



2023 SeaPerch 6-12 Grade Regional Competition

*Sponsored by the Illinois Technology Student Association and the
Technology Education Association of Illinois*



[SeaPerch](#) is an underwater robotics program. Students and teachers are equipped with the resources they need to learn about basic science and engineering concepts, tool safety, technical applications, problem-solving and teamwork skills in an exciting and hands-on way.

March 17, 2023 (St. Patrick's Day) 🌀 Holiday Inn 🌀 8 Traders Circle, Normal, IL 61761
10:00 AM Qualifying Rounds
Lunch
Championship Bracket

Specifics:

- **Must be a TSA chapter/school OR teacher must be a TEAI member in good standing**
- Free event for students and teachers, lunch provided
- Up to three (3) teams per school, limited to four students per team
- Each team will run a preliminary round to determine tournament seeding
 - Scoring will be as follows for the preliminary round:
 - Teams should plan on retrieving one sunken ring and placing it in the pot at the bottom of the pool and retrieving one floating ring at pool side; the sunken ring must be completed first. Time will be recorded for each task. Time will start when the whistle sounds; the SeaPerch will be out of water sitting on the pool deck. No round will last longer than five minutes. If both teams do not complete both tasks, the winner will be determined by which team put the ring in the pot first. Faster times earn teams higher seeds.
- Tournament-bracket play will occur with double elimination, 1st-3rd Place Awards
 - Scoring will be as follows for the championship tournament:
 - Teams should plan on retrieving two sunken rings and placing them in the pot at the bottom of the pool and retrieving two floating rings; the sunken rings must be completed first. Time will be recorded for each task. Time will start when the whistle sounds; the SeaPerch will be out of the water sitting on the pool deck. No round will last longer than five minutes. If both teams do not complete both tasks, the winner will be determined by which team put the rings in the pot first.

- Must use [SeaPerch ROV Kit](#)/ RoboNation Components
- Student teams will need to:
 - design and fabricate (from your own materials) an end effector that will pick up/secure pool rings that will be located on the bottom of pool (standing upright) and deposit them in a “sunken pot of gold” that will be located on the pool bottom
 - design and fabricate (from your own materials) an end effector that will secure different size floating donut-shaped rings to be placed in a “pool-side goal”. The pool-side goal will be at the surface of the water
- Since this regional competition is on St. Patrick’s Day, the organizers of the event thought it would be fun to give a “Best Dressed” award, so student teams should come dressed for the occasion
- Registration for the event can be found at <https://forms.gle/yP89RnZrmtxY18vD6>.
- Deadline to register is Monday, March 6 (this deadline is needed for the food/beverages)

Questions:

- What rings are being used? **Each of the two styles of rings on the next page.**
- What is the diameter of the pot being used? **11.25”**
- What is the size of the goal for placing the floating rings? **16” x 16”**
- Can a team use/change props from what comes from SeaPerch/RoboNation? **No. However, an additional three props (maximum of six per SeaPerch) may be used.**
- Can teams add additional motors to the SeaPerch beyond the three that come with the kit? **Yes, teams may add up to an additional three motors (maximum of six per SeaPerch).**
- How long will the tether cable need to be? **The pool area is 20’ wide (this will be divided into half; the pot will be in the middle of the pool). The depth of the pool is approximately 4’.**
- What are the dimensions for where each will stand? **Teams will be restricted to a 4’ x 4’ area to navigate their SeaPerch.**
- Are the sunken and floating rings worth the same amount of points? **Yes.**
- How is the winner of each head-to-head match determined? **First by time, second by the amount of rings collected.**

If additional questions arise from teams, each question will be posted and an answer will be determined. If a question is received, each team will be notified.

For questions, please feel free to contact: Dr. Chris Merrill, Illinois State University, cpmerri@ilstu.edu.

The floating rings that will be used are illustrated below.



Fisher-Price Giant Rock-a-Stack [Available through Kohl's](#) \$15.39

The rings that will be sunk at the bottom of the pool are illustrated below.



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[Amazon Link for Pool Rings](#) \$12.99