

AGES  
9-11



# FINAL MISSION

INTRODUCTION:

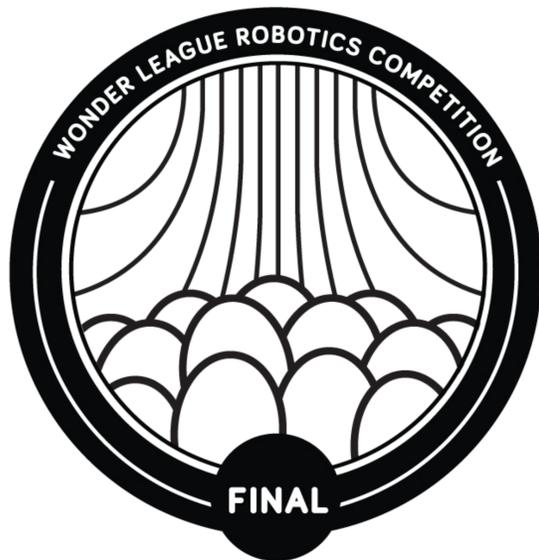
MESSAGE SENT: 06:18

=====

The mysterious sea creature that you were able to rescue and bring back to the research ship is now safe to be released. And what a surprise – during examination, your team discovers that the sea creature is a mother and must have just laid eggs. Your team is desperate to return the sea creature back to its natural habitat and reunite it with its future babies.

Be sure to learn all you can about the mysterious sea creature so that you can share your findings at the Global Oceanography Foundation Summit, where you and your team will be giving a presentation among your colleagues.

=====



MATERIALS NEEDED:

- 5x8 30 cm gridded mat
- Dash
- Dot
- Blockly or Wonder App
- Programming device
- Sketch Kit
- DIY materials for obstacle creation (art supplies)
- DIY materials for tracking device and attachment construction
- Blank paper, size 8.5" x 11" (215.9mm x 279.4mm) works great
- 2 ping pong balls (to represent the sea creature eggs)
- 2 plastic bottle caps
- 8 18 oz. cups (less if you create your own obstacle objects)
- Tape

TEAM NAME:

DATE:

TEAM MEETING #:

MORE INFORMATION

<https://www.makewonder.com/education/robotics-competition>



</WLRC>

wonder workshop

In Support With acer

GRID LAYOUT:

E								
D								
C								
B								
A								
	1	2	3	4	5	6	7	8

KEY



= THE RESEARCH SHIP & THE START LOCATION



= RELOCATION SPOT (DOT) WITH NEST



= BABY SEA CREATURES



= FOOD SOURCE



= PREDATOR



= POLAR VORTEX

SET UP:

- 1 Place Dash in **A1**.
- 2 Place the sea creature eggs (2 ping pong balls) on top of the upside down bottle caps anywhere within **D8**. One ball per cap.
- 3 For the relocation spot, place Dot on top of an upside down cup in the center of **E1**.  
*Hint: Make sure Dot is powered on if you want to use the IR sensors.*  
Next, tape down a cup right side up, directly in front of Dot.
- 4 For the polar vortexes, place an upside down cup in the center of **C7** and **C8**.
- 5 For the predator locations, place an upside down cup in the center of **A3**, **B3**, **D5**, and **E5**.
- 6 To set up the 4 food sources, see your first challenge.

## YOUR CHALLENGE (PART 1) - DRAWING FOOD SOURCES:

- 1 Use Dash and your new Sketch Kit to illustrate your story and your map by making 2 drawings that each include 2 of the following shapes below. We recommend that you draw your shapes on a **8.5 inches x 11 inches** sheet of paper. This fits nicely in one of the mat cell sizes.

You can use the program keys below to help you get started. You might need to modify the programs to fit the size of your intended shape.

- 2 Dash must draw each chosen shape in two different sizes. Once Dash has drawn out each shape, feel free to add your creative touch to it however you want, using Dash or with your own hands.
- 3 Using tape, secure your drawings down on your mat to help represent the food source in **A7, A8, D2, or E2**.

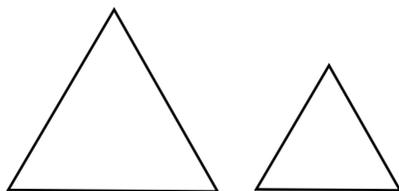
## YOUR CHALLENGE (PART 2) - TRACKING DEVICE:

- 1 First, create a tracking device (can be anything from a label to a LEGO piece that is attached to Dash) so that you can follow the creature back to its babies and learn all that you can about its natural habitat and behaviors.
- 2 Program your sea creature (Dash) to navigate from the research ship in **A1** to **D8**, where there have been reports of similar creatures. Be sure to avoid the various obstacles (polar vortexes and predators) that could hinder the sea creature along its journey, and be sure to pass through at least one of the various locations where the sea creature can find food for its long journey.

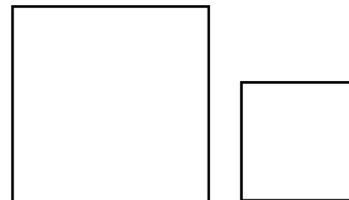
## PROGRAM KEYS FOR DRAWINGS:

**TRIANGLE**

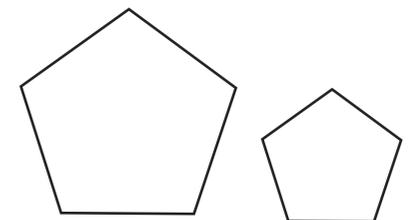
Wonder: 3CWY  
Blockly: VJ2K

**SQUARE**

Wonder: ALOA  
Blockly: H577

**PENTAGON (5 sides)**

Wonder: HF6K  
Blockly: LABK



YOUR CHALLENGE (PART 3) - ATTACHMENT BUILDING:

- 1 Now that you have reached the mysterious sea creature's babies, you quickly realize that the sea creature and its unborn babies are in danger. The habitat that they are nesting in has been jeopardized. It is in the path of the polar vortex, and the creatures won't be able to survive the cold currents.
- 2 Help the mother sea creature and its babies get to a safer spot by creating an attachment that can safely and carefully transport the 2 babies to the relocation area and drop them into their new nest (be careful not to let the babies go into dangerous waters by entering a predator or polar vortex cell).

CHALLENGE POINTS:

- 5 POINTS** Constructing an original tracking device
- 10 POINTS** Per shape that Dash can draw from the identified shapes; each drawing includes the same shape drawn TWICE in two different sizes **(10x2 = 20 possible points max)**
- 20 POINTS** Constructing an original attachment to help move the baby sea creatures to safety
- 30 POINTS** Successfully relocating the 2 baby sea creatures to their new home

*(5 + 10 + 10 + 20 + 30 = 75 possible challenge points)*

BONUS POINTS:

- 20 POINTS** Thematic set design (think decorating the map, the obstacles, and anything else to add to your story and presentation)
- 10 POINTS** Creating an attachment that can carry and deliver both babies (2 ping pong balls) at the same time to the relocation nest
- 5 POINTS** Dressing up and naming Dash as the mysterious sea creature
- 5 POINTS** Passing through at least one food source cell to help nourish the sea creature
- 5 POINTS** Having Dash use multiple colors in your drawings
- 5 POINTS** Adding sea creature sounds in the program as Dash moves along the route

*(20 + 10 + 5 + 5 + 5 + 5 = 50 possible bonus points)*

TOTAL POINTS EARNED:

CHALLENGE POINTS

+

BONUS POINTS

=

MISSION SCORE

## TURN IN:



As your team's evidence for the Final Mission, please remember to record all your hard work, along with your Wonder or Blockly Key. Your coach can turn in all your team's evidence for the Final Mission.

## TIME TO LOG:

- Take time to complete team logs (aka, journals) during your WLRC voyage. Your coach can find sample templates in the Coaches' Guide.
- As a team, set your goals, record your progress, document your successes (and failures), and note your reflections.
- Create a final presentation to illustrate your story and inform others of all that you have learned about this creature.
- Record a short video of Dash successfully running through your program for relocating the baby sea creatures.
- Take a short video of Dash drawing the 2 different shapes. You can create 1 video for each drawing if you would like.

TEAM NAME:

DATE:

TEAM MEETING #:

MORE INFORMATION

<https://www.makewonder.com/education/robotics-competition>

&lt;/WLRC&gt;

v:onder  
workshopIn Support With  
acer