Nebraska 4-H Robotics and GPS/GIS and SPIRIT Robotics Project

4H Robotics and GPS/GIS Interest Questionnaire

Name: _____ State _____

Leader Name: _____

Age: _____   Gender (circle one): Male   Female   Group (circle one): Control   Robot

Ethnicity (circle one):

| African American | American Indian | Asian or Pacific Islander | Hispanic | White (non Hispanic) | Other |

4-H is interested in learning about your attitudes towards science, technology, engineering, and mathematics. We particularly want to get your reaction to learning about robotics, which involves the building and programming of small robots. We also are interested in your attitudes about GPS (Global Positioning Systems) and GIS (Geographical Imaging Systems). GPS helps us record and use satellite data to understand geographical location and mapping concepts. GIS is a computer tool you can use to develop, analyze, and display geographic maps.

Read the statements below and circle your opinion.

Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1. It is important for me to learn how to conduct a scientific investigation.	5	4	3	2	1
2. It is important for me to learn about robotics.	5	4	3	2	1
3. It is important for me to learn how to use appropriate tools and techniques to gather, analyze and interpret data.	5	4	3	2	1
4. It is important for me to learn about GIS.	5	4	3	2	1
5. It is important for me to learn how to use mathematical formulas to help solve practical problems.	5	4	3	2	1
6. It is important for me to learn how to make accurate measurements to help solve mathematical problems.	5	4	3	2	1
7. It is important for me to be able to record measurements and calculations into tables and charts.	5	4	3	2	1
8. It is important for me to learn how to collect and interpret data to verify a prediction or hypothesis.	5	4	3	2	1
9. It is important for me to understand basic engineering concepts (e.g. design tradeoffs, speed, torque) behind building a robot.	5	4	3	2	1
10. It is important for me to learn how to program a robot to carry out commands.	5	4	3	2	1
11. It is important for me to learn about GPS.	5	4	3	2	1
12. I like learning new technologies like robotics.	5	4	3	2	1

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Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
13. I like using the scientific method to solve problems.	5	4	3	2	1
14. I like using mathematical formulas and calculations to solve problems.	5	4	3	2	1
15. I like learning new technologies like GPS.	5	4	3	2	1
16. I use a step by step process to solve problems.	5	4	3	2	1
17. I make a plan before I start to solve a problem.	5	4	3	2	1
18. I am confident that I can program a robot to move forward two wheel rotations (i.e. 720 degrees) and then stop.	5	4	3	2	1
19. I try new methods to solve a problem when one does not work.	5	4	3	2	1
20. I carefully analyze a problem before I begin to develop a solution.	5	4	3	2	1
21. In order to solve a complex problem, I break it down into smaller steps.	5	4	3	2	1
22. I am certain that I can build a LEGO robot by following design instructions.	5	4	3	2	1
23. I am certain that I can fix the software program for a robot that does not behave as expected.	5	4	3	2	1
24. I am certain that I can log locations of a series of waypoints within a GPS unit.	5	4	3	2	1
25. I am confident that I can program a LEGO robot to follow a black line using a light sensor.	5	4	3	2	1
26. I am confident that I can read and understand maps.	5	4	3	2	1
27. I am confident that I can make a digital map.	5	4	3	2	1
28. I am confident that I can use GPS technologies to get to places that I have never been before.	5	4	3	2	1
29. I like listening to others when trying to decide how to approach a task or problem.	5	4	3	2	1
30. I like being part of a team that is trying to solve a problem.	5	4	3	2	1
31. When working in teams, I ask my teammates for help when I run into a problem or don't understand something.	5	4	3	2	1
32. I like to work with others to complete projects.	5	4	3	2	1
33. I like learning new technologies like GIS.	5	4	3	2	1