



Week Two: 6 Hour Program

Day One - Pajama Day

Drive/Look/Light Folders

Class Connect should already be completed with campers names entered prior to the class starting.

Campers log into: [Code.makewonder.com](https://code.makewonder.com)

Teacher Code for this session:

Instructors should review the calendar for the day to ensure they are dressed to match the theme of the day.

Each week campers will be working towards completing a Robotic Challenge on Friday. All skills being taught, and independent practice will guide campers to completing the Friday challenge successfully.

Welcome Campers: 15 minutes

- Instructors should be wearing pajamas to go along with the theme of the day.
- Instructor Introduction- Share how excited you are that they are back for a second week of virtual robotics.
- Campers Introduction- Name and grade level. What is one thing you are hoping to be able to do after this week?
- Pajama Day! Compliment their participation.

Log On Help: 15 minutes

- Review the basics of logging in and address any issues the campers may have had.
- Ask if any camper had difficulty logging in to Zoom.
- Address any issues with logging in to the virtual simulator.
- Review how to toggle back and forth from Zoom to Simulator.
- Review how campers will share their screen. Make sure that you have allowed all participants to share their screens.

Review of Drive and Light Folders: 15 minutes

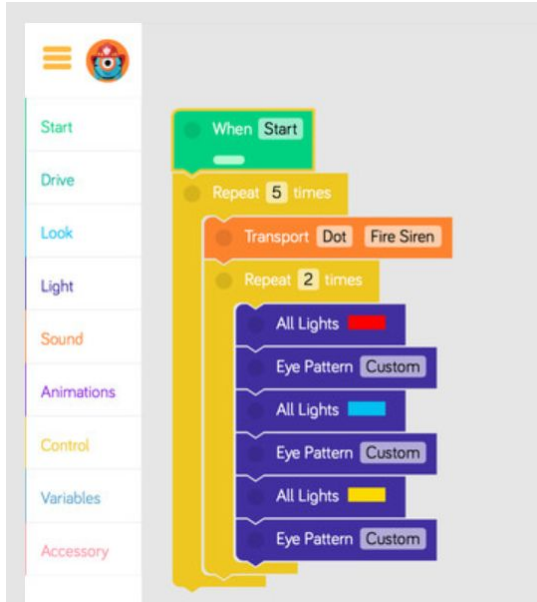
- Instructors should share their screen as they are reviewing what was learned last week.
- During the Week One session you were introduced to the Drive and Light Folders. Today you are going to use those folders and the commands within the folders to be able to change parameters and create a Nested Loop.
- Remember to change the parameters of a command block, you need to select the block you want to use and go into the actual block to change what that block is going to tell Dash to do.
- This is how we did that. (Instructor pulls up the simulator and models how to select the forward block in the Drive Folder and change the distance from 50 cm to 90 cm. Also, change the speed from Normal to Really fast. By changing parameters you are enhancing your program without having to add more blocks.

Campers to Independently Practice Changing Parameters in Drive 15 minutes

- Have campers go to their simulator and create a quick program using the Drive Folder only. Have them use the forward, backward, look right, look left, and set wheel speed blocks.
- Instructors should check in with each camper to check their status.
- Remind the campers that they should be testing their program as they are working to ensure their program is working the way they want it to.
- After 15 minutes or when all campers are finished come back together.
- Ask the campers, how was that? Do you see how you can change your program without having to add more blocks?

Introduction to Nested Loops 15 minutes

- Instructors to share their screen as they are introducing this skill.
- As programmers we can get creative in how we develop our program. Using a Nested Loop we can have Dash repeat several things.
- Think about a bird's nest and how nice and cozy a bird fits into its nest.
- A Nested Loop is similar to that. The command blocks will fit into the repeat blocks like birds in a nest.
- The Nested Loop Program looks like this:



- Ask campers to look at this program and ask them to predict what Dash will do when they hit start. ((Sample response: "Dash will make a fire engine noise and then go through all the light patterns two times. Then the entire process will repeat 5 times."))
- Instructor will play the program to see if the campers predictions were correct.
- Ask the campers, how many repeat blocks need to be used to create a Nested Loop? (2)

Campers will independently practice creating a Nested Loop- 20 minutes

- Campers will go to their simulator and clear their first program.
- Remind students that they are creating a Nested Loop and that their command blocks should be inside of 2 repeat blocks.
- Stress to the campers as they are adding to their programs they want to be testing what they have to ensure the program is doing what they want it to do.
- Instructors should be checking in with each camper individually to ensure they are successful.
- If a camper is struggling the instructors will ask them to share their screen and assist them in problem solving.
- Instructors will ask for a volunteer that wants to share their nested loop program with the class.
- Campers share by sharing their screen.

Day One Camper Independent Activity- 40 minutes

- Instructors will introduce the activity the campers will be working on.
- Instructors will share their screen.
 - Campers will be participating in a Camp Circus.
 - Campers will design a program using Nested Loops.
 - As Dash is performing in the circus, he will be performing as a clown.
 - Remember you need to “think” like a clown. Ask the campers: “What comes to mind when you think of clowns?”
 - You need to include spirit as well as colors and sounds. Record your own voice talking to the crowd.
 - Dash needs to engage the campers with a fun and creative routine.
 - Make sure that your program has nested loops, since that is what our focus was today.

***Instructors will release campers to work independently.**

- Instructors will check with each camper individually to ensure campers are working well and understand what they are supposed to be doing.
- If a camper is struggling ask the camper to share their screen so the instructor can help them solve the problem.
- Instructors will watch the time and ensure that there will be 45 minutes left for camper share as well as wrap up and instructions for the home challenge.
- Have campers save their program and name it “Nested Loop”

Wrap up activity - 45 minutes

Instructor to review appropriate behavior when campers are sharing.

- When we are sharing, we are only using positive words.
- Instructor gives an example: “John, I really liked how you were able to use all the color lights in your program.”
- We should feel good after someone comments on our work.
- Ask who would like to share their program with the group? (instructor selects who will share first)
- When all campers are done, have each group present their program to the class

- o Introduce themselves
- o Explain what Dash will be doing during the execution of the program that they wrote
- o Show the class how Dash executes their program
- If there is time remaining, campers can continue with the puzzles from yesterday. Click the 3 orange lines in the upper left hand corner and select puzzles. Remind campers that you can monitor their progress while they are completing the puzzles.

LUNCH

Welcome campers back to the session - 5 minutes

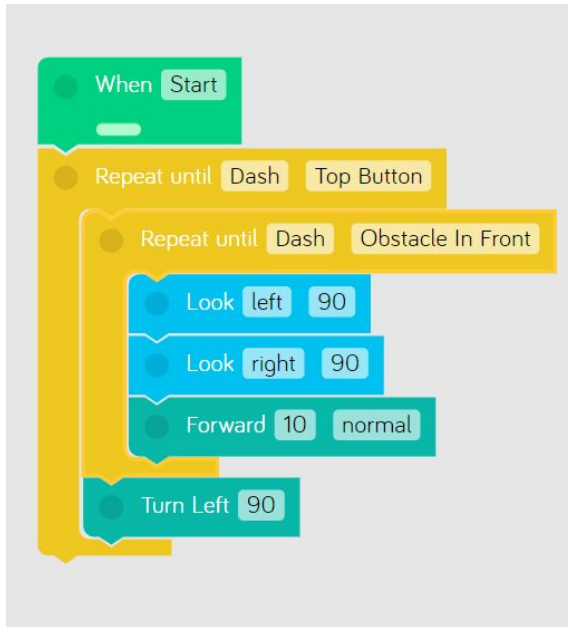
- Discuss what campers did before lunch
- Chat about what campers have been up to during the hour away from the screen

Instructors review the Look, Sound, Animation and Control Folders. 10 minutes

- Instructors will remind campers off the different command blocks within these folders.
- Remember that we can record our own voice onto Dash within the Sound Folder.
- We can repeat commands several times when we use the Repeat Blocks.

Instructors Introduce the Repeat Until Loops 15 minutes

- Instructors should share their screen and show this image:



- This is a Repeated Loop. Ask the campers to look at this program and predict what is going to happen.
- Instructors should explain that Dash is going to do what is inside the Repeat Until block- look left, look right, drive forward 10cm UNTIL there is an obstacle in front of him. Then he will do the final command of turn left 90.
- Answer any questions.

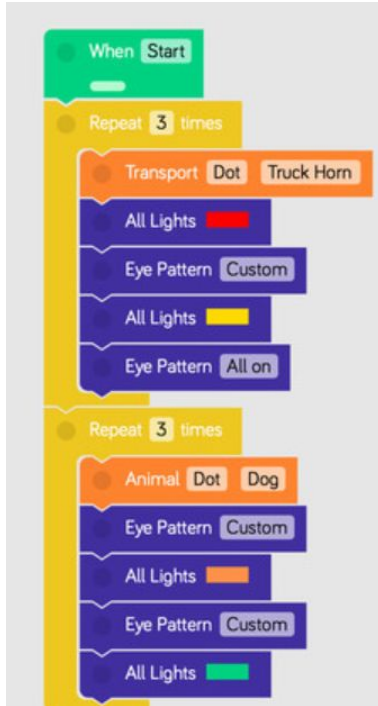
Independent Activity Practicing Repeated Loop 30 minutes

- Introduce the activity they will be working on. “Today you are going to participate in a camp track and field activity. There are many running activities that Dash will have to complete if he wants to win a medal. You are going to create a program that shows Dash is running a race and every so often Dash runs into a roadblock. He has to move around the roadblocks so Dash will need to move right and left to get around. Remember you are using the Repeat Loop within your program. You should also be adding sound blocks and light changes to add to the fun of your program.
- If campers are done and others are still working those campers can start to complete the puzzles or they can add to their program.

- Make sure that the campers are testing their programs as they are building.

Instructor to Model using Multiple Loops- 10 minutes

- Instructor should share their screen to show this image:



- Ask the campers, “ What do you predict Dash will do if he was following this program?”
- Listen to their responses.
- Let them know that Dash will be repeating multiple loops. First he will make a truck horn noise, then his lights will change to red, his eye pattern will change and then his lights will then change to yellow.
- Mention to the campers that they can also change the number of times the loop will repeat.
- Ask the campers if they have any questions about multiple loops.
- Remind campers that if they use a Repeat Forever block instead whatever they place inside the block will repeat and anything else after will not happen.
- Save your program as Repeated Loop

Independent Activity Practicing Multiple Loop 20 minutes

- Have campers add to their existing program from the previous activity.

- They need to incorporate repeated loops.
- Remind the campers that they do not want to use the repeat forever command blocks.
- Encourage campers to add sound and animation as well as light colors to their program to make it more exciting.
- Instructors want to pay attention to the time to ensure campers will be able to share their programs.

Wrap up 30 minutes

- Instructors will ask who would like to share their program with the group.
- Have campers share their screen when they are sharing.
- Remind all the campers about being positive when someone is sharing their work.
- After certain campers have shared their program, the instructor will go over the instructions for the home challenge.

Home Challenge Activity Directions

Day One-Bowling Home Challenge

Campers will participate in The Bowling Challenge with Dash. Using the simulator you will create a program in Blockly that enables Dash to complete the challenge. What an exciting and fun challenge. Who will be able to rise to this challenge? Campers will create a program in Blockly that includes the following:

Here is the grid you will need to follow when designing your program. There are bowling pins located at each lighter color side.

- Your goal is to create 1 program that will successfully knock down all of the bowling pins that are located on the light color lines.
- Dash will begin on the upper left hand corner of the grid.
- Make sure that as you are designing your program you have to grid handy to test if the blocks you are choosing will indeed knock down the specific placed pins.
- You should click start 1 time and your program will direct Dash to knock down all of the pins.

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Make sure that when you have completed this challenge you save your work as **Bowling**. Tomorrow you will have the opportunity to share your program with the group. Remember if something is not looking right with your program, review the directions and problem solve while looking within your program. You may need to change a block or two in order for Dash to move the way you want him to. Good Luck!

Additional Home Activities:

Day Two - Wild Wild West Day

Class Connect should already be completed with campers names entered prior to the class starting.

Campers log into: [Code.makewonder.com](https://code.makewonder.com)

Teacher Code for this session:

Instructors should review the calendar for the day to ensure they are dressed to match the theme of the day.

Welcome Campers: 15 minutes

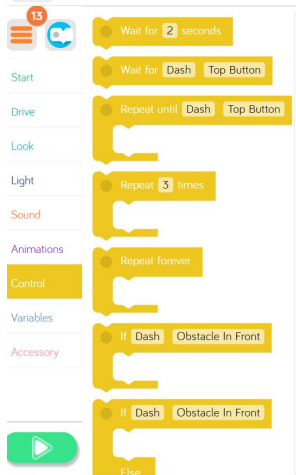
- Instructors should be wearing wild west gear to go along with the theme of the day.
- Wild Wild West Day! Compliment their participation.
- Ask, “How did everyone do with the home challenge last night?”
- Did anyone run into any struggles as you were completing the bowling activity?
- Instructors will address as needed.

Log On Help: 15 minutes

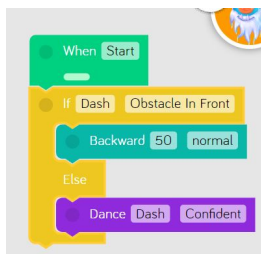
- Review the basics of logging in and address any issues the campers may have had.
- Ask if any camper had difficulty logging in to Zoom.
- Address any issues with logging in to the virtual simulator.
- Review how to toggle back and forth from Zoom to Simulator.
- Review how campers will share their screen. Make sure that you have allowed all participants to share their screens.

Instructor Reviews Controls Folder - 20 minutes

- Share all of the command blocks in this folder:



- Model how to open each command block and change parameters.
- Wait for ___ seconds command block. Campers can modify the amount of time Dash will wait before doing any other command.
- Wait for Dash command block. Campers can put a different block inside this command block, and the command will happen until whatever they set happens. It is set with Wait for Dash -Top Button. So, Dash will wait to continue a command until that top button is pushed. A button will appear under the simulator window.
- Repeat until Dash – Top Button Command Block- Whatever command the camper puts inside this block will repeat until the next activity occurs. It comes set to Top Button. If a camper selects drive forward 50 cm that will repeat until the top button is pushed. A button will appear under the simulator window in a box labeled “Robot Inputs”.
- Repeat command block. Whatever command the camper places inside the repeat command block will repeat however many times they select. Model how to change the number of times it repeats.
- Repeat Forever Block- Whatever command is placed within this command block will repeat forever. Nothing after it will happen.
- If Dash- Obstacles In Front Command Block. Whatever is placed inside this block will be what Dash does if there is an obstacle in front of him. Model how you can change the parameters within that command block.
- If Dash- Obstacles in Front-Else. Whatever is placed in the top part of this command block will be substituted for what is placed in the bottom section of the command block. For example: If Dash has an obstacle in front instead of him driving backwards 50 cm he will do a silly dance instead.



- Q & A time.

Explain lasso the goat activity - 5 minutes

- Have Dash light up Blue
- Drive to the goat



- In the Wild West, cowboys and cowgirls lasso the animals in order to train them
- Lasso the goat by driving around the goat until Dash's top button is pressed - Hint: use the repeat block
- Have Dash wait 1 second
- Dash's lights should change to red
- Have Dash celebrate with an animation
- Name it Lasso

Complete lasso the goat activity - 15 minutes

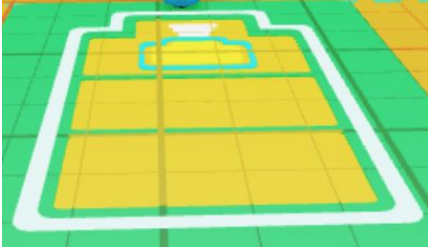
Explain Find all the rattlesnakes activity - 5 minutes

- Have Dash light up green
- Drive to all of the green buildings in the simulator and find the rattlesnakes
- In order to find the rattlesnakes, Dash must slither around in front of each of the green buildings (there are three green buildings)
- Create a program that had Dash drive to each green building, slither in front of the building using any blocks from the control tab, then move on to the next building and do the same thing for all three buildings
- Name it Rattlesnakes

Complete the Find the Rattlesnakes activity - 20 minutes

Explain make a campfire activity - 5 minutes

- In the Wild West, people had to make campfires for light and to stay warm
- Have Dash build a campfire
- Drive to the battery symbol - this is where the fire will be made



- In order to lay the logs down for the fire, have Dash pace back and forth along the battery 3 times (use the repeat block)
- In order to light the fire, have Dash's lights turn red
- Have Dash tell a quick story around the fire
- Record your own voice telling a campfire story
- Have Dash roast marshmallows
- This can be done by having Dash drive to the front of the battery, turn lights green, wait 2 seconds, drive to the back of the battery, turn lights orange, wait two seconds.
- Repeat that for as many marshmallows as Dash would like to have
- Name it Campfire

Complete Make a Campfire activity - 20 minutes

Explain final activity to put lasso the goat, find all the rattlesnakes, and make a campfire activities into one - 5 minutes

- Make one big program putting it all together
- Name it Wild West

Complete final activity - 10 minutes

Wrap up activity - 45 minutes

Instructor to review appropriate behavior when campers are sharing.

- When we are sharing, we are only using positive words.

- Instructor gives an example: “John, I really liked how you were able to use all the color lights in your program.”
- We should feel good after someone comments on our work.
- Ask who would like to share their program with the group? (instructor selects who will share first)
- When all campers are done, have each group present their program to the class
 - Introduce themselves
 - Explain what Dash will be doing during the execution of the program that they wrote
 - Show the class how Dash executes their program
- If there is time remaining, campers can continue with the puzzles from yesterday. Click the 3 orange lines in the upper left hand corner and select puzzles. Remind campers that you can monitor their progress while they are completing the puzzles.

LUNCH

Welcome campers back to the session - 10 minutes

- Discuss what campers did before lunch
- Chat about what campers have been up to during the hour away from the screen

Introduce Dig for Gold activity - 15 minutes

- In the Wild Wild West, people were digging for gold! Dash will be digging for gold today!
- Find all four of these symbols (three yellow and one green)



- These spots are where to look for treasure!
- When getting to each spot, Dash needs to dig!
 - Drive to each spot (using commands for advanced arrow keys for novice)

- **“Dig” by driving in a square around the symbol 3 times**
- **Wait 2 seconds**
- **If Dash hears you yell “We’ve struck gold!” have Dash light up yellow with all lights**
- **Else - dig by driving in a square around the symbol 3 more times**
- **Repeat until striking Gold**
- **Once you find Gold at one symbol, move to the next**
- **Repeat all steps at each symbol**

Complete Activity - 50 minutes

Wrap up 45 minutes

- **Instructors will ask who would like to share their program with the group.**
- **Have campers share their screen when they are sharing.**
- **Remind all the campers about being positive when someone is sharing their work.**
- **After certain campers have shared their program, the instructor will go over the instructions for the home challenge.**

Home Challenge Activity Directions

Day Two- Kickball Game- Home Challenge

Campers will spend a day at the mound with Dash. You will use the simulator to create a program that will incorporate the Start, Drive, Lights, Sound, Animations, and Model Repeat Tabs. What better way to spend the day, than watching Dash at the Camp Kickball World Series. Campers will create a program in Blockly that includes the following:



- Dash will start at the circle. He wants to get the crowd excited for the game that is about to start. Start your program by creating that excitement. How will Dash show that to the crowd?
- Next Dash is focused on the kickball that will be heading his way. He paces back and forth to release his tension.
- Dash looks straight ahead, then to the left and right to see if he is ready to kick.
- Finally dash backs up and with all of this speed runs up to kick the ball.
- It is a great far kick. Dash starts to run the bases.
- On his way to 1st base it is about 210 cm from home plate.
- He turns to look at 2nd base and feels he can continue to run. He needs to change his speed to make sure he will be able to get to 2nd base quickly. Also he makes sounds of an engine as he is starting to run.
- He runs and on his way he says, "Bye".
- He arrives at 2nd base and looks right and left.
- He takes off again, heading to 3rd base. His lights change to Green, because he is ready to GO!
- He runs 210 cm to 3rd base and when he arrives at 3rd he does a "silly dance".
- He decides he will run backwards 210cm to home plate so he can watch the outfielders carefully.
- As he takes off for home plate, you can hear the sound of a, "car tire squeal".
- Dash takes off for home plate and when Dash gets there you hear a "laugh".
- Dash then looks at the crowd and says, "This is only the beginning!"

Make sure that when you have completed this challenge you save your work as **Kickball World Series**. Tomorrow you will have the opportunity to share your program with the group. Remember if something is not looking right with your

program, review the directions and problem solve while looking within your program. You may need to change a block or two in order for Dash to move the way you want him to. Good Luck!

Additional Home Activities:

Day Three- Under the Sea Day

ALL Tabs in Blockly

Class Connect should already be completed with campers for this session.

Teacher Code for this session: _____

Campers log into: [Code.makewonder.com](https://code.makewonder.com)

Instructors should review the calendar for the day to ensure they are dressed to match the theme of the day.

Welcome Campers: 15 minutes

- Instructor Introduction- How did you all make out with your “Campified Home Challenges Last Night?
- Campers Respond to questions.
- If time permits have a camper share their finished project.
- Under the Sea Day! Compliment their participation.

Log On Help:

- Ask if any camper had difficulty logging in to Zoom.
- Review logging in to the simulator. Address any issues.

Introduce challenge - 30 Minutes

- Review:
 - What application have we been using to program Dash?
 - What commands have we used so far?
 - What shapes have we made Dash drive in?
- Today your group will be challenged to write a program using twenty different commands in any order
- Demonstrate:
 - Open “Blockly” application
 - Review what is in the “Drive” section of the application - drive forwards, drive backwards, turn left, turn right
 - How can we make Dash look up, down, left, or right? - the “Look” section of the application

- How can we make Dash’s lights on his ears and chest change colors? - the “light section of the application
- How do we make Dash speak or make a noise? - the “Sound” section of the application
 - Demonstrate how to record your own sound for Dash to repeat
- How do we use a loop block? - the “Control” section of the application
- How do we use wait, if, and if/else blocks? - all commands in the “Control” tab

Activity - 75 Minutes

- Have Campers code a program that will make Dash do these twenty different commands
- These twenty commands are the minimum you should have
- Each tab in Blockly should be represented AT LEAST twice during the program

Wrap up activity - 45 minutes

Instructor to review appropriate behavior when campers are sharing.

- When we are sharing, we are only using positive words.
- Instructor gives an example: “John, I really liked how you were able to use all the color lights in your program.”
- We should feel good after someone comments on our work.
- Ask who would like to share their program with the group? (instructor selects who will share first)
- When all campers are done, have each group present their program to the class
 - Introduce themselves
 - Explain what Dash will be doing during the execution of the program that they wrote
 - Show the class how Dash executes their program

- If there is time remaining, campers can continue with the puzzles from yesterday. Click the 3 orange lines in the upper left hand corner and select puzzles. Remind campers that you can monitor their progress while they are completing the puzzles.

LUNCH

Welcome campers back to the session - 5 minutes

- Discuss what campers did before lunch
- Chat about what campers have been up to during the hour away from the screen

Introduce Where is Dot? Project - 15 minutes

- Dash woke up from a nap on the lounge chair by the pool and can't find Dot! Dot was lounging in the chair next to Dash just a few minutes ago! Dash fell asleep for only 20 minutes and now Dot is nowhere by the pool. Write a program which helps Dash find Dot. Solve the mystery!

Where is Dot? Project - 55 minutes

- Dash woke up from a nap in a daze. Have Dash make a dizzy sound.
- Dash realizes that Dot is not in the lounge chair by the pool anymore. Dash is looking for Dot around the pool - have Dash drive in a rectangle that is 100cm X 50cm.
- Dot was not near the pool. Have Dash drive to the Purple Dome marked with a Blue "X" on top to check inside.
- Dot was not in the Purple Dome. Have Dash drive to the Mustache House to take a look there.
- Dot was not at the Mustache House. Have Dash Drive to the police Station to see if any police officers have seen Dot.
- The police officers told Dash to check the Green Gnome House. Have Dash drive to the Green Gnome House.
- Dot was not there but the Gnome told Dash to check the Cow House. Have Dash drive to the Cow House.
- Dot was not there either. Dash is getting worried. Have Dash sigh.
- Have Dash drive to "talk" to the goat. Once Dash gets to the Goat, have Dash ask the Goat, "Have you seen Dot?"

- The Goat tells Dash that Dot got too hot by the pool and wanted to make a snowman.
- Can you figure out where Dot is? If so, drive to the final location of where you think Dot can be.

Make sure that when you have completed this challenge you save your work as Dot Mystery.

Wrap up - 45 minutes

Instructor to review appropriate behavior when campers are sharing.

- When we are sharing, we are only using positive words.
- Instructor gives an example: “John, I really liked how you were able to use all the color lights in your program.”
- We should feel good after someone comments on our work.
- Ask who would like to share their program with the group? (instructor selects who will share first)
- If there is time remaining, campers can continue with the puzzles from yesterday. Click the 3 orange lines in the upper left hand corner and select puzzles. Remind campers that you can monitor their progress while they are completing the puzzles.

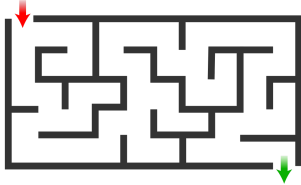
Home Challenge Activity Directions

Day Three- Wacky Maze Races- Home Challenge

Dash will participate in Camp Wacky Races. Campers will use the simulator to create a program that will incorporate the Control Tab, Drive Tab, Light and Sound Tab. Dash needs to get some rest for the wacky races he is about to participate in. Campers will create a program in Blockly that includes the following:

- First you need to draw your maze on paper. The more turns the more difficult it will be. Make sure you have a starting line and a finish line.
- Once your maze is drawn on your paper you are ready to design your program.

- Using the Start block, Drive tab, Control tab, Light tab, and sound tab, create a program that gets Dash to the finish line using the least amount of blocks.
- Think about the Control Tab and how you can use that to move further distances.
- Add some light color changes and sounds. Show how Dash is having a great time navigating through the maze.
- Make sure that Your program matches your maze.



Make sure that when you have completed this challenge you save your work as **Wacky Race**. Tomorrow you will have the opportunity to share your program with the group. Remember if something is not looking right with your program, review the directions and problem solve while looking within your program. You may need to change a block or two in order for Dash to move the way you want him to. Good Luck!

Additional Home Activities:

- **Wacky Maze races**
- **Challenge Cards**
 - 6.3, 6.4

Day Four - Tie Dye Day

Variables Tab

Class Connect should already be completed with campers for this session.

Teacher Code for this session: _____

Campers log into: [Code.makewonder.com](https://code.makewonder.com)

Instructors should review the calendar for the day to ensure they are dressed to match the theme of the day.

Welcome Campers: 15 minutes

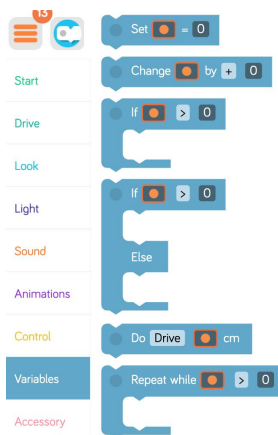
- Instructor Introduction- How did you all make out with your “Campified Home Challenges Last Night?”
- Campers Respond to questions.
- If time permits have a camper share their finished project.
- Under the Sea Day! Compliment their participation.

Log On Help:

- Ask if any camper had difficulty logging in to Zoom.
- Review logging in to the simulator. Address any issues.

Review Variables Tab - 30 minutes

- Share all of the command blocks in this folder:



- Model how to open each command block and change parameters.
- Set ___ = # block. This command is to set the certain fruits to certain numbers. You will call back to this block in order to use other blocks in

the Variables Folder. You must tell the program the values of the fruits before calling to those fruits in the later blocks.

- You can set the fruit's value in many different ways.



- On the left you choose the fruit you want to use. If you want to set it to a number, use the top grid of 1,2,3,4 and choose a number to set it to. If you want to set the fruit to another fruit's value, choose the option below. If you want the fruit to get a random value, choose the dice option, and if you want the fruit to have a function where Dash needs to have an input, choose the Dash icon.
- With the Change variables block, you can multiply the value of the fruit, add, subtract, or divide.
- The If and the Repeat blocks in the Variables tab work the same as the If and the Repeat blocks in the Controls tab, however, this time they depend on the variables, not on the inputs on Dash.
- The Do block in the Variables tab lets you make Dash do a certain task when that fruit is set to a certain value.
- This is the most complex tab in the program. It takes creative thinking and problem solving in order to master this tab.
- Q & A time.

Introduce Roll the Dice activity - 15 minutes

- Dash wants to play a board game. Make up a game where Dash is the piece that moves around the board. The board is the simulator Dash's Neighborhood.
- Use Variables to roll the dice to set how far Dash moves each turn.
- Set each fruit in the variables tab as a different number - this can be done by rolling the dice!
 - This game should use two dice that are six-sided. That would make the lowest number that a fruit could represent 2 and the highest is 12.
- Each fruit should then change numbers throughout the course of the game. You can do this within the variables tab as well.
- Have dash move the amount of cm that is represented by the roll of the dice multiplied by ten.

- You should be able to:
 - Explain the rules of the game to the class.
 - Explain how to “win” the game or explain how the game ends.
 - Set parameters of what the “board” is within Dash’s neighborhood.
- Examples:
- The dotted rectangle
 - The whole board
 - Only the orange squares
- Showcase the program where Dash moves after the dice are rolled.
 - Have Dash react to certain rolls
 - Celebrate when a 12 is rolled
 - Sigh when a 2 is rolled
 - If Dash gets “stuck” with an obstacle in front, have Dash backup 50cm and turn 180 degrees.
 - Use at least one wait block.
 - Use at least one repeat block.
 - Use at least one if block.

Complete Roll the Dice Activity - 60 minutes

- Check in on campers as they continue working
- Answer any questions that come up from campers

Wrap up activity - 60 minutes

Instructor to review appropriate behavior when campers are sharing.

- When we are sharing, we are only using positive words.
- Instructor gives an example: “John, I really liked how you were able to use all the color lights in your program.”
- We should feel good after someone comments on our work.
- Ask who would like to share their program with the group? (instructor selects who will share first)
- If there is time remaining, campers can continue with the puzzles from yesterday. Click the 3 orange lines in the upper left hand corner and select puzzles. Remind campers that you can monitor their progress while they are completing the puzzles.

LUNCH

Welcome campers back to the session - 5 minutes

- **Discuss what campers did before lunch**
- **Chat about what campers have been up to during the hour away from the screen**

Introduce Tour of Camp Project - 15 minutes

What is a camp? What would be present at a camp? A pool? A gym? A jungle gym? What is in Dash's camp? Make believe Dash's Neighborhood is a new camp that Dash is going to attend this summer. You are the tour guide showing Dash around Dash's neighborhood for the first time.

- Drive Dash to ALL of the different buildings in Dash's neighborhood.
- Create a story for what each building is.
- Have Dash wait at each building using the wait until block until you tell your story using the vice recorder block.
- Your descriptions should include an explanation of what each building is and what Dash can do inside each building.
- What activities will Dash be able to do while at camp?
- Have Dash react to each story using the animations tab.
- When your program is over have Dash say, "Bye."

Make sure that when you have completed this challenge you save your work as **Tour of Camp.**

Complete Tour of Camp Activity - 55 minutes

- **Check in on campers as they continue working**
- **Answer any questions that come up from campers**

Wrap up - 45 minutes

Instructor to review appropriate behavior when campers are sharing.

- **When we are sharing, we are only using positive words.**
- **Instructor gives an example: "John, I really liked how you were able to use all the color lights in your program."**
- **We should feel good after someone comments on our work.**
- **Ask who would like to share their program with the group? (instructor selects who will share first)**

- If there is time remaining, campers can continue with the puzzles from yesterday. Click the 3 orange lines in the upper left hand corner and select puzzles. Remind campers that you can monitor their progress while they are completing the puzzles.

Home Challenge Activity Directions

Day Four- Be Creative it's Play Time- Home Challenge

Dash was nominated to be part of a play that the camp is putting on. It will be in front of the entire camp. Dash will need to remember his lines and do a big dance finale at the end. Get ready to shine. Campers will use the simulator to create a program that will incorporate the Control Tab, Drive Tab, Light and Sound Tab along with animations, functions and variables. Dash is nervous but with practice it will be the performance of a lifetime. Campers will create a program in Blockly that includes the following:

- Dash is practicing for the camp play. He has the lead role. The play is called A Robot at Camp. Be creative.
- First draw a large square on paper and draw where specific activities take place at camp.
- The play is about Dash making his way around camp being involved in the activities. Example: swimming, soccer, arts and crafts, tennis, baking and cooking, baseball, etc.....
- Choose 4 activities that you drew and create a program where Dash is experiencing each of these activities.
- Make sure you are using the control tab, drive tab, light and sound tab. In addition, to add fun include blocks from the animation tab.
- Your program should showcase Dash performing what a day at camp would look and feel like.



Make sure that when you have completed this challenge you save your work as **Dash's Play**. Tomorrow you will have the opportunity to share your program with the group. Remember if something is not looking right with your program, review the directions and problem solve while looking within your program. You may need to change a block or two in order for Dash to move the way you want him to. Good Luck!

Additional Home Activities:

- **Camp Play**
- **Any two challenge cards**

Day Five- Challenge Day Friday- Favorite Cartoon Character

Welcome Campers: 15 minutes

- Instructors should be wearing wild west gear to go along with the theme of the day.
- Wild Wild West Day! Compliment their participation.
- Ask, “How did everyone do with the home challenge last night?”
- Did anyone run into any struggles as you were completing the bowling activity?
- Instructors will address as needed.

Log On Help: 15 minutes

- Review the basics of logging in and address any issues the campers may have had.
- Ask if any camper had difficulty logging in to Zoom.
- Address any issues with logging in to the virtual simulator.
- Review how to toggle back and forth from Zoom to Simulator.
- Review how campers will share their screen. Make sure that you have allowed all participants to share their screens.

Introduce Friday Challenge #1-15 minutes

- Challenge campers to complete ALL puzzles that they have not completed yet
- Show the campers that there are 84 puzzles to be completed and that they should take the morning to go in and show that they have mastered all of the skills Blockly has to offer after two weeks of camp

Individual practice: Complete ALL puzzles - 45 minutes

Camper option: Continue with puzzles OR move to challenge #2 - 45 minutes

- Celebrate campers that have finished ALL 84 puzzles
- If campers have not finished yet, they can choose to continue working on puzzles until lunch

- **If campers have finished - move on to next challenge**
 - **Extended Activity - Work with pre-set programs under “create new project” tab in blockly. Choose three of the pre-set programs and combine them into one big program by remembering what each one did individually.**

Wrap up activity - 45 minutes

Instructor to review appropriate behavior when campers are sharing.

- **When we are sharing, we are only using positive words.**
- **Instructor gives an example: “John, I really liked how you were able to use all the color lights in your program.”**
- **We should feel good after someone comments on our work.**
- **Ask who would like to share their program with the group? (instructor selects who will share first)**

LUNCH

Welcome campers back to the session - 5 minutes

- **Discuss what campers did before lunch**
- **Chat about what campers have been up to during the hour away from the screen**

Introduce MEGA CODE activity - 15 minutes

After two weeks of learning all about Dash and Dash’s Neighborhood, this is your time to get creative! I would like you to make a final, mega project! I want you to remember everything you learned throughout your time in virtual camp over the last two weeks and pull from all of those experiences to make one final, mega, amazing program. This program should include multiple blocks from ALL tabs. Not only should you use those blocks, but there should also be a goal for your program to complete. As programmers, we are problem solvers. What problem are you trying to solve? What problem can Dash solve in Dash’s neighborhood? Remember, this will be the last time you present to the class. Make sure you show off all the skills you learned throughout these last two weeks.

Your program **MUST** include at least:

- **3 blocks from the DRIVE tab**
- **2 blocks from the LOOK tab**
- **2 blocks from the LIGHT tab**
- **3 blocks from the SOUND tab**

- 2 blocks from the ANIMATIONS tab
- 6 blocks from the CONTROLS tab
 - 1 repeat
 - 1 wait
 - 1 if
- 5 blocks from the VARIABLES tab

Make sure that when you have completed this challenge you save your work as **MEGA CODE.**

Complete MEGA CODE activity - 55 minutes

Wrap up - 45 minutes

Instructor to review appropriate behavior when campers are sharing.

- **When we are sharing, we are only using positive words.**
- **Instructor gives an example: “John, I really liked how you were able to use all the color lights in your program.”**
- **We should feel good after someone comments on our work.**
- **Ask who would like to share their program with the group? (instructor selects who will share first)**

Home Challenge Activity Directions

Day Five-Color War- Home Challenge

Dash has come to the end of the camp week and will be competing in the Camp Color War. This year’s theme is The Ninja Course. Campers will use the simulator to create a program that will incorporate all the tabs in Blockly. Campers will create a program in Blockly that includes the following:



- Use this image or you can be creative and design your own.
- In order for Dash's team to win Camp Color War needs to make it through the course in first place.
- While Dash is competing through the course the crowd hears Dash making a lot of noises and sees Dash stop to do silly dances along the way.
- In addition the color of his lights change at least 3 times.
- The crowd also sees Dash speed up as he makes his way to the Finish Line.
- Once Dash crosses the Finish Line Dash turns to the crowd and says, "This was the best camp activity I have done all summer!"

Make sure that when you have completed this challenge you save your work as **Ninja**. Remember if something is not looking right with your program, review the directions and problem solve while looking within your program. You may need to change a block or two in order for Dash to move the way you want him to. Good Luck!

Additional Home Activities:

- Choose ANY four Challenge Cards