

2020 SeaPerch Challenge Competition Classes



Rules	Middle School Stock Class		High School Stock Class		Open Class
	PVC Division	Other Materials Division	PVC Division	Other Materials Division	n/a
BUDGET*					
The total cost of modifications to the final ROV must be \$25 or less	X	X	X	X	
The cost of modifications may exceed \$25					X
MATERIALS					
Built using only PVC, CPVC, PEX pipe	X		X		X
May include 3D printed or additive manufactured parts		X		X	X
MOTORS					
Must include waterproofed motors	X	X	X	X	X
Must use ONLY stock SeaPerch motors (Jameco Electronics 232022) for propulsion	X	X	X	X	X
Additional non-stock motors may be used for non-propulsion uses	X	X	X	X	X
May include more than 3 thrusters (ie. Motor and propeller assembly)					X
CONTROLLERS					
May only use simple on/off switches for thruster controls	X	X	X	X	
May use power conditioning or pulse-width modulation (PWM) controls					X
May use a fixed or variable resistor to reduce voltage	X	X	X	X	X
May use microcontrollers such as Arduino or Raspberry Pi					X

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POWER SUPPLY					
Must design for and utilize a 12-volt power source	X	X	X	X	X
May utilize a second power source (no more than 12-volts) to power auxiliary equipment					X
STRUCTURE/SIZE					
Must fit through 18" diameter hoop	X	X	X	X	X
COMPETITION CRITERIA					
ROV must not be modified after compliance check (with the exception of buoyancy)	X	X	X	X	X
The same ROV must be used for both pool events	X	X	X	X	X
Team includes a student in 9 th grade or above			X	X	X
Team includes students only in grades up to and including 8 th grade	X	X			X

*Budget Guidelines include:

- Donated material will be assessed at what the cost would be to procure the material.
- Spare parts and tools are not included in this budget.
- Materials used on earlier prototypes are not included in this budget.
- Only materials and supplies used on the competition ROV that are not part of the standard SeaPerch ROV kit should be included in the budget.
- Proof of budget compliance should be made available to the judges upon request.
- 3D printed parts will be costed out at \$0.05 per gram.