



2016-2017

ROBOTICS COMPETITION

FINALIST CHALLENGE DOCUMENT

Ages 6-8

Robotics Competition '16-'17 : Final Round

Age Bracket 6 - 8

Congratulations! Your team has braved the Animal Habitat Rescue and was selected as one of the top teams in the world! The animals on Bear Byte Island thank you for your service in saving them from the great dangers they were facing. The final challenge will get you closer to winning the grand prize and the honor of being the best team in the world!

You have until **February 24th, 2017 at 11:59pm PST** to submit your solutions. You must submit the following at clubs.makewonder.com:

- The Wonder Key of your program for Bamboo Hullabaloo
- A link to a video of your robot completing the Bamboo Hullabaloo
- A video about your team and community
- A link to your science journal

You will need to use the same grid that you used during the Animal Habitat Rescue. It is a **150cm** by **240cm** grid. Each grid line is **30cm** apart. You can use painter's tape to **tape down the grid** (you can put tape on a tarp for better portability) or purchase one at our **store**.

- Label the rows from the bottom to top with **A** through **E**
- Label the columns from the left to right using **1** through **8**.



Final Mission: **Bamboo Hullabaloo**



The fire destroyed much of the Bamboo Forest and the giant pandas are going hungry! They only eat a few types of bamboo. Help Dash restore the habitat by planting their special bamboo seedlings.

What you need



• Dash



• Dot



• 3 Solo cups



• Your tablet



• 2 ping pong balls (or Launcher balls)

• **Materials to build an attachment for Dash to carry ping pong balls**


(suggestion: you can use Building Brick Connectors and Lego bricks for this)





SETUP

- Put 2 cups rightside up at B5 and D5.
- Put 1 cup upside down at C5 and put Dot on top. Dot is the panda bear.

BUILD

- Make Dash an attachment that lets Dash carry at least 1 ping pong ball and then drop it off.

Dash's starting place:  C1

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



Bamboo Hullabaloo

Your mission

Make Dash find the 2 rightside up cups and drop a ping pong ball into each cup.

RULES

- Don't disturb the panda bear! Don't knock Dot off the cup or move Dot's cup out of the cell.
- Don't move the other cups out of their cells.

- If your attachment can only carry 1 ball at a time, Dash must come to Row 1 for you to re-load with the 2nd ball. You can re-start your program after you re-load, but you must use the same program.
- You can only drop 1 ping pong ball into each cup.
- You can't move Dash with your hands at any time.
- Don't make Dash go outside the grid!



In your submission video, take a video of Dash running your code once.



Scoring (50 pts max)

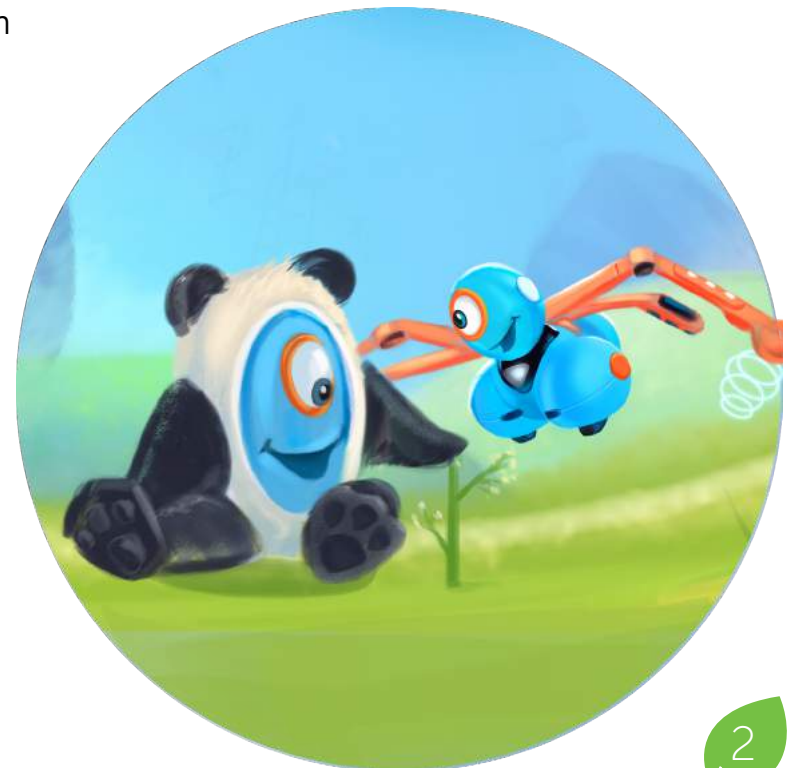
20 points for dropping a ping pong ball into the cup at B5

20 points for dropping a ping pong ball into the cup at D5

10 points for using or designing an attachment that can carry two balls at a time



Dress Dot up as a panda.





Team Introduction Video

25 points

Create a video to introduce your team to the rest of the Wonder League community! You should cover the following in your video:

- An introduction of your town and school. What's something special about it that you take pride in? (5 points)
- An introduction of the members on your team and your coach! (5 points)
- A challenge you faced and how you overcame it. (5 points)
- Something you learned from the Wonder League Robotics Competition (5 points)
- Advice to other teams (5 points)



Science Journal

72 points

Scientists keep journals as detailed records of their experiences, observations, and scientific thinking. Journals help scientists think through problems and arrive at creative solutions. You can read more about journals [here](#).

Solving the Bamboo Hullabaloo mission will take your team many different tries. You'll create a program, try it out, change something, and then try again! You must document 3 of your tries in your journey to successfully completing the mission in your scientific journal.

Journal Entries

You should have **3 Entries** in your journal. Each entry should include:

- **Project Details:**
 - Date
 - Your school/club name
 - Your team member names
 - Your team roles
 - Your attempt #
- **Defined Goal**
 - What is your goal for the project?
 - Which part of the mission are you trying to tackle?
- **A Plan**
 - What steps will your team use to reach the goal?
 - What will each member of your team do to contribute to the plan?
- **Results**
 - Describe what happened when your team ran the program.
 - Assess and analyze any mistakes that might have occurred.
 - Represent your results/data using visual graphics (illustrations / diagrams / posters / videos).
- **Conclusion**
 - Describe what you learned during the design and/or experiment process.
 - What are your next steps?

Journal Presentation

Please combine your journal entries and submit them as a Science Journal Presentation. Your presentation can be submitted in one of the following forms:

- Video Journal
- Blog
- Website
- Slideshow (Keynote/PowerPoint)
- Written Document (Word/PDF)

We encourage your team to be creative about how your journal entries are presented. You can add music, narrative writing, props, set design, and more!

You must submit a link to your journal. If you choose to make a Word Document or PDF, for instance, you should upload it to Google Drive or Dropbox and submit the link to it. We will publish all finalist team journals for other teams to see after the competition is over so that you can learn from one another.

Judging Criteria for Journals

Journal Demonstrates	Developing (3 point)	Proficient (6 points)	Good (9 points)	Exemplary (12 points)
Presentation	<p>Some required elements are present.</p> <p>Organization, neatness, and clarity need attention.</p>	<p>Most required elements are present.</p> <p>Somewhat organized and neat.</p>	<p>All required elements are present.</p> <p>Somewhat organized, neat, and well thought ideas.</p> <p>Occasional use of scientific vocabulary.</p>	<p>All required elements are present and delivered in a creative manner.</p> <p>Organized, neat, and well thought ideas.</p> <p>Scientific vocabulary is used throughout entries.</p>
Planning	<p>Some or no mission attempts include a brief description of</p>	<p>Most mission attempts include a brief description of</p>	<p>All mission attempts include a well described plan.</p>	<p>All mission attempts include a clear and thorough plan.</p>

	<p>the team's plans.</p> <p>Plans are difficult to understand.</p>	<p>the team's plans.</p> <p>Some plans include steps.</p>	<p>Some plans include:</p> <ul style="list-style-type: none"> -steps -explanations about the team's decision making process. 	<p>All plans include:</p> <ul style="list-style-type: none"> -methodical steps. -explanations/insights about the team's design thinking and decision making process.
<p>Visual Graphics</p>	<p>Only a few visual graphics are used and are difficult to understand.</p>	<p>Some visual graphics are used and are easy to understand.</p>	<p>Visual graphics clearly communicate some aspects of the project (plans, results, etc).</p> <p>Most important elements are labeled, drawn clearly and easy to understand.</p>	<p>Visual graphics represent information in a meaningful and insightful way.</p> <p>All important elements are properly labeled, drawn clearly, and easy to understand.</p>

<p>Understanding Information</p>	<p>Some or no journal entries describe mission attempt results.</p>	<p>Most journal entries describe mission attempt results.</p>	<p>All journal entries clearly describe mission attempt results.</p> <p>The team uses results to generate some next steps or insights.</p>	<p>All journal entries clearly and thoroughly describe mission attempt results.</p> <p>The team uses results to generate unique and interesting insights and/or next steps.</p>
<p>Teamwork</p>	<p>Team efforts seem unbalanced. A few members of the team did the majority of the work, or there was excessive adult direction.</p>	<p>Majority of team members put effort into their individual roles but didn't go out of the way to help other members on the team.</p>	<p>All team members put effort into their individual roles and helped others when they needed it.</p>	<p>Team members went above and beyond their individual roles and worked together on overcoming obstacles.</p> <p>These teams may also have helped other participating teams.</p>

Creativity	Minimal creativity or thought about using different ways to solve the problem.	Came up with a few different ways to solve the problem, but the solution was not necessarily creative.	Came up with unexpected ways of solving the problem.	Went above and beyond to come up with an imaginative solution to the problem.
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