

DIVISION D - MECHANICAL SCIENCES

D-1 Bicycle

Project will be evaluated on the quality of information completed in the manual and e-record (25 percent) and quality of exhibit (75 percent).

Class

1. Unit 1 – Bicycling For Fun - Junior
2. Unit 1 – Bicycling For Fun – Intermediate
3. Unit 1 – Bicycling For Fun - Senior
4. Unit 2 – Wheels In Motion - Junior
5. Unit 2 – Wheels In Motion - Intermediate
6. Unit 2 – Wheels In Motion - Senior
7. Unit 3 – Bicycle Self-Determined - Intermediate
8. Unit 3 – Bicycle Self-Determined - Senior

Exhibits will consist of the following:

- A. Completed project manual and e-record presented in a study binder/notebook.
- B. A display board illustrating a topic investigated during the project year. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.
- C. Label each item with your name and county.

D-2 Computers

1. 4-H members may stay in a Unit for more than one year. The exhibit has to be different each year.
2. Youth are only allowed to enter a display board exhibit or CD or DVD or a stand-alone exhibit, NOT all. Be sure that the CD or DVD is packaged to prevent damage to it. Project will be evaluated on the quality of information completed in the manual and e-record (25 percent) and quality of exhibit (75 percent).

Class

1. Newbie Know-How – Junior
2. Newbie Know-How – Intermediate
3. Newbie Know-How – Senior
4. Inside The Box - Junior
5. Inside The Box – Intermediate
6. Inside The Box - Senior
7. Peer To Peer – Intermediate
8. Peer To Peer – Senior
9. Computer Science – Junior
10. Computer Science – Intermediate
11. Computer Science - Senior
12. Computers 21st Century – Intermediate
13. Computers 21st Century – Senior
14. Teens Teaching Tech – Senior
15. Newbie Know-How – Stand Alone - Junior
16. Newbie Know-How – Stand Alone - Intermediate
17. Newbie Know-How – Stand Alone - Senior
18. Inside The Box – Stand Alone - Junior
19. Inside The Box – Stand Alone - Intermediate
20. Inside The Box – Stand Alone - Senior
21. Peer To Peer – Stand Alone - Intermediate
22. Peer To Peer – Stand Alone - Senior
23. Computer Science – Stand Alone - Junior
24. Computer Science – Stand Alone - Intermediate
25. Computer Science – Stand Alone - Senior
26. Computers 21st Century – Stand Alone - Intermediate

27. Computers 21st Century – Stand Alone - Senior

28. Teens Teaching Tech – Stand Alone - Senior

Exhibits will consist of the following:

A. One sturdy binder/notebook that contains the project manual or copy of page 5 – Achievement Program Requirements with explored areas completed (page 5 of manual for Units: Newbie Know-How, Inside the Box, Peer to Peer and Teens Teaching Technology only) or the Discovering Computer Science & Programming Through Scratch manuals for that unit (Discovering Computer Science & Programming Through Scratch and Computers in the 21st Century) and completed e-record.

B. A completed exhibit consists of *ONE* of the following:

1. A display board illustrating a topic learned as a part of the 4-H project. Potential display ideas can be found in the Expand Your Memory in the manual for Newbie Know-How, Inside the Box, P2P-Peer to Peer and Teens Teaching Tech only. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board. All items must be attached to display board.

2. A stand-alone exhibit demonstrating a skill learned or an item developed. For example, a Makey Makey keyboard or a micro controller project. All stand-alone projects are subject to risks of display at county and state fair if eligible.

3. A CD or DVD with the program or a video of the project. This CD or DVD must be playable on a PC.

D-3 Electricity

Project will be evaluated on the quality of information completed in the manual and e-record (25 percent) and quality of exhibit (75 percent).

NOTE: Please make sure that all items are attached securely to the exhibit and that they are labeled with the name of the exhibitor.

Judges will judge entire electricity project for a cash award given by K.C. Electric Assn. - 1st-\$100, 2nd-\$75 and 3rd-\$50.

Class

1. Unit 1 - Magic of Electricity - Junior

2. Unit 1 - Magic of Electricity - Intermediate

3. Unit 1 - Magic of Electricity - Senior

Exhibit will consist of the following:

A. Completed 4-H Electric project book and e-record presented in a sturdy binder/notebook.

B. One article or display board (not both) which you have made as a part of this unit of study. (Example: homemade flashlight, simple switch, circuit with two batteries and one light bulb, compass, electromagnet, galvanometer, electric motor, etc.). The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.

C. Label each separate part with your name and county.

4. Unit 2 - Investigating Electricity - Junior

5. Unit 2 - Investigating Electricity - Intermediate

6. Unit 2 - Investigating Electricity - Senior

Exhibit will consist of the following:

A. Completed 4-H Electric project book and e-record presented in a sturdy binder/notebook.

B. One article or display board (not both) which you have made as a part of this unit of study. (Example: circuit diagrams with explanation, series circuit, parallel circuit, momentary switch, three-way switch, soldered connection, rocket launcher, burglar alarm, etc.). The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.

C. Label each separate part with your name and county.

7. Unit 3 - Wired For Power - Junior

8. Unit 3 - Wired For Power - Intermediate

9. Unit 3 - Wired For Power - Senior

Exhibit will consist of the following:

- A. Completed 4-H Electric project book and e-record presented in a sturdy binder/notebook.
- B. One article or display board (not both) which you have made as a part of this unit of study. (Example: electrical tool and supply kit, display of symbols on wires and cables and their meanings, display of light bulbs and the jobs they do best, display board on how to read an appliance name tag, chart showing the electrical usage of appliances, display board on how to replace a switch, etc.) The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.
- C. Label each separate part with your name and county.

10. Unit 4 - Entering Electronics - Senior Advanced

Exhibit will consist of the following:

- A. Completed 4-H Electric project book and e-record presented in a sturdy binder/notebook.
- B. One article or display board (not both) which you made as a part of this unit of study. (Example: display of electronic parts, diode, transistor, light-emitting diode (LED), LED flasher photocell alarm, light meter, silicon controlled rectifier (SCR) intruder alarm, 6-8 watt amplifier with integrated circuit, etc.) The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.
- C. Label each separate part with your name and county.

D-4 Small Engines

Project will be evaluated on the quality of information completed in the manual and e-record (25 percent) and quality of exhibit (75 percent).

Class

- 1. Unit 1 - Crank It Up - Junior
- 2. Unit 1 - Crank It Up - Intermediate
- 3. Unit 1 - Crank It Up - Senior

Exhibits will consist of the following:

- A. A completed Small Engines manual and e-record presented in a sturdy binder/notebook including appropriate sections in the manual completed and other items such as diagrams, drawings, photographs or attachments related to activities in the manual.
- B. Exhibit may be a display board or a stand-alone item (not both) such as: air and fuel systems, the electrical systems, a diagram of the engine block, etc. A display board can be on any topic from the Small Engines manual. You may use diagrams, drawings and photographs. Label and use captions to make your display as educational as possible. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.
- C. Label each item with name and county.

- 4. Unit 2 - Warm It Up - Junior
- 5. Unit 2 - Warm It Up - Intermediate
- 6. Unit 2 - Warm It Up - Senior

Exhibits will consist of the following:

- A. A completed Small Engines manual and e-record presented in a sturdy binder/notebook including appropriate sections in the manual completed and other items such as diagrams, drawings, photographs or attachments related to activities in the manual.
- B. Exhibit may be a display board or a stand-alone item (not both) such as: air and fuel systems, the electrical systems, a diagram of the engine block, etc. A display board can be on any topic from the Small Engines manual. You may use diagrams, drawings and photographs. Label and use captions to make your display as educational as possible. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.
- C. Label each item with name and county.

- 7. Unit 3 - Tune It Up - Junior
- 8. Unit 3 - Tune It Up - Intermediate
- 9. Unit 3 - Tune It Up - Senior

Exhibits will consist of the following:

A. A completed Small Engines manual and e-record in a sturdy binder/notebook including appropriate sections in the manual completed and other items such as diagrams, drawings, photographs or attachments related to activities in the manual.

B. Exhibit may be a display board or a stand-alone item (not both) such as: air and fuel systems, the electrical systems, a diagram of the engine block, etc. A display board can be on any topic from the Small Engines manual. You may use pictures or any records you kept to provide evidence of your accomplishments and what you learned. Label and use captions to make your display as educational as possible. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.

C. Label each item with name and county.

10. Unit 4 - Advanced Small Engines - Junior

11. Unit 4 - Advanced Small Engines - Intermediate

12. Unit 4 - Advanced Small Engines – Senior

NOTE: This unit can be used for any type of engine (tractor, car etc.)

Exhibits will consist of the following:

A. A completed Small Engine Unit 4 e-record with emphasis on your accomplishments in your story presented in a sturdy binder/notebook. (Self-Determined)

B. Include the following information in the Small Engine Unit 4 e-record:

1. Written description of your project:

a. goals

b. plans

c. accomplishments

d. evaluation

C. Exhibit may be a display board or a stand-alone item (not both) such as: air and fuel systems, the electrical systems, a diagram of the engine block, etc. A display board can be on any topic related to Engines. You may use diagrams, drawings, charts and photographs. Label and use captions to make your display as educational as possible. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board.

D. Label each item with name and county.

D-5 Model Rocketry

NOTE: For All Units:

1. Rocket exhibits must relate to the skill level for the unit entered. Units 1-4 should include the color picture of the rocket and skill level title from the rocket kit package as part of their record book. All project material must be organized and secured in a sturdy binder/notebook. Unit 6 must have a copy of plans or blueprints including instructions “step by step” to build the rocket.

2. Fins must be balsa wood (balsa and basswood) and finished with paint in classes indicated. **No plastic fins for Units 1-3.**

3. Fins of plastic or other materials must be exhibited in Units 4 and 6.

4. Unit 4 members may build Skill Level 4 and Skill Level 5 rocket kits.

5. Rockets are to be displayed and held **vertically** by a substantial rod or support no taller than the rocket on a stationary base appropriate to the size of the rocket, not to exceed 12" x 12" x 1" thick. Only the rocket will be judged. Do not decorate the base. No triangular stands can be used for displaying the rocket.

6. Do not include live or expended engines in the rocket exhibited.

7. If rocket is damaged in launching, it can still be judged for quality of construction, e-record and pictures.

8. Display rockets cannot be used for the Rocket Fly Day competition at State Fair.

9. No launching pads should be used for displaying the rockets.

10. All rockets must be exhibited upright.

11. Launching your rocket is not a requirement. It is a good idea, however, to make 2 rockets – one for exhibit and one to launch if possible.

12. Project will be evaluated on the quality of information completed in the manual and e-record (25 percent) and quality of exhibit (75 percent).

Class

Balsa Fins Only

1. Unit 1 - Introduction to Rocketry - Junior
2. Unit 1 - Introduction to Rocketry - Intermediate
3. Unit 1 - Introduction to Rocketry - Senior

Exhibit will consist of the following:

- A. Completed Model Rocketry e-record presented in a sturdy binder/notebook.
- B. On the Model Rocketry page enter the rockets you built in this unit. Include the following information:
 1. Model name; skill level; from a stock kit, modified kit or self-designed-and-built.
 2. Power: single-stage, multi-stage: cluster.
 3. Fuselage: single-tube or glider rear-engine or glider front-engine or glider-canard.
 4. Engine information: engine code, label color, and type of recovery system.
- C. If the rocket was launched provide the following information on the Model Rocket page:
 1. Number of times successfully launched; kind of launch pad used.
 2. Kind of electrical system used
 3. Tracking method used
 4. Observer's distance from rocket; angle achieved and altitude achieved; any special problems before, during and after launching
 5. What did you do to overcome the problems you encountered?
- D. One rocket personally built or display related to work done at Skill Level I.
- E. Label each item with name and county.

Balsa Fins Only

4. Unit 2 - Basic Model Rocketry - Junior
5. Unit 2 - Basic Model Rocketry - Intermediate
6. Unit 2 - Basic Model Rocketry - Senior

Exhibit will consist of the following:

- A. Completed Model Rocketry e-record presented in a sturdy binder/notebook.
- B. On the Model Rocketry page enter the rockets you built in this unit. Include the following information:
 1. Model name; skill level; from a stock kit, modified kit or self-designed-and-built.
 2. Power: single-stage, multi-stage: cluster.
 3. Fuselage: single-tube or glider rear-engine or glider front-engine or glider-canard.
 4. Engine information: engine code, label color, and type of recovery system.
- C. If the rocket was launched provide the following information on the Model Rocket page:
 1. Number of times successfully launched; kind of launch pad used.
 2. Kind of electrical system used
 3. Tracking method used
 4. Observer's distance from rocket; angle achieved and altitude achieved; any special problems before, during and after launching
 5. What did you do to overcome the problems you encountered?
- D. One rocket personally built or display related to work done at Skill Level II.
- E. Label each item with name and county.

Balsa Fins Only

7. Unit 3 - Intermediate Model Rocketry - Junior
8. Unit 3 - Intermediate Model Rocketry - Intermediate
9. Unit 3 - Intermediate Model Rocketry - Senior

Exhibit will consist of the following:

- A. Completed Model Rocketry e-record with completed questions in manual pages 31-35 presented in a sturdy binder/notebook.
- B. On the Model Rocketry page enter the rockets you built in this unit. Include the following information:
 - 1. Model name; skill level; from a stock kit, modified kit or self-designed-and-built.
 - 2. Power: single-stage, multi-stage: cluster.
 - 3. Fuselage: single-tube or glider rear-engine or glider front-engine or glider-canard.
 - 4. Engine information: engine code, label color, and type of recovery system.
- C. If the rocket was launched provide the following information on the Model Rocket page:
 - 1. Number of times successfully launched; kind of launch pad used.
 - 2. Kind of electrical system used
 - 3. Tracking method used
 - 4. Observer's distance from rocket; angle achieved and altitude achieved; any special problems before, during and after launching
 - 5. What did you do to overcome the problems you encountered?
- D. One rocket personally built in unit or display related to work done at Skill Level III.
- E. Label each item with name and county.

Finished fins of any type

- 10. Unit 4 - Advanced Model Rocketry - Junior
- 11. Unit 4 - Advanced Model Rocketry - Intermediate
- 12. Unit 4 - Advanced Model Rocketry - Senior

Exhibit will consist of the following:

- A. Completed Model Rocketry e-record with completed questions in manual pages 14-18 presented in a sturdy binder/notebook.
- B. On the Model Rocketry page enter the rockets you built in this unit. Include the following information:
 - 1. Model name; skill level; from a stock kit, modified kit or self-designed-and-built.
 - 2. Power: single-stage, multi-stage: cluster.
 - 3. Fuselage: single-tube or glider rear-engine or glider front-engine or glider-canard.
 - 4. Engine information: engine code, label color, and type of recovery system.
- C. If the rocket was launched provide the following information on the Model Rocket page:
 - 1. Number of times successfully launched; kind of launch pad used.
 - 2. Kind of electrical system used
 - 3. Tracking method used
 - 4. Observer's distance from rocket; angle achieved and altitude achieved; any special problems before, during and after launching
 - 5. What did you do to overcome the problems you encountered?
- D. One rocket personally built in unit or display related to work done at Skill Level IV.
- E. Label each item with name and county.

Finished fins of any type

- 13. Unit 6 - Designer Model Rocketry - Junior
- 14. Unit 6 - Designer Model Rocketry - Intermediate
- 15. Unit 6 - Designer Model Rocketry - Senior

Exhibit will consist of the following:

- A. Completed Model Rocketry e-record with design worksheets and completed questions in manual on pages 35-39, presented in a sturdy binder/notebook. Include a copy of the plans or blueprints on how to build the rocket.
- B. If a rocket was launched provide the following information on the Model Rocketry page:
 - 1. Number of times successfully launched; kind of launch pad used.
 - 2. Kind of electrical system used

3. Tracking method used
 4. Observer's distance from rocket; angle achieved and altitude achieved; any special problems before, during and after launching
 5. What did you do to overcome the problems you encountered?
- C. One rocket personally designed, built (no kits) and used in unit or display related to work done.
D. Label each item with name and county.

D-6 GPS & Mapping

4-H members can exhibit both as an individual and/or as part of a group. The exhibits need to be different –one exhibit for the individual and a different topic exhibit for the group.

Project will be evaluated on the quality of information completed in the manual and e-record (25 percent) and quality of exhibit (75 percent).

Class

1. Level 1 – Setting Out - Junior
2. Level 1 – Setting Out - Intermediate
3. Level 1 – Setting Out - Senior

Exhibit will consist of the following:

- A. Completed e-record presented in a sturdy binder/notebook.
- B. Using the “Take Me on a Tour” activity, create a display and map showing four to six tour sites, geo-tools used to create the map, positional data for the sites, and information about the selected sites.

OR

C. Using information from the “What Are Geographical Tools?” activity, prepare an exhibit showing and describing ten mapping tools. Explain how the mapping tools are used and why maps are important.

D. Posters/Maps must be presented on display board. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board. Exhibitors are encouraged to laminate all posters/maps or cover them with clear plastic film.

4. Level 2 – On the Trail - Junior
5. Level 2 – On the Trail - Intermediate
6. Level 2 – On the Trail - Senior

Exhibit will consist of the following:

- A. Completed e-record presented in a sturdy binder/notebook.
- B. Using the table from the “Take Me on a Tour” activity from Level 1, create a map showing recreational, historical or public service sites in your community. Determine if there is a need for additional community resources. Make written suggestions for what resources should be added and where they should be located on your map.

C. Posters/Maps must be presented on display board. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board. Exhibitors are encouraged to laminate all posters/maps or cover them with clear plastic film.

7. Level 3 – Reaching Your Destination - Junior
8. Level 3 – Reaching Your Destination - Intermediate
9. Level 3 – Reaching Your Destination - Senior

Exhibit will consist of the following:

- A. Completed e-record presented in a sturdy binder/notebook.
- B. Create a computer-generated map with layered data that provides information on a community need. Explain how the need was identified; how you gathered information; and your recommendations on how to solve the need. Use the template from “Take Me on a Tour” activity from Level 1, to gather data for the map.

C. Posters/Maps must be presented on display board. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included in front of display board. Exhibitors are encouraged to laminate all posters/maps or cover them with clear plastic film.

10. Group Projects (Developed by 2 or more 4-H members) - Junior

11. Group Projects (Developed by 2 or more 4-H members) - Intermediate

12. Group Projects (Developed by 2 or more 4-H members) - Senior

Exhibit will consist of the following:

A. At least a one page story about the project including these items: purpose of map, goals, plan, accomplishments, evaluation, and how each person on the team contributed to the project.

B. Hand drawn or computer generated map (map can be either informational or directional).

C. Posters/Maps must be presented on display board. The standardized display board size of 4' X 3' is to be used for 4-H projects. No additional items may be included on or in front of display board.

Exhibitors are encouraged to laminate all posters/maps or cover them with clear plastic film.

D-7 Robotics & Engineering

1. In Junk Drawer Units (1-3), youth are only allowed to enter a display board exhibit or a stand-alone exhibit, NOT both.

2. Robotics Platforms is just a fancy way to say robotics kits or robotics materials. Some types of commercial kits or platform include: Arduino Kits, EV3, Brushbot, Make, Hexy, Pushbutton Programmable Robotic Kit, Sparky, Cubelets, Robotic Arm Edge, Sparkfun Red Bot, WeDo, Multiplo, NXT, TETRIX, CEENBot and VEX.

3. Youth working individually on a robotics platform should enroll in the Platform Units. Youth should advance between units 4-6 as they feel they are progressing in their project knowledge.

4. Youth working on a team on a robotics platform should enroll in the Team Robotics Unit. Despite being on a team, the fair exhibit is meant to be completed and entered by an individual member.

5. For more information about various team competitive robotics opportunities, see this list from the Colorado 4-H STEM website.

6. Project will be evaluated on the quality of information completed in the manual and e-record (25 percent) and quality of exhibit (75 percent).

Class

Display Board Exhibits

1. Junk Drawer Robotics Unit 1 - Give Robotics a Hand - Junior

2. Junk Drawer Robotics Unit 1 - Give Robotics a Hand - Intermediate

3. Junk Drawer Robotics Unit 1 - Give Robotics a Hand – Senior

Stand-Alone Exhibits

4. Junk Drawer Robotics Unit 1 - Give Robotics a Hand - Junior

5. Junk Drawer Robotics Unit 1 - Give Robotics a Hand - Intermediate

6. Junk Drawer Robotics Unit 1 - Give Robotics a Hand – Senior

Exhibit will consist of the following:

A. A sturdy binder/notebook that contains the completed 4-H Robotics e-record

B. For Display Board Exhibits: One display board which you have made as a part of this unit of study. The standardize display board size 4' x 3' is to be used for 4-H projects.

For Stand-Alone Exhibits: One article which you have made as a part of this unit of study (Example: marshmallow catapult, robotic arm, robotic gripper, et al.)

Display Board Exhibits

7. Junk Drawer Robotics Unit 2 - Robots on the Move - Junior

8. Junk Drawer Robotics Unit 2 - Robots on the Move - Intermediate

9. Junk Drawer Robotics Unit 2 - Robots on the Move – Senior

Stand-Alone Exhibits

10. Junk Drawer Robotics Unit 2 - Robots on the Move - Junior

11. Junk Drawer Robotics Unit 2 - Robots on the Move - Intermediate

12. Junk Drawer Robotics Unit 2 - Robots on the Move – Senior

Exhibit will consist of the following:

A. A sturdy binder/notebook that contains the completed 4-H Robotics e-record

B. For Display Board Exhibits: One display board which you have made as a part of this unit of study. The standardize display board size 4' x 3' is to be used for 4-H projects.

For Stand-Alone Exhibits: One article which you have made as a part of this unit of study. (Example: clipmobile, can-can robot, gear train, es-car-go, sea hunt, et al.)

Display Board Exhibits

13. Junk Drawer Robotics Unit 3 - Mechatronics - Junior
14. Junk Drawer Robotics Unit 3 - Mechatronics - Intermediate
15. Junk Drawer Robotics Unit 3 - Mechatronics – Senior

Stand-Alone Exhibits

16. Junk Drawer Robotics Unit 3 - Mechatronics - Junior
17. Junk Drawer Robotics Unit 3 - Mechatronics - Intermediate
18. Junk Drawer Robotics Unit 3 - Mechatronics – Senior

Exhibit will consist of the following:

A. A sturdy binder/notebook that contains the completed 4-H Robotics e-record

B. For Display Boards: One display board which you have made as a part of this unit of study. The standardize display board size 4' x 3' is to be used for 4-H projects.

For Stand-Alone Exhibits: One article which you have made as a part of this unit of study. (Example: forward and reverse, wall follower, breadboard, say what? build your robot, et al.)

19. Robotics Platforms Unit 4 – Beginner - Junior
20. Robotics Platforms Unit 4 – Beginner - Intermediate
21. Robotics Platforms Unit 4 – Beginner – Senior

Exhibit will consist of the following:

A. A sturdy binder/notebook that contains the completed 4-H Robotics e-record

B. One display board which you have made as a part of this unit of study. The standardize display board size 4' x 3' is to be used for 4-H projects.

22. Robotics Platforms Unit 5 – Intermediate – Junior
23. Robotics Platforms Unit 5 – Intermediate – Intermediate
24. Robotics Platforms Unit 5 – Intermediate - Senior

Exhibit will consist of the following:

A. A sturdy binder/notebook that contains the completed 4-H Robotics e-record

B. One display board which you have made as a part of this unit of study. The standardize display board size 4' x 3' is to be used for 4-H projects.

25. Robotics Platforms Unit 6 – Advanced – Junior
26. Robotics Platforms Unit 6 – Advanced – Intermediate
27. Robotics Platforms Unit 6 – Advanced - Senior

Exhibit will consist of the following:

A. A sturdy binder/notebook that contains the completed 4-H Robotics e-record

B. One display board which you have made as a part of this unit of study. The standardize display board size 4' x 3' is to be used for 4-H projects.

- 28 Team Robotics Unit 7 – Junior
29. Team Robotics Unit 7 – Intermediate
30. Team Robotics Unit 7 – Senior

Exhibit will consist of the following:

A. A sturdy binder/notebook that contains the completed 4-H Robotics e-record

B. One display board which you have made as a part of this unit of study. The standardize display board size 4' x 3' is to be used for 4-H projects.

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