

Shallow End:

Collect crustaceans, bacterial mats, and spires

Task #1: A new species of crustacean

Task #2: Bacterial mats

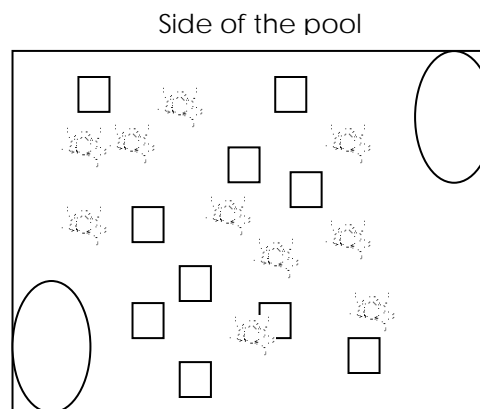
Task #3: Spires

This is a timed event; each team has a maximum of 10 minutes to collect and return to the surface with up to 6 crustaceans, 6 bacterial mats, and 6 spires. Items may be collected one at a time or as many at a time as possible.

10 crustaceans, 10 bacterial mats, and two areas with 5 spires each will be placed within a designated area on the bottom of shallow end of the swimming pool. Teams will receive points for the first 6 crustaceans collected, 6 bacterial mats, and 6 spires collected.

No portion of this area will be more than 3 meters from the side of the pool.

- Place your vehicle in the water up against the side of the pool.
- Once the official says "go" and the timer starts, you will have a total of 10 minutes to retrieve the samples (crustaceans, bacterial mats, and spires). **Teams will receive points for 6 crustaceans, 6 bacterial mats, and 6 spires collected.**
- You may retrieve one item at a time, or more than one item at a time.
- You may only touch your ROV to retrieve the items if your vehicle has surfaced and has touched the side of the pool by the tile line (@ 8 inches).
- Only those items that have been removed from your ROV will count towards your total score. (Items still attached to your vehicle when the time expires do not count.)
- You may not use the side of the pool (perpendicular to the operation area) as leverage to help you retrieve items.
- If you push an item out of bounds, you may not retrieve it.
- In the event of a breakdown, entanglement, or if adjustments need to be made after the clock is started, there will be no "time out;" the time counts as part of your overall timed performance.



10 crustaceans, 10 bacterial mats and two areas of 5 spires each will be placed randomly by divers within the black boundaries of the lane lines on the bottom of the pool. All items are redeemable for points and raffle tickets.

Penalty notes:

___ Diver assistance - 1 minute added to allotted time

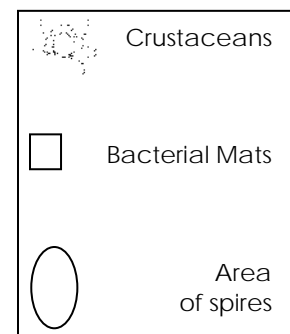
___ Pull on tether - 5 minutes added to allotted time (pulling on the tether is not allowed as a method to return to the surface)

___ Blown fuse #1 - 1 minute added to allotted time

___ Blown fuse #2 - 1 minute added to allotted time, last replacement

___ Blown fuse #3 - disqualified

If your team blows a fuse for the 3rd time, you are disqualified from the event and earn zero points.



**Shallow End:
Sample Collecting Score Sheet**

Placing_____

Team name_____

Team #_____

Vehicle maneuvers under its own power:

___ 2 Points

Items retrieved:***

___/6 Crustaceans

___/6 Bacterial Mats

___/6 Spires

___ /18 Total Points

Time:_____/10 minutes (do not add in penalties – see note below)

Judge's initials_____

Penalty notes:

___Diver assistance – 1 minute added to allotted time

___Pull on tether – 5 minutes added to allotted time

___Blown fuse #1 – 1 minute added to allotted time

___Blown fuse #2 – 1 minute added to allotted time, last replacement

___Blown fuse #3 – disqualified

If the team blows a fuse for the 3rd time, they are disqualified from the event and earn zero points.

___ Total Penalty Minutes

***If the time expires, any crustaceans, mats, or spires still attached to the ROV before surfacing do not count.

Mid-Water: Resurrect Hugo

Task #1: Deploy a high-rate hydrophone (HRH) to the seafloor.

Task #2: Connect the HRH to the HUGO junction box.

This is a timed event; each team has a maximum of 10 minutes to complete both tasks. You may choose to do the tasks one at a time or do them at the same time.

Both the HUGO junction box and the designated area (the milk crate) will be placed no more than 1.5 meters from the side of the pool in less than 6 feet of water.

- Attach the HRH to your ROV. (You may not alter the HRH in any way in order to attach it to your ROV.)
- You may also attach the HRH connector to your ROV at this time or you can attach it after you complete the first task.
- Place your vehicle in the water against the side of the pool.
- Once the official says "go" and the timer starts, you will have a total of 10 minutes to complete both tasks in this event.
- You must move the HRH from the side of the pool and place it into the milk crate, which is weighed on the bottom of the pool.
- If you are doing the 2 tasks separately, return to the surface.
- You may touch your ROV once it has touched the side of the pool where the tiles begin (@ 8 inches).
- Attach the HRH connector to your ROV.
- You must insert the HRH connector into the HUGO junction box, which is at the bottom of the pool.
- Return to the surface.
- Your time stops when you complete BOTH tasks and your ROV touches the side of the pool.
- In the event of a breakdown, entanglement, or if adjustments need to be made after the clock is started, there will be no "time out;" the time counts as part of your overall timed performance.

Penalty Notes:

___Pull on tether – 5 minutes added to allotted time (pulling on the tether is not allowed as a method to return to the surface)

___Blown fuse #1 – 1 minute added to allotted time

___Blown fuse #2 – 1 minute added to allotted time, last replacement

___Blown fuse #3 – disqualified

If your team blows a fuse for the 3rd time, you are disqualified from the event and earn zero points.

**Mid-Water:
Resurrect HUGO Score Sheet**

Placing _____

Team name _____

Team # _____

_____/ 2 pts - deposit the HRH in milk crate

_____/ 2 deposit the HRH in milk crate

_____/ 10 minutes to complete the entire task

Judge's initials _____

Penalty Notes:

___ Pull on tether - 5 minute added to allotted time (not allowed as a method to return to the surface)

___ Blown fuse #1 - 1 minute added to allotted time

___ Blown fuse #2 - 1 minute added to allotted time, last replacement

___ Blown fuse #3 - disqualified

If the team blows a fuse for the 3rd time, they are disqualified from the event and earn zero points.

___ Total Penalty Minutes

2010 SCOUT class
Design & Innovation Score Sheet

Tabulator _____
 Team name _____
 Score _____

Team# _____
 Placing _____

Scoring official: Please note and record each bullet as a positive, neutral, or negative point. Subtotal each section and add subtotals together at bottom.

Frame:

		+	0	-
General	<ul style="list-style-type: none"> Is it firmly constructed? Is it made of appropriate materials? Are there hydrodynamic considerations? Are there special water pressure design considerations? 			
Ballast	<ul style="list-style-type: none"> Is the ballast located below the floatation? 			
Buoyancy	<ul style="list-style-type: none"> Is the floatation easily adjustable? 			
Retrieval	<ul style="list-style-type: none"> Is the vehicle designed to retrieve crustaceans, spires and mats? Does it have features that will allow it to carry the HRH and connector? 			
Subtotal				

Power:

		+	0	-
Motors	<ul style="list-style-type: none"> Are they sized appropriately for the vehicle? Have waterproofing measures been taken? If not, does the team have a motor care protocol? Are they securely attached? Are they easy to replace? 			
Propulsion	<ul style="list-style-type: none"> Is it maneuverable in 3 dimensions? Does the design of the ROV allow for protection of the props? 			
Subtotal				
Control Box	<ul style="list-style-type: none"> Can it be easily opened for modifications and repairs? Are the switches labeled? Is it ergonomically sensible? Is it neatly wired internally? 			
Wiring & Tether	<ul style="list-style-type: none"> Is there a strain relief at the control box? Is there a strain relief at the ROV? Is it flexible enough to allow easy maneuverability? Is the tether neatly finished? Is the wiring harness neatly and securely attached to the frame? Are subsurface wire connections waterproof? 			
Other Features	Mechanical arm Camera Attachments (describe)			
Subtotal				
Judge Initials	TOTAL SCORES OF FRAME & POWER			