

# Underwater Robotics Club and Contest

## Information 2014-15

### Grades 6<sup>th</sup> – 12<sup>th</sup>

#### What is it?

Students design, build, and pilot remotely operated vehicles (ROVs) to compete in either the SCOUT or the RANGER class. The event includes underwater missions, a poster display, and an engineering presentation. The MATE Center provides support through teacher and student workshops, building materials, and access to mentors. **Our school this year will compete in both the SCOUT and Navigator class competitions.** Scout is open to everyone (Junior High and High School).

See more information on our website: [www.mountainhomecharter.org](http://www.mountainhomecharter.org) click on science programs, then Underwater ROV club. Or go to [www.materover.org](http://www.materover.org)

#### What do I build it out of?

You will use relatively inexpensive materials to build your ROV. Most are built out of PVC pipe and foam that people use to winterize pipes. In addition we will provide each team with three motors, wiring cable, and control box to assemble.

#### What are the competitions like?

- For Scout - The underwater mission includes a deep water mission. Each challenge relates to that year's theme. For example one year the theme was Underwater Rescue – so the deep water mission consisted of delivering emergency supplies to a submarine in trouble. Every year is different.
- Each team will also meet with an engineer to explain their design, changes that were made over time; how they wired their control box, challenges, and things they learned.
- Each team will also be judged by a team display. Each team (company) is required to create a display that provides information about their team and, in keeping with the contest theme, include information about the theme. Photos are encouraged and examples of design ideas.
- Teams can be any size but only 4 students can participate in any one event at a time. If we have more than 3 scout teams from each school we will have a competition to determine the top three teams for each school. Other teams will be on a waiting list if there are openings in the competition.

## Important Dates:

- Next Thursday - ROV in a Bag workshop – meet at Mountain Home at 12:15pm and be prepared to drive to my Mom's pool at 40720 Road 425a in Oakhurst.
- Class will meet every Thursday at 12:30pm for scout and 2:15 for Navigators unless otherwise noted for vacation or other breaks.
- Monterey Regional Contest, Aptos High School, Aptos, CA will likely take place on May 9<sup>th</sup>, date is still being confirmed.

### What Mountain Home is providing?

- We will provide a weekly meeting space to work on your design then time to test and practice in the YHS pool
- We will provide some of the basic materials (PVC, motors, wire, control box materials, Foam, and battery to test with).
- We will provide some classes to help you understand key concepts of electricity, density, and buoyancy. You will receive instruction on safety, soldering, switches, and wire stripping.

### Cost to Students?

- The cost to participate is free to scout students but there may be other materials your team determines it needs and will need to purchase or raise money for.

### What do we need from parents?

- **We need a team mentor for each group.** You do not need to have experience. Mentors help keep students focused and help them work through conflicts that arise from working in a group. Mentors need to help arrange time for groups to work on project.
- Parents will need to provide transportation to school and competition
- Arrange transportation for students to meet with team at other times **typically each group will meet an additional day each week.**
- Parents need to support the mentors and keep their child accountable to the rest of the team.

### What do we need from students?

- Good attitude and respect for others
- Willingness to experiment and learn
- Commitment to your team
- Must work on research, writing, presentation, and ROV outside of class. This means homework during the week.
- Come prepared as a group to test ROV on Thursday pool days. Teams that do not work on ROV outside of class will fall behind.