



</WLRC>

\_TEAM\_NAME

\_TEAM\_MEMBER\_NAME

2017-18\_Wonder League Robotics Competition

w:onder  
workshop



x\_0917\_8:05\_INTERGALACTIC TRANSMISSION // DASH & DOT // 08:05 AM

## \_NEWS FLASH\_

### Coming Soon: The Newest Cosmic Community

< Close your eyes. Go ahead -- do it. >

< Now, tilt your head backwards, nose pointing towards the sky. Don't open your eyes, but take a moment to imagine. Imagine flying upward through our atmosphere -- the troposphere, to the stratosphere, to the mesosphere, up to the thermosphere and then the exosphere -- and get caught up in the solar winds. Break free of the Earth's gravitational pull and launch into the greater universe. Now what do you see in the darkness? >

< With your eyes still closed, think back to Monday, Aug. 21, 2017, the day that many Earthlings experienced a solar eclipse; one of only two times this calendar year when the moon passed in front of the sun (from Earth's viewpoint). For many in North America, this solar eclipse totality will be a once-in-a-lifetime sighting. And while many of us Earthlings were captivated by the rare sighting, what seemed to fly under the radar was the gravitational pull created by the combined forces of the moon and the sun on one side of the Earth. Look up facts about the 40mm planet "bulge."\* Are your eyes open now? >

< Close them once more. And imagine how this combined pull of gravitational forces might have knocked a small celestial body, one of many floating about in deep space, loose from its normal orbit.\*\* This bit of space rock, not visible with one's naked eye or snazzy eclipse glasses, careened and twirled its way through space's vastness until it was caught up in Earth's moon's gentle gravitational pull, and now orbits lazily around the moon. >

#### \_MISSION OBJECTIVES

##### \_ROBOT TEAM



\_CONDITIONS  
SOLAR HAZE

\_WINDS  
150 MPH

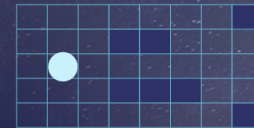
\_PRESSURE  
450 MBLL



##### \_GRAVITATIONAL PULL



##### \_PLAYING FIELD



##### \_MISSIONS

MISSION ONE\_EXPLORE

MISSION TWO\_CREATE

MISSION\_THREE\_CELEBRATE

\*This fact is indeed true! Do some quick research about it.

\*\*This part is indeed fictional. No research needed -- just use your imagination.



x\_0917\_8:05\_INTERGALACTIC TRANSMISSION // DASH & DOT // 08:05 AM

## \_NEWS FLASH\_

< This small astronomical object -- a space island, really -- has caught the attention of many. With new missions to the moon by the United States and China in the works, rumors have started to swirl. Could this space island be a universal common spot for all? Could it be a new space pit stop? And what could be built on the space rock? A playground, park, museum, or garden? While experts are still debating if it can be defined as a new planet (see criteria for such a planetary definition), we at Wonder Workshop believe that the possibilities for this cosmic community are endless. And luckily, Dash has been asked to be part of a universal task force to create a new intergalactic neighborhood. A blank canvas (well, rock) awaits.>

< We are looking to you, Earthling, to help Dash with this new interstellar mission. No space travel is required, but they need your help as part of the Mission Control ground team. You need to provide the inspiration and the ideas for Space Island. This is an opportunity to develop the greatest community ever seen by woman, man, and ... well, all creatures in general! We need you to create the programs to help Dash explore, clear, design, build, and celebrate this new space space (get it?):

**MISSION ONE:** Explore and clean up Space Island.

**MISSION TWO:** Renovate Space Island by creating a \_(you choose)\_.

**MISSION THREE:** Celebrate your accomplishments with an intergalactic Space Island parade.>

**Do you accept?**

**What is your final answer?**

### \_MISSION OBJECTIVES

\_ROBOT TEAM



\_CONDITIONS  
SOLAR HAZE

\_WINDS  
150 MPH

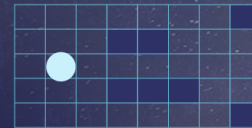
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450 MBLL



\_GRAVITATIONAL PULL



\_PLAYING FIELD



\_MISSIONS

MISSION ONE\_EXPLORE

MISSION TWO\_CREATE


MISSION\_THREE\_CELEBRATE



\_MISSION ONE // LOGBOOK\_

# EXPLORE



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_TEAM NAME	_TEAM MEMBER NAME	_DATE	_TEAM MEETING #
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# E X P L O R E

## < CHALLENGE\_ONE >

1 < Mission Control Center >

2

3 < The recent discovery of Space Island orbiting  
 4 near our planet's moon is out of this world –  
 5 literally! Our satellites have estimated that  
 6 the island is a perfect size for exploration.  
 7 The International Space Station team has  
 8 anointed Dash as the latest cosmonaut, a true  
 9 global ambassador to pioneer this new cosmic  
 10 adventure. Dash needs your dedicated teamwork  
 11 to help explore every square centimeter of the  
 12 island. We'll also need someone to record and  
 13 share Dash's discoveries with the world. >

14

15 < Are you up for this first challenge? >

< Over and out. >

W.

//\_SET\_UP

1. Place Dash in A1 to start.
2. Place an island inhabitant (an upside-down cup) in C3 and C7.

//\_0917\_MATERIALS\_NEEDED

- 5x8 grid
- Two 18 oz. cups
- Dash
- Blockly or Wonder
- Device

### < TIME TO LOG >

Make sure to document your operations. Share the following with your coach:

- 1** Your Wonder Key or a screenshot of your code
- 2** A short video of Dash running through your program
- 3** A few photographs of your logbook journaling

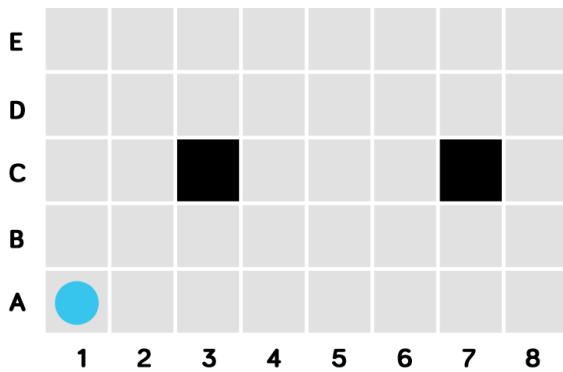


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# E X P L O R E

## < CHALLENGE\_ONE >

### < YOUR CHALLENGE >



- DASH
- ISLAND INHABITANT (upside-down cup)

1. Program Dash to travel through each and every cell.  
*Discuss with your team and document what Dash finds!*
2. Do not disturb the island's inhabitants in C3 and C7.  
*What inhabitants did you discover on the island? Decorate these cups to represent your discoveries.*
3. Do not fall off Space Island (stay inside of the grid)!

### < SCORING >

**1** point For each cell Dash travels through (38 points possible)

### < BONUS POINTS >

**2** points Each time Dash uses lights, sounds, or animations during the exploration

**20** points If you create a successful program in both Blockly and Wonder

### < TOTAL POINTS EARNED >

CHALLENGE\_ONE

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TOTAL\_POINTS\_EARNED



_TEAM NAME	_TEAM MEMBER NAME	_DATE	_TEAM MEETING #	
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**< TODAY'S PLAN >** \_WHAT IS YOUR GOAL TODAY?

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\_DRAW OR WRITE ABOUT WHAT DASH NEEDS TO DO.

\_WHAT STEPS DO YOU PLAN TO TAKE?

<b>STEP 1</b> _____ _____ _____ _____	<b>STEP 2</b> _____ _____ _____ _____	<b>STEP 3</b> _____ _____ _____ _____
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### < PLANNING GRID >

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## < DESIGNS >

\_\_\_\_\_ **needs to** \_\_\_\_\_  
< user > < action >

**in order to / because / so that** \_\_\_\_\_  
< circle one >

### \_SKETCH YOUR IDEAS

### \_HOW DID YOU TEST YOUR IDEAS?

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### \_WHAT WORKED WELL?

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### \_WHAT DIDN'T?

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\_TEAM NAME

\_TEAM MEMBER NAME

\_DATE

\_TEAM MEETING #



### < TODAY'S MILESTONES >

\_WHAT WAS YOUR ROLE TODAY? WHAT DID YOU DO TO HELP THE TEAM?

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\_WHAT HAPPENED WHEN YOU RAN YOUR PROGRAM? WHAT MIGHT YOU NEED TO CHANGE?

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\_WHAT WAS THE MOST CHALLENGING PART OF TODAY?

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\_WHAT WAS THE MOST REWARDING PART OF TODAY?

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\_WHAT WILL YOU TACKLE THE NEXT TIME YOU MEET?

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_TEAM NAME	_TEAM MEMBER NAME	_DATE	_TEAM MEETING #
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# E X P L O R E

## < CHALLENGE\_TWO >

1 < **Extraordinary Earthling** >

2

3 < **Your support has been critical! Now that you have**

4 **helped Dash explore every unknown centimeter of**

5 **Space Island, we have a better idea of what is**

6 **floating so far above the Earth. The opportunity**

7 **to establish a cosmic community for all creatures,**

8 **near and far, to enjoy is just unheard of. But**

9 **sadly, Dash has discovered space junk littering**

10 **the land. Please work with your team to clean up**

11 **the area so that you have a blank slate for some**

12 **new community designs and developments. >**

13

14 < **We're sure the native inhabitants will be pleased**

15 **(remember not to disturb them). It's time to clean**

16 **up this amazing Space Island for all to enjoy! >**

17

18 < **Report back. >**

∨.:

//\_0917\_MATERIALS\_NEEDED

5x8 grid

Five 18 oz. cups

Bulldozer accessory *\_optional*

DIY materials for an attachment *\_optional*

Dash

Blockly or Wonder

Device

//\_SET\_UP

1. Place Dash in A1 to start.
2. Place an island inhabitant (an upside-down cup) in C3 and C7.
3. Place a piece of space junk (an upside-down cup) in B3, C4, and D5.  
*What kind of space junk did Dash find? Decorate the cups to represent this galactic garbage.*
4. Designate A8-E8 as the Collection Zone.

### < TIME TO LOG >

Make sure to document your operations. Share the following with your coach:

- 1

**Your Wonder Key or a screenshot of your code**
- 2

**A short video of Dash running through your program**
- 3

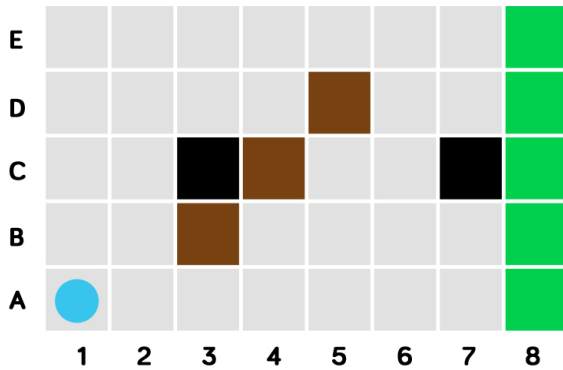
**A few photographs of your logbook journaling**

_TEAM NAME	_TEAM MEMBER NAME	_DATE	_TEAM MEETING #
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# E X P L O R E

## < CHALLENGE\_TWO >

### < YOUR CHALLENGE >



- DASH
- ISLAND INHABITANT (upside-down cup)
- SPACE JUNK (upside-down cup)
- COLLECTION ZONE

1. Program Dash to locate the space junk.
2. Program Dash to move the space junk into the Collection Zone (A8-E8) using an original attachment or the bulldozer.
3. Remember, do not disturb the island's inhabitants in C3 and C7.
4. Do not fall off Space Island (stay inside of the grid)!

### < SCORING >

**10**  
points

For each piece of space junk moved from:

\_B3 into the Collection Zone (A8-E8)

\_C4 into the Collection Zone (A8-E8)

\_D5 into the Collection Zone (A8-E8)

### < BONUS POINTS >

**20**  
points

If you moved all three pieces of space junk in one trip

**20**  
points

For creating an original attachment to move the space junk

### < TOTAL POINTS EARNED >

+

=

CHALLENGE\_ONE

CHALLENGE\_TWO

TOTAL\_POINTS\_EARNED



\_TEAM NAME

\_TEAM MEMBER NAME

\_DATE

\_TEAM MEETING #



< **TODAY'S PLAN** > \_WHAT IS YOUR GOAL TODAY?

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\_DRAW OR WRITE ABOUT WHAT DASH NEEDS TO DO.

\_WHAT STEPS DO YOU PLAN TO TAKE?

STEP

**1**

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STEP

**2**

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STEP

**3**

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\_\_\_\_\_ **needs to** \_\_\_\_\_  
< user > < action >

**in order to / because / so that** \_\_\_\_\_  
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### \_SKETCH YOUR IDEAS

### \_HOW DID YOU TEST YOUR IDEAS?

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### \_WHAT WORKED WELL?

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### < TODAY'S MILESTONES >

\_WHAT WAS YOUR ROLE TODAY? WHAT DID YOU DO TO HELP THE TEAM?

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\_WHAT WAS THE MOST CHALLENGING PART OF TODAY?

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\_WHAT WILL YOU TACKLE THE NEXT TIME YOU MEET?

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# E X P L O R E

## < CHALLENGE\_THREE >

1 < **Extraordinary Earthling** >

//\_0917\_MATERIALS\_NEEDED

2

3 < **Mission One is almost complete! Dash just needs**

4 **your assistance in removing the last little bits**

5 **of space junk. Help Dash sort the garbage from**

6 **the recyclables and move the items into their**

7 **designated areas in the collection zone. You've**

8 **been quite respectful of all that's native to**

9 **Space Island. Well done! You're well on your**

10 **way to creating a unique space in, well, space,**

11 **for all to enjoy. >**

- 5x8 grid
- Two 18 oz. cups
- Six cotton balls
- Nine large paper clips
- Bulldozer accessory *\_optional*
- DIY materials for an attachment *\_optional*
- Additional materials (e.g., bottle caps) for more space junk *\_optional*
- Dash
- Blockly or Wonder
- Device

12

13 < **Signing Off.** >



//\_SET\_UP

1. Place Dash in A1 to start.
2. Place an island inhabitant (an upside-down cup) in C3 and C7.
3. Place three pieces of garbage (cotton balls) about 10 cm apart inside of B5 and D5.
4. Place three recyclables (large paper clips) about 10 cm apart inside of B3, C4, and D3.  
*Bend the paper clips so that they don't lie flat.*
5. Designate E8 as the recyclables collection area and A8 as the garbage collection area.

### < TIME TO LOG >

Make sure to document your operations. Share the following with your coach:

- 1** Your Wonder Key or a screenshot of your code
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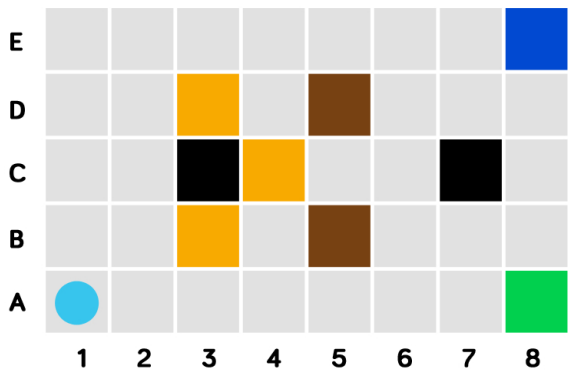


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# E X P L O R E

## < CHALLENGE\_THREE >

### < YOUR CHALLENGE >



- DASH
- ISLAND INHABITANT (upside-down cup)
- GARBAGE (cotton balls)
- RECYCLABLES
- GARBAGE COLLECTION
- RECYCLABLES COLLECTION AREA

1. Program Dash to locate the garbage and move it to the garbage collection area in the Collection Zone (A8).
2. Program Dash to locate the recyclables and move them to the recyclables collection area in the Collection Zone (E8).  
*What property could the attachment have to move the metal bits more easily?*
3. Remember, do not disturb the island's inhabitants in C3 and C7.
4. Do not fall off Space Island (stay inside of the grid)!

### < SCORING >

**5 points** For each piece of garbage moved:  
 \_From B5 to A8 (15 points total)  
 \_From D5 to A8 (15 points total)

**5 points** For each recyclable piece moved:  
 \_From B3 to E8 (15 points total)  
 \_From C4 to E8 (15 points total)  
 \_From D3 to E8 (15 points total)

### < BONUS POINTS >

**10 points** For creating an original attachment to move the garbage and recyclables

**10 points** If Dash makes only one trip to the collection zone while sorting the garbage from the recyclables

**5 points** For each piece of additional space junk added and sorted correctly

**5 points** For having Dash celebrate a job well done (dance, sing, etc.)

### < TOTAL POINTS EARNED >

	+		+		=	
CHALLENGE_ONE		CHALLENGE_TWO		CHALLENGE_THREE		TOTAL_POINTS_EARNED

_TEAM NAME	_TEAM MEMBER NAME	_DATE	_TEAM MEETING #	
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**< TODAY'S PLAN >** \_WHAT IS YOUR GOAL TODAY?

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\_DRAW OR WRITE ABOUT WHAT DASH NEEDS TO DO.

\_WHAT STEPS DO YOU PLAN TO TAKE?

<b>STEP 1</b> _____ _____ _____ _____	<b>STEP 2</b> _____ _____ _____ _____	<b>STEP 3</b> _____ _____ _____ _____
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< user > < action >

**in order to / because / so that** \_\_\_\_\_  
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### \_SKETCH YOUR IDEAS

### \_HOW DID YOU TEST YOUR IDEAS?

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### \_WHAT WORKED WELL?

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**< TODAY'S MILESTONES >**

\_WHAT WAS YOUR ROLE TODAY? WHAT DID YOU DO TO HELP THE TEAM?

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