

The ROV Challenge

Mission

- ▶ You are to design, engineer, and build an ROV that must:
 - fit into a space 30 cm high, 35cm wide, and 45 cm long (15 pts)
 - Be able to move up, down forward, backward and turn on an x,y plane (15 pts)
 - You must be able to navigate your vehicle (10 pts)
 - The vehicle must be able to pick up a 2" PVC cap from the bottom of the tank and bring it to the surface for retrieval (25 pts)
 - Remember safety 3rd (5 pts)
- ▶ If you need more supplies, you can buy them for their point value, this will be deducted from your final score, if you have extra, they will be added to your final score
- ▶ You must submit a build plan before you can get supplies
- ▶ If your ROV fulfills all criteria you are awarded 100 pts

The supplies

- ▶ 8 ft pvc 2 pts per foot
- ▶ 4 three way connectors 3 pts
- ▶ 9 T fittings 2 pts
- ▶ 8 elbows 1 pt
- ▶ 3 motors w/ props 5 pts
- ▶ 1 underwater video cam 5 pts
- ▶ 1 fork or set of chopsticks 1 pt
- ▶ 10 zip ties 1 pt
- ▶ 1 foot electrical tape 2 pts per foot
- ▶ If you need more supplies, you can buy them for their point value, this will be deducted from your final score, if you have extra, they will be added to your final score

Engineering Report (30 pts)

- ▶ The problem or challenge
 - ▶ Ideas of how to solve the problem
 - ▶ A clear build plan with materials
 - ▶ Labeled sketch of prototype
 - ▶ Materials list
 - ▶ Description of initial vehicle
 - ▶ What worked, what didn't?
 - ▶ Ideas you had to troubleshoot
 - ▶ Ideas you used to redesign for each time
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