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Period 2

TankBoat

Our project is going to be hardware that will simultaneously act as a boat and as a tank. This TankBoat will be able to float and maneuver in an aquatic environment while also having a tank head on the deck that can swivel and move independently of the hull. The barrel of the tank head will also have a light that can be triggered to simulate firing the tank gun. Our project is unique because it combines the ability of a boat to traverse on water and a tank head to swivel and fire independent of its vehicle. We will be using arduino software to program the arduino hardware that will move the mobile parts of the vehicle and control the laser. We will craft the boat and tank head from 3d printed objects as well as store bought craft objects. We will also use a remote and receiver that would range from 80$ to 160$.

We expect to face challenges in this project. Some anticipated challenges include having the tank swivel on a 360 degree axis, having the boat be light enough to float and maneuver, having a sufficient propeller, adding a laser, and being able to remotely control all parts of the vehicle.

Our project design consists of a hull that can float and holds electrical circuits that allows the propellor on back of the boat to run and the tank head to swivel and laser to function.

Milestones:

1. Create blueprint of all parts of boat - longer
2. Make hull of boat - longer
3. Make engine - shorter
4. Make Tank head - longer
5. Set up wiring and servos for propellor - longer
6. Set up wiring and servo for tank head - longer
7. Attach engine to hull - shorter
8. Attach tankhead to hull - shorter
9. Code propellor to spin - longer
10. Code for propeller to swivel - longer
11. Code TankHead to Swivel - shorter
12. Code barrel to raise and lower - longer
13. Attach LED to barrel - shorter
14. Link remote control to sensor - longer
15. Attach sensor to TankBoat - longer
16. Make TankBoat faster - shorter
17. Add sound when “shots” are fired - shorter
18. Change LED to laser pointer - shorter
19. Make TankBoat more stable - shorter
20. Paint TankBoat - shorter

Working together, rather than splitting the load, we will attack every part of this project as a team, providing the support that is needed and fill the areas in which we are individually lacking.

As one is doing something, the other will be looking it over, catching any mistakes and answering any questions. By taking a multiperspective approach we can ensure that all errors are caught and dealt with and we allow for multiple outlooks on problem solving enabling us to overcome challenges in a timely and efficient manner.