

2008 – 2009 Wildcats FLL Robotics - Excellent Performance Rubrics

Robot Design

Innovation

- Design creative, unique use of drive train or structure.
- Manipulators/Sensors used in unexpected ways, if used.
- Unique/creative strategy for coordinating missions.
- Programming tasks used in unexpected ways. (For this category, 1 done exceptionally or 3 of 4 above demonstrated.)

Strategy, Process, Problem Solving

- Communicate complete design process, from initial concept through build, test, and refinement.
- Excellent/Innovative strategy combining mission tasks, plotting routes, maximizing points.

Locomotion and Navigation

- Goes defined distances efficiently.
- Adjusts speed, position sensing for optimum speed and accuracy.
- Turns accurately and consistently.
- Allows for variables (battery wear, obstacles.)
- Moves between two points with very good accuracy and consistency.

Programming

- Programs logically organized.
- Programs very efficient.
- Programs always work even for complex tasks.
- Sensors, if used, guarantee certain actions in every trial.
- Programs work in competition as in practice.
- Variables, loops, subroutines and conditions, if used, are effective.
- Children can describe mission and reference the program.

Kids Did the Work

- Knowledge of robot structure and programming shows thorough understanding of underlying design, science and technology (age specific expectations.)
- Building/programming was done by team members.

Structural

- Robot assembles easily.
- Robot base stable and robust.
- Attachments, if used, modular, function as expected and are easily added/removed from robot. Robot displays wide range of capabilities.
- Attachments, if used, perform tasks extremely well and are repeatable.
- Robot designed by team; design is unique and creative.

Overall design

- Robot is elegant, complete system.
- All components work well together.
- All components look like they belong together.

Project

Research

- Research problem is explained clearly and concisely, integrates well with FLL theme.
- Cited multiple sources used in research including communication with a professional(s) (or attempts to).
- Impact of problem thoroughly examined and applied to solution.
- Clearly researched existing solutions and technologies, applied knowledge when developing solution.
- Alternative theories or interpretations presented and addressed in persuasive arguments.
- Demonstrated and shared a complete understanding of technical terms.

Innovative Solution

- Solution is concisely described and clearly addresses the problem.
- Substantial data supports proposed solution.
- Solution is innovative and applies to knowledge of science and/or technology.

Sharing

- Shared their project, research and solution with others such as their school, community or experts in their field.
- Considered how this impacts others and implemented a plan to produce change.

Creative Presentation

- Organized presentation with clear beginning, middle and end; well-integrated; logical progression.
- All or almost all team members participated.
- Comprehensive answers to judges questions.
- Collaboration of group is seamless.
- Carefully chosen visual aids and/or support material that clearly adds to presentation.
- Excellent use of creativity.
- Clearly the work of the children from beginning to end including all visual aids and material.
- No evident errors and well rehearsed.
- Excellent use of time.
- No technical difficulties.

Teamwork and FLL Values

Roles and Responsibilities

- Clearly defined roles.
- Workload is distributed fairly and team members understand each others roles.
- Team members fill each others roles happily, if needed.
- Team members give concrete examples of learning time management.

Gracious Professionalism

- Team members give concrete examples of respect for teammates.
- Team members show increased awareness of their school/community including concrete examples.
- Team members clearly discuss how this increased awareness translates to other areas of their lives.
- Team members give concrete examples of how they have helped each other/others.

Problem-Solving & Team Dynamics

- A problem was identified and the team worked together to find a solution.
- Various solutions were tested and then incorporated.
- Team accepts input from all and sees the big picture in their overall goals.
- Team members show equality and value each others roles by decisions being made by the entire team.
- Collaboration and co-ownership are dominant themes with the members recognizing interdependence.

Confidence & Enthusiasm

- All team members speak to the judges showing confidence in the themselves as well as the team.
- Team members show equal investment in FLL.
- Members enthusiastically work together to include each other.

FLL Values

- Group articulates a clear understanding of the FLL experience.
- Team gives concrete examples of new skills acquired and their interest in the subject areas.