SCIENCE, ENGINEERING AND TECHNOLOGY PROJECTS


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Superintendents:
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1. All Engineering exhibitors **must schedule** an interview with the judge or have the project Superintendent consent for absentee judging. **To schedule an interview, contact the Extension office at 541-967-3871 on Monday, June 29th or Tuesday, June 20th from 10 am to 2:30 pm.** Members not appearing for the interview will not be eligible for state competition, except those excused by the 4-H Engineering Superintendent. In those cases, a written interview must accompany the exhibit entered for absentee judging. The written interview must include a reason for your inability to attend the interview as well as skills learned and used preparing the exhibit.
2. To qualify for judging, a 4-H Computer Explanation Card must be securely attached to the exhibit. Forms are available at the county Extension office and on the State 4-H website at: http://oregon.4h.oregonstate.edu/fair-exhibit-and-contest-materials. A sheet answering additional questions is required for county judging (see below).
3. Print version of the program must be submitted. Youth are responsible for submitting clear directions on
4. how judges can access the files. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences. . **In addition to exhibit tag and information sheet, each exhibit must be labeled with the member's name, county and exhibit class number. If more than one article is contained in the exhibit then each article must be labeled (as above) and attached to each other. This may be done with masking tape/index card with a marker or writing directly on the back with a marker.**

COMPUTER

Note: Any 4-H member may enter an exhibit in the computer area. You do not have to be enrolled in the Computer Project to enter.

Note: Identify a problem to solve or a project to work involving technology. Possible ideas might include: applying existing software programs to a 4-H project area, composing music, developing a game, drawing landscape scenes, designing buildings, publishing club newsletters, creating a website, editing a video, working with photographs, etc. Robotic projects are appropriate only if the software or the hardware is developed by the 4-H member. These classes are open to all 4-H members without being enrolled in computer project.

To qualify for judging each exhibit must have a *4-H Project Description* securely attached.
http://oregon.4h.oregonstate.edu/resources/materials.html

Project Description Sheets and Judging Evaluations can be found at:
http://oregon.4h.oregonstate.edu/resources/materials.html

You may include disks or CDs as part of your exhibit. If you do, all files must be:
-Compatible with a PC

Online projects using Google applications or other Web 2.0 software are acceptable. Youth must make sure clear directions are given in the project explanation so the judges can find and access the project online. Website exhibits must be viewable online or on a cd format.

Exhibits entered in the "Programming" class must be a program written, translated, or substantially (at least 30%) altered by the 4-H member. Programming projects please submit a hard copy with all exhibits.

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

861 100 1_ _ Software Application, Word Processing
Description: Projects created by youth that show learning in the area of word processing. Project should be an original creation by the participant that shows their word processing skills. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

861 101 1_ _ Software Application, Excel/Spreadsheet
Description: Projects created by youth that show learning in the area of spreadsheet design and usage. Project should be an original creation by the participant that shows their spreadsheet skills. Intermediate and Senior members are expected to have some formula usage in their project. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

861 102 1_ _ Software Application, Presentation Software
Description: Projects should be created by youth to show learning in the area of presentation design skills. Software can be any current presentation software including online versions like Google applications or voicethread.com. Project should be created by participants to show their presentation design skills. Youth can also submit video clips of how the presentation was used. (For example: A video clip of the youth using the presentation in a group activity.)Youth are responsible for submitting clear directions on how judges can access the files. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

861 103 1_ _ Software Application, Graphic Design/Digital Imaging
Description: Projects should be created by the participant to show their graphic design or digital imaging skills. Software can be any current presentation software including online versions. Project should be an original creation by the participant that shows their graphic design or digital imaging skills. Youth are responsible for submitting clear directions on how judges can access them or program. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

861 104 1_ _ Software Application, Database Management
Description: Projects created by youth that show learning in the area of database management. Project should be an original creation by the participant that shows their spreadsheet skills. 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. Value is placed on youth that can model the learning process, or show how their skills

have increased while completing the project. Participant should answer the description page carefully and in full sentences.

861 105 1_ _ Software Application, Multimedia Projects

Description: Projects should be created by the participant to show their multimedia skills. Software can be any current software including online versions. Project should be an original creation by the participant that shows 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. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

861 100 2_ _ Programming

Description: Projects should be created by the participant to show their programming skills. Project should be an original creation by the participant that shows their programming skills. Hard copy of program must be submitted, and it is up to the youth to ensure the program 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. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

861 100 3_ _ 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. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

863 100 1_ _ Lego Robotic Construction:

Description: Judging of Lego Robot. Robot and full description of what it is meant to accomplish must be submitted. Robots will be judged on structural stability, creativity, functionality. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

863 101 1_ _ Lego Robotic Programming Tasks:

Description: Judging of stated programming task for a robot. Print version of the program must be submitted. Youth are responsible for submitting clear directions on how judges can access the files. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

863 102 1_ _ Lego Display –

Description: An original creation built out of Legos. Does not need to be robotic. Participant should answer the description page carefully and in full sentences.

863 103 1_ _ Robotics –

Description: Project should involve youth created robots. 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. Robot and full description of what it is meant to accomplish must be submitted. 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 robot function. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

860 100 1_ _ GPS/GIS, Projects

Description: GPS or GIS Projects. Projects consist of a detailed goal, and multiple applications of either GPS or GIS skills. A conclusion is reached, a problem was evaluated or studied, a solution was found (or the problem was better defined) Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences

860 101 1_ _ GPS/GIS, Maps

Description: A map is a single product of the data gathering, manipulation and presentation skills. Maps can be computer generated or hand drawn.
Multiple maps should be entered under GPS/GIS Projects. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

860 200 1_ _ Geography –

Description: Projects involving youth learning and displaying knowledge about geography. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

851 100 1_ _ Aerospace/Aeronautics–

Description: Projects involving youth learning and displaying knowledge about Aerospace or Aeronautics. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences.

852 100 1_ _ Rocketry –

Description: Projects involving youth learning and displaying knowledge about Rocketry. Value is placed on youth that can model the learning process, or show how their skills have increased while completing the project. Participant should answer the description page carefully and in full sentences. Rocket launch may be available at Oregon State Fair. If launch is not available, projects will be based on rockets and write ups regarding a group launch.

800 600 1_ _ Science Fair (State Fair Only)–

Description: "The Best of Oregon" Science and Technology Competition

Who: Elementary grade students (4th, 5th or 6th grade level)
What: New Science & Technology Competition
When: During participating county fairs and at Oregon State Fair 08/22/08 – 09/01/08
Where: Various statewide county fairgrounds and at Oregon State Fairgrounds
Why: To foster Science & Technology education and innovation

Science Fair rules available at:
http://www.oregonstatefair.org/competition/science

Summary (State Fair ONLY):

A new statewide Science and Technology competition will begin in 2008 with elementary school students. The competition will grow to include other academia levels and entrepreneurial endeavors in subsequent years.

Categories:
Biology – Animal Sciences, Plant Sciences
Earth – Geology, mineralogy, climatology, geography, meteorology and soil
Consumer Products Testing – Product quality, effectiveness, usefulness, economy, cost, smell, and environmental friendliness
Energy & Transportation – Alternative fuels, fossil fuel energy, solar energy, wind energy, wave energy, and conservation of energy
Environmental Science – Study of pollution, sources, controlling pollution and waste management
Sustainability – Recycling or reuse comparisons, conservation and green living

861 600 1_ _ Challenges –
Challenge 1: Sumo Bot
Cost $10
Work in a group of four youth to build the bot that lasts the longest in the ring.
(Contest will take place August 25-26, 2008, 10 AM – 12 PM in 4-H Exhibit Building. Schedule through county Extension office or 4-H State Fair office when you arrive at State Fair)

Challenge 2: The Fastest Bot
Cost $10
Work in a group of four youth to build the bot that lasts the longest in the ring.
(Contest will take place August 25 -25, 2008, 1 PM – 3 PM. in 4-H Exhibit Building. Schedule through county Extension office or 4-H State Fair office when you arrive at State Fair)

Challenge 3: Catapult/Trebuchet
Bring your own Catapult/Trebuchet to the fair on (August 25-26, 2008 4 PM – 6 PM)
to participate in the Catapult Challenge. Catapult/Trebuchet must be made entirely of Lego pieces. Rubber bands or cotton thread are also acceptable. Catapults will be launching large marshmallows. Marshmallows that fly the furthest will receive a ribbon.

Robot Presentation Contest
Individuals or teams of intermediate aged youth (grades 7-9) and senior aged youth (grades 10-12) will have an opportunity to bring their robot to State Fair and present/demonstrate its abilities and functions to a judge. Participants will be pre-scheduled through the county Extension office to receive a specific time. Walk in participants will be scheduled in 4-H Exhibit Building on a first come first served basis. Time will be limited with the judge to 1 hour, so come prepared with all parts and equipment ready to present to allow other contestants to present at their scheduled times. All equipment and materials will be provided by the participant and taken home after the presentation. **Robot Presentations limited to August 22, 23, 29 & 30, will be allowed one hour to present 1PM – 4PM.**

211 600 032 Robot Presentation, Intermediate, Individual
211 600 033 Robot Presentation, Intermediate, Team
211 600 042 Robot Presentation, Senior, Individual
211 600 043 Robot Presentation, Senior, Team

ELECTRIC ENERGY

Exhibits will be judged in the following way:
Appearance - 25 points
Workmanship - 25 points
Operation - 25 points
Electrical principles demonstrated - 25 points

Exhibits will be any of the articles included in the project manuals, or other articles that show skills learned in the project. Items must be labeled with member's name, county, and class number. To qualify for judging, an *Electric Energy Explanation Card* must be attached. Forms are available at the county Extension office and on the State 4-H website at: http://oregon.4h.oregonstate.edu/resources/materials.html. If a kit is used, indicate on tag. **Intermediates and seniors include a schematic diagram.**

862 100 001 Electricity, Junior
862 100 002 Electricity, Intermediate
862 100 003 Electricity, Senior

WOODWORKING

In each class the exhibit shall be one article or pair of articles made of wood by the 4-H member. Judging criteria are outlined on 4-H Woodworking Exhibit Score Card (40-635), available at the County Extension Office or on the State 4-H website at http://oregon.4h.oregonstate.edu/resources/materials.html.. In writing, describe the type of wood finishes, how the item will be used, operating instruction (if appropriate), and how the item was assembled. If power tools were used, attach a tag indicating what tools were used. If a kit is used, indicate on tag. Explanations are required to qualify the exhibit for judging.

871 100 001 Woodworking, Junior
871 100 002 Woodworking, Intermediate
871 100 003 Woodworking, Senior