". Judging criteria are outlined on the *4-H Education Display Check Sheet* (40-463) available from the county Extension Office or the state 4-H website. An *Educational Display Exhibit Explanation Card* (000-01) must be attached to each exhibit.

Note: Fill in blank in class number (__) with one of the following numbers for level.

11 Junior, First year in this project area
21 Other Junior
12 Intermediate, First year in this project area
22 Other Intermediate
13 Senior, First year in this project area
23 Other Senior
34 Club Exhibit

863 102 1__ __ Education poster- Junk Drawer Robotics Level 1: An educational poster on any robotics topic youth learned about in Junk Drawer Robotics, Level1, Give Robots a Hand, addressing the theme robotic arms, hands and grippers.

863 102 2__ __ Education poster- Junk Drawer Robotics Level 2: An educational poster on any robotics topic youth learned about in Junk Drawer Robotics, Level 2, Robots on the Move, addressing the theme moving, power transfer and locomotion.

863 102 3__ __ Education poster- Junk Drawer Robotics Level 3: An educational poster on any robotics topic youth learned about in Junk Drawer Robotics, Level 3, Mechatronics, addressing the theme the connection between mechanical and electronic elements.

863 103 1__ __ Robotics / Lego Robotics: Description - An exhibit of two parts: (1) a robot made by the member, and (2) a Robotics Engineering Journal. Projects should be a robot created by youth. For the purposes of this project exhibit, a robot is defined as a machine that is electrical and mechanical and is ***guided by a computer program***. They can be created from kits or from miscellaneous parts. All robots will be returned after fair. More weight is given for youth designed projects. Robots will be judged on structural stability, creativity, functionality. Youth are responsible for submitting clear directions on how judges can access the files and make the robot function. Robot and a full description of what it is meant to accomplish must be submitted. A Robotics Engineering Journal is required. Include the date of each meeting, names of the persons present and a record of what was done. Include photos, illustrations and examples of software code developed or changed. The journal information will be used by the member to fill out the Robotics Project Description sheet for fair. It is important that the member downloads the Robotics Project Description sheet from *4-H Project Description* sheets posted on the state website to know what is required in the Journal. Be sure the Journal includes the problem/task you choose to solve or what you hoped to accomplish. What were the goals of this project? What is the robot programmed to do? List the steps you used to solve the problem or accomplish your task. What materials (software, books, online resources, kits) did you use? Explain your results and provide a thoughtful evaluation of the project. If you were to do it again, how/what would you do differently or how would you improve your project? Who was involved in this project?