wonder

Apr 3 / 2015

Magazine

How to host a Robot Party!

Playground favorites reimagined for robots.

Build a dump truck with Dash!

Robot Olympics in Oakland, CA!

•

æ

Coding is more fun with friends!

We always find that learning and playing are better when friends can share in the fun! Have you showed Dash & Dot to your friends? This issue of Wonder Magazine is all about the games and projects you can set up to play with the people in your life. In fact, we already tried them out at a party with our local community.

First, we talk about our robot party and what we think it takes to throw a smashing hit. Get some of your friends who have Dash & Dot together, or send us <u>an email</u>, and we'll help invite some new friends in your city. It was great for people to meet others who are also passionate about robotics, coding, and creativity. There are already plans for more play dates and connections!

This issue is packed with some of your favorite games - Bowling, Duck Duck Goose, Red Rover, Hot Potato, and more. We've reinvented them so that robots can play! Try them out, and we'd love to see what games you can come up with. <u>Submit your project here</u>, and it just might be featured in the next Wonder Magazine! What are you waiting for? Let's get playing!

What games, jokes, or questions would you like to see in the next Wonder Magazine? You can email us at any time at <u>ideas@makewonder.com</u>. We would love to hear from you!



Talk to you soon!

June

In this Issue:

Fun & Facts

Hosting a Robot Party
The Funny Corner
Projects & How-Tos
<u>Robot Bowling</u>
Duck Duck Goose
<u>Robot Red Rover</u>
<u>Hot Potato</u>
<u>Build a Bot</u>
<u>The Ultimate Joust</u>
Community Spotlig

In the Classroom

Wonderful Projects

2



S



ghts

																																								1		8	3)
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•		•		10
																																							ł	2	2	2	4	Ē
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				•	•	•	•	•		•	•	•	•	•	•	•	•	•	•		•		••

Hosting a Robot Party

Not too long ago, we hosted a robot party near the Wonder Workshop HQ in California! We had so much fun learning and playing with other kids who love Dash & Dot! In this issue of Wonder Magazine, we are sharing our tips for hosting a robot party of your own with good friends old and new.



your school, a community center! Make sure there are a few props and toys around to use with your robots.

Find a place to party. You'll need a place that fits about 10 to 15 people. Keep it simple! Try hosting it at your house,

Create an event! Join our robot party group on Facebook, and create or join an event! Know friends, classmates, or others who love Dash & Dot? Invite them over! If you need more people, we'll help you invite kids in your city who have Dash & Dot.

Prepare a project for show and tell. The best part of a robot party is that you get to learn about cool things from one another! Tell everyone with a robot to bring a project to share and any props or toys they want to use with their robots during the main event!



2

3



Watch the video we made at our event!



What we did

10am - Arrive at the party headquarters!

10am - 10:10am - Do an icebreaker to learn everyone's name and a fact about them. We played Hot Potato (page 14) to break the ice.

10:10 - 10:30am - Show and tell! Everyone got a chance to show something cool they made with their Dash & Dot.

10:30 - 10:45am - A snack and social break. We talked with one another, and some people shared the code behind their projects.

10:45 - 11am - Play a group game. Try playing Duck Duck Goose, Robot Red Rover, or the Ultimate Joust featured in this magazine!

11am - 11:45am - In groups of 2-4 people, collaborate on a project to work on together with your robots. You can learn a new coding trick, make up a game for others to play, or create a performance!

At our party, some groups made a music video, others put on a puppet show, and yet others created a set of towers to knock down. What awesome projects can you make up together?

11:45 - 12pm - Share with parents and the rest of the party! Be sure to tweet or post your projects with #makewonder to share with the rest of the world!

Hosting a Robot Party

4



Who knew? Robots love bowling just as much as we do! Design your robot bowling challenge by creating a grid and plotting out where you are going to set up your pins! Next, plot your course. How many pins can you take down in one Blockly program? Program, play, and challenge a friend!

What you'll Need:

- Dash
- Dot (optional)
- Bowling pins or other targets to knock down
- Painter's tape

Set up

Design your pin setup. Think about the way you want to design your targets for bowling. It may be helpful to draw out where you would like to place your targets and how far apart you'd like them to be from one another. Once you sketch out your plan, you can get to building!



x= torget or pin

Measure and place your grid and pins. Make a grid with painter's tape and place your targets. It may help to use centimeters (cm) to measure out a grid to equally space out your pins. In the photo above, each grid square is 50 cm x 50 cm. This way, you can build a precise Blockly program for Dash to bowl with!



2

Use Blockly to program your route.

How many blocks will it take to knock down the first pin?

6



Edit and run different programs until all your pins are knocked down. How many programs and blocks will it take? Can you add lights and sounds to add some flair to your bowling challenge?

Challenge yourself! What is the fewest number of blocks you need to bowl a strike? Try adding Dot into the mix to control Dash around the grid.



Want more bowling fun? Set up a new course, or challenge someone in a friendly competition!



Dot controlling Dash at Joaquim Miller Elementary in Oakland, CA!



Watch the video



Watch the video





Blockly: Use Dot to create a "remote control" to help Dash bowl a strike! This program makes Dash go forward, backward, left, or right based on how you move Dot.



How will you program Dash to get a lucky strike? Take a video of your robot in action, and show off your code! Post it to YouTube and

8

Blockly: Use Dot as a marker and clap your hands to tell Dash when to make a turn. Check out this code. If you configure your bowling pins in 3 rows, where would you need to put Dot to give Dash the right signal?



tag it with #makewonder to share it with the community!

Duck Duck Goose

Reinvent this playground favorite with Dot to add some surprise and delight into the mix! First program Dot to be the Duck Duck Goose picker. Once everyone is sitting in a circle, go around to pick the Goose with Dot, and take cover when the Goose starts to chase! Use standard rules, or make up your own!

What you'll Need:



• Dot

- Enough space to run around in
- A bunch of your friends!

Set up

1

Program your picker using Dot and the **Blockly** app. Check out our sample code! Choose one sound to represent the "duck" and another sound to represent the "goose".

We chose the **Cat** sound to represent a Duck and the **Lion** sound to represent the Goose. The picker needs to press the **top button** as they pass each person in the circle.

We designed the game to say Duck **6 times** before getting to the Goose in the first round and then **4 times** before getting to the Goose during the second round. You should create about 10 rounds with different numbers, and then you can put a **repeat loop** around the entire game to keep it going!

Add some lights to put in some special effects!



10





You're ready to play! **Grab some friends**, and have them sit in a circle. Make sure you have enough room to run around! You will need about 10 friends to make this fun.



Explain your program and the

rules to your friends. You can also modify the game to include a mosh pit! If the Picker gets caught by the Goose, they have to sit in the center of the circle.



It's game time! Time to have fun!

Robot Red Rover

Red rover, red rover send Dash right over! Challenge your friends to this robot version of Red Rover! Sit in a circle or parallel rows and then pass Dash back and forth using Blockly or Path to create your own robot algorithm. The closer you get to your goal, the more points you will earn. Make it harder by using more than 1 Dash or adding obstacles in Dash's way!





• Dash

• A bunch of your friends!

• Optional: obstacles for Dash to navigate around

Set up

Get all your friends to sit in parallel rows, in a circle, or in any other configuration that lets Dash run around in the middle.

2

The first person with the tablet has to send Dash from their position to someone else. Call out the person you're sending Dash to and then give Dash instructions on how to get there using **Blockly or Path**.

Make a rule that everyone needs a turn before anyone can have a second turn.

Play Options



In **Blockly**, use angles and distance to send Dash to the right place. Be sure to navigate around obstacles!





Did Dash make it? If Dash got to the right spot, you get **3 points**! If Dash missed the goal by 1 person, you get 2 points. If Dash was 2 people off, you get 1 point! Now it's the person who got the robot's turn, so you'll need to pass them the tablet! Keep playing until someone gets 10 points!



Want to challenge yourself? Send 2 Dash robots back and forth, or add an obstacle in the way! You can use the repeat until **Obstacle in Front** block to navigate around things in the way!



In **Path**, draw Dash's path to the destination! Remember that each grid is the length of a Dash!



Hot Potato with Dot

Quick, pass the potato! Turn Dot into a ticking time bomb and then pass Dot around. If the fire siren starts going off when the potato gets to you, you are out! We love playing this at parties where not everyone knows each other as an ice breaker. The person who gets out has to say their name and a fact about themselves.

What you'll Need:



DotA bunch of your friends!

Set up

Program your hot potato using Dot and the **Blockly** app. Check out our sample code! How do you want your hot potato to work? We like to start out slow and then go faster towards the end of the game.

You can pass the potato and program it to ring after a certain period of time. In this case, we have the potato going for about **8 seconds** and then **5 seconds** before it rings (hint: each light block takes 0.25 seconds to run). Match the number of rounds to the number of friends you have!

You can also program it to ring after a certain number of tosses if you want to **toss the potato**! Be careful to not hurt yourself if you plan on doing that!

Add some colors and flair to Dot as your potato goes around!







You're ready to play! **Grab some friends**, and have them sit in a circle. It's time to pass (or toss) the potato!



Explain your program and the rules to your friends. Pass the potato, and the person it stops at is out! If you are using this game as an ice breaker, have the person say their name and something about themselves before they get out! Of course you can also add your own rules.



It's game time! Share a video of the game in action!



Turn Dash into a dump truck so you can drop off some toys, give a tasty treat to a friend, or clean up your room. These building instructions help you build your bot, and then it's your turn to program Dash and bring your truck to life!

What you'll Need:



• Dash

- 2 Building Brick Extensions
- The LEGO® Compact Tracked Loader set!

Set up

- Build your dump truck attachment with the **Compact Tracked Loader** set and two Building Brick Extensions. Detailed building instructions here.
- Attach the **Building Brick Extensions** 2 to the left side of Dash's head and back. Check out this photo to get the right fit.
- Create your program in Blockly. Every 3 time Dash's head turns **30 degrees** left, the dump truck dumps! What can you use Dash's dump truck for?



Now what will you do with your dump truck? Deliver a note to a friend, carefully drop hot lava into a volcano, or go nuts like we did! We can't wait to see your creations. Post to YouTube or social media with **#makewonder**.







This Blockly project makes Dash go nuts! Watch this video to see Dash in action.

Wonder(ful) Projects

In each issue of Wonder Magazine, we show off great projects from the community! Check out how kids around the world are playing with Dash & Dot. This month we are inviting our friends to come play with Dash & Dot and reinventing playground games. Do you have a game you'd like to share with the community?

Do you want to be featured in the next Wonder Magazine? Submit your project here.



Robot Olympics!

Terri's class in San Antonio, TX are preparing for their Robot Olympics! Check out the creative ways they've strapped Dot to Dash! Follow her on <u>Twitter</u> or her <u>blog</u> to read more about the Robot Olympics when it happens! We can't wait.

Dot Controlling Dash

Ashley's students at the iCreate Technology Club in Austin, TX created a landing pad for a helicopter using Dash! Dot controls Dash to move back and forth and make sound effects!

Watch the video to see it in action!





An Obstacle Course with Dash

Ms. Steiner's class in Lincoln, Nebraska created an obstacle course for Dash! <u>Follow her on Twitter</u> to discover more of what she is doing with the bots!

We love the innovative things teachers are doing with Dash & Dot. We've collected blog posts and lesson plans into this Pinterest Board! <u>Check it out</u>, and you might be inspired do these projects at home or in your classroom!

The Ultimate Joust

Have a friend with a Dash robot or another toy itching to compete in a battle with Dash?

See if your Dash has what it takes to win The Ultimate Joust. Prepare Dash for battle by building a weapon and armor. Then build your own algorithm to face your opponent! Grab all your friends to watch the showdown.

What you'll Need:



- Dash
- Building Brick Connectors

• Plank, LEGO bricks, aluminum, tape, pipe cleaners - be creative with your armor and weapons!

Set up

1

Think up your game rules. How will the robots compete, and what does it take to win? Check out some ideas for how to design your game below!



Program the winning move. Use Blockly or Go to program your ultimate moves.

Play Options



Walk the plank - Put a plank on the ground (hint: an IKEA shelf works wonders) and put your bots across from each other. The last robot that stays on the plank wins! Here's an idea to use the head motion to knock your opponent off the plank:



20



Prepare your robot for battle! What armor and weapon will you build on Dash? Use the Building Brick Connectors to add LEGO or fashion your own armor using spoons, aluminum foil, and any other toys you might have.

It's all about style and wearing your colors proudly. Be sure to add a cape or personal touch for flair!



Watch the video!



Shield Knockdown - Time to charrrrrrrge! be sure to secure your weapons and your armor to Dash. Charge the robots towards one another, and the last bot whose shield falls of is the winner!





Watch the video!





Robot wars at the Roffey house in Edmonton, Canada!

.....

Now it's your turn! Create your own joust and post it to YouTube with #makewonder! Show the world what you created with code! V.

The Ultimate Joust



Watch the video of a joust using Go!

challenges that they described below.

The next day, first grade students were asked to decorate 4" x 6" note cards with their names. Holes were punched into these cards during the Robot Olympics in order to keep score. Everyone got at least one hole punch for participating in each of these five activities.

On the day of the Robot Olympics, the girls arrived at school 15 minutes early to set up the multi-purpose room. Each first grade class was scheduled for a one hour time slot between 8:30 and 11:30. The fifth grade girls ran the entire program, giving instructions at the start of each class session, rotating students through the activities and monitoring the overall tone of the event. Watch the video and check out the activities below!



Sweep-A-Thon

In this event, players control Dash using the Go app to sweep stuffed animals and action figures into a square marked by painter's tape. The more toys they sweep into the square, the more points they get. Each toy equals one point plus an extra point for participating. After a while, we realized that the animals and action figures had to move closer to the square because each first grade player only has one minute.



Helene has been the technology coordinator/computer lab instructor at Joaquin Miller Elementary for the past 10 years. She hopes to model her joy of lifelong learning to guide students to become more self aware by choosing tools that will empower their productivity and maximize selfexpression - regardless of grade level.

In the Classroom:

The Robot

Olympics

I presented the idea of a Robot Olympics for first graders to our fifth grade Girls Science Club a couple weeks ago. I brought in some props to stimulate ideas for designing playful challenges. Props included stuffed animals, action figures, blocks, animal bowling pins, a Twister game and some oatmeal cans. The girls split up into groups of two or three, selected their props, and brainstormed about ideas. They came up with the

2 Crash of the Cans

This game is called Crash of the Cans – oatmeal cans – for the Robot Olympics. The object is to get around all of the cans and then to the finish. Players use Go to steer the robot around the cans without knocking them down and then on to the blue square.



Players use Path to control Comet, the robot, to move along a Twister board. The Twister spinner is used to determine the color of the dot they need to go to. The robot is placed in front of the color just off of the Twister board. The player draws a path to get to a colored dot. If they get to the right color in one move with all three wheels on, they get three points, two wheel on earns two points, and one wheel is worth one point.



Robot Roll is played with Blockly. Robot Roll is basically bowling, but instead of using a ball we are using WALL-E, a robot, and animal bowling pins. You also need tape, an iPad, and WALL-E the robot. Half of the code is given to the player on the iPad and they have to finish it up. They press the top button on WALL-E, the robot, to see if his code knocks down the pins.



Tower of Robots

At the Robot Olympics players use the app Blockly to code Dash to get to Dot, who is at the end of a path of wooden blocks. Dash has to first get up a ramp of wooden blocks and then under a bridge before getting to Dot.

Looks like the event was a smashing hit! Here's a thank you note from one of the 1st graders to the 5th graders. It's great to see kids collaborating and teaching one another!

I liaked the robot o because we get i-pad coding skills. to imp aition was twiste I liked you gays beca oved are inspration liked when you said posi I liked when you span the the Spinner and read the color to us in twister. I was in presed by you have not that having that many people for 22 kids. I liked when you told us when to rotate. I liked twister also because you told as how many bole punches we gother wich From the due count.

The Funny Corner

Q: What kind of beat does a robot march to?

A: Any kind of algo-rhythm.

Q: Why do robots like cold weather?

A: Because they get to boot up.



Have a joke to share? Email it to <u>ideas@makewonder.com</u>, and it may be featured in the next issue of Wonder Magazine!

To contribute to the next *Wonder Magazine*, send your project images and videos, jokes, and questions to <u>ideas@makewonder.com</u>. Be sure to include what you want to be called, your age, and your location! Also, give us a shout out if you have any comments or questions!



gazine, send your project images and videos,

makewonder.com