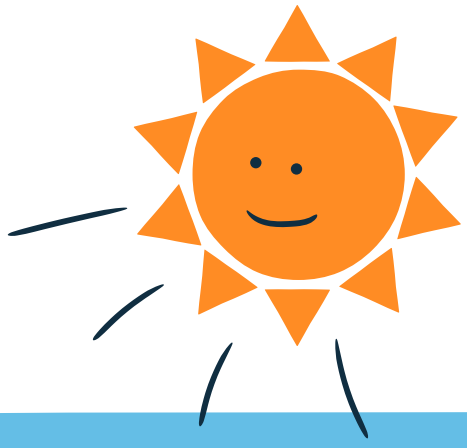
At-Home Summer Guide for School-Age
(Kindergarten-6th Grade)

Week of August 3, 2020



Welcome to the second week of the KinderCare learning guides for **Computer-Free Coding!**

This week's activities continue to focus on learning basic computer-free coding skills to help you learn and understand the technology around you. These activities **improve problem-solving, creativity,** and **communication skills** through learning foundational forms of computer language.

In these activities you'll learn about **commands** and **events** and have opportunities to practice planning and exploring **if/then statements** to solve puzzles, create art, and develop your own games.

To make the most of the activities in this week's guide, we recommend you do activities in order so your child can build upon their learning throughout the week.

Families with Kindergarteners:

Our summer school-age guide incorporates **first grade readiness activities** to keep your kindergartener's mind sharp through the summer!

KinderCare® LEARNING CENTERS

This Week's Theme:

Commands and Events

COMPUTER-FREE CODING

Exploring Pixels
Get creative and use your drawing skills to create pictures using pixels.

Robot Programs
Practice writing coding commands to tell your Robot where you want it to go.

Solve the Maze
Take your code-commanding skills to the next level for you and your robot.

If/Then Art
Use randomizing techniques and if/then conditions to create beautiful works of art.

If/Then Movement Games
Continue exploring if/then events to create a movement-based game or dance party.

PREVENTING LEARNING LOSS

Improve This!
Use your creativity to redesign, improve, or repurpose an old game or toy!

Comic-Book Writing
Try your hand at creating comic-book characters to share your perspective on the world around you.

FIRST GRADE READINESS

Phonics Activity: Word Search
Use items you have at home to create a short reading challenge to grow your child's word-recognition skills!

Math Activity: Making Change
In this activity, you'll use coins to teach your child that there's more than one way to solve math problems.

Getting Ready for the Week: Materials to Gather

For Computer-Free Coding Activities: :

- ☐ Exploring Pixel Size sheet
- ☐ Grid paper or Cartoon Character Pixel sheet
- ☐ Robot Programs sheet
- ☐ Robot Programs Answer Key
- ☐ Robot Maze sheet
- ☐ Robot Maze Answer Key
- ☐ 1 six-sided dice
- ☐ Paper
- ☐ Writing and drawing tools

For Preventing Learning Loss Activities:

- ☐ Toy or game that's no longer in use
- ☐ Comic Book Panels sheet
- ☐ Writing and drawing tools

For First Grade Readiness:

- ☐ Paper
- ☐ Writing tool
- ☐ 2 dimes, 5 nickels, and 10 pennies, OR Coins sheet and scissors

Tip: At the beginning of your week, gather materials and place them in a container so you're ready to go!

Computer-Free Coding: Exploring Pixels

Get creative and use your drawing skills to create pictures using pixels.

Length of activity:
25 minutes

Level of Engagement Required by Adult: Low

Level of Prep Required: Low

What you need:

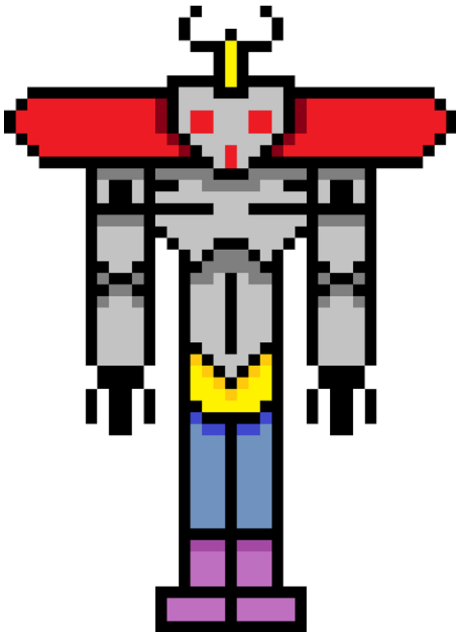
- Exploring Pixel Size sheet
- Grid paper or Cartoon Character Pixel sheet
- Writing and drawing tools

What you will do:

Pixels are colored squares that make up every image you see on an electronic screen like a TV or computer monitor. The screen combines the squares, each one being a single color, to create a picture piece by piece. The size and number of pixels controls how detailed the image is. In this activity you'll create pictures using pixels and examine the impact on an image's detail when using more or fewer pixels in an area.

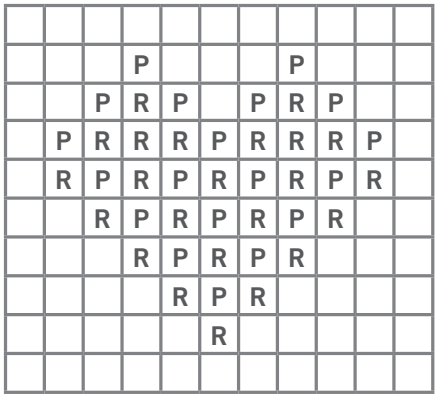
Start by using only two colors to draw a picture on the Exploring Pixel Size sheet. Each square, or pixel, should be colored in using only one color. You may use the heart example, or create your own shape—just make your picture simple, such as a circle, a square, a tree, etc. Redo the same shape in each grid to compare the differences between the images. After exploring the impact of pixels on detail, use grid paper or the Cartoon Character Pixel sheet to draw your favorite cartoon character using pixels.

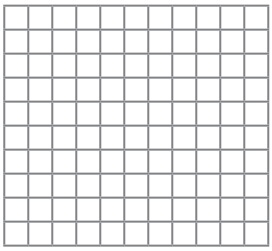
Fun Fact: In old video games there were 8-bit characters that used fewer pixels due to the quality of screens at the time. Because of the low amount of pixels, these characters looked blocky with hard edges instead of having curves and detail.

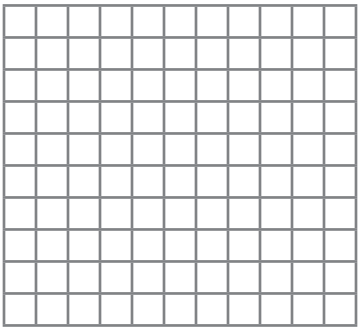


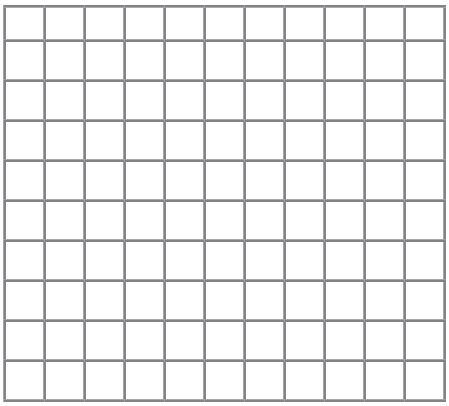
Exploring Pixel Size

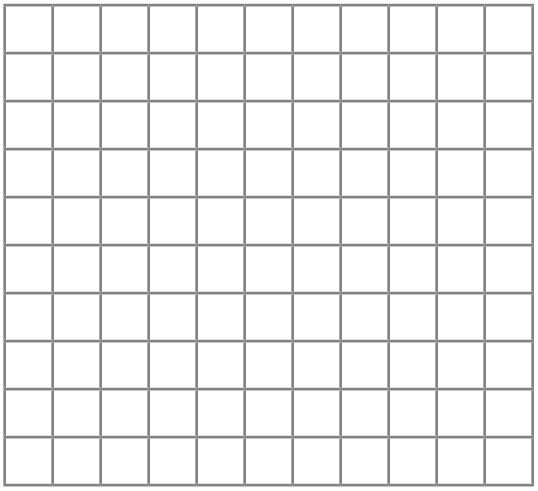
Copy the heart image below onto each of the charts by coloring the squares using the following code: P=pink, R=red.

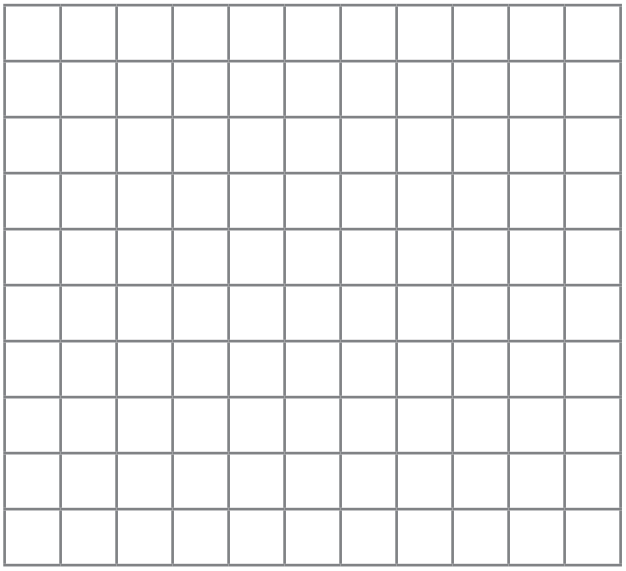


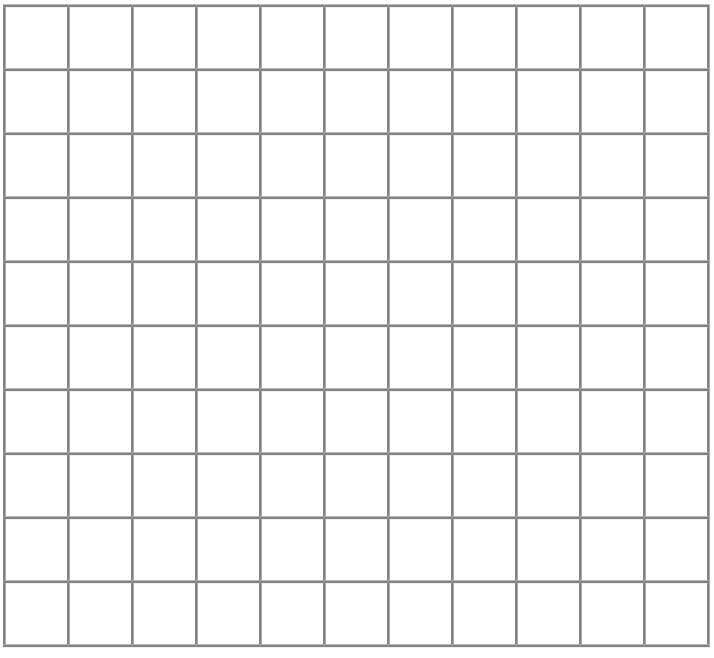




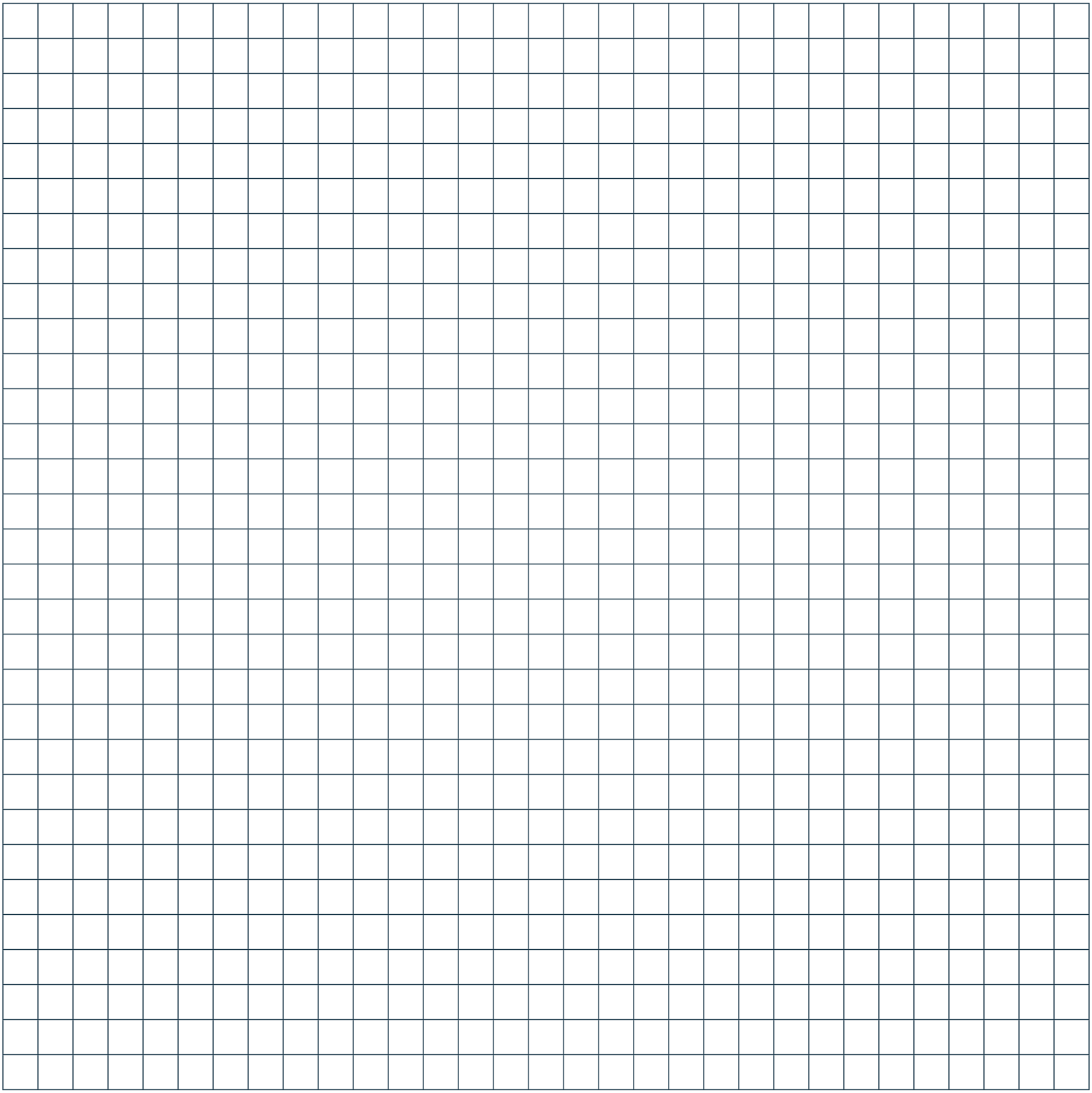








Cartoon Character Pixel sheet



Computer-Free Coding: Robot Programs

Practice writing coding commands to tell your Robot where you want it to go.

Length of activity:
25 minutes

Level of Engagement Required by Adult: Low

Level of Prep Required: Low

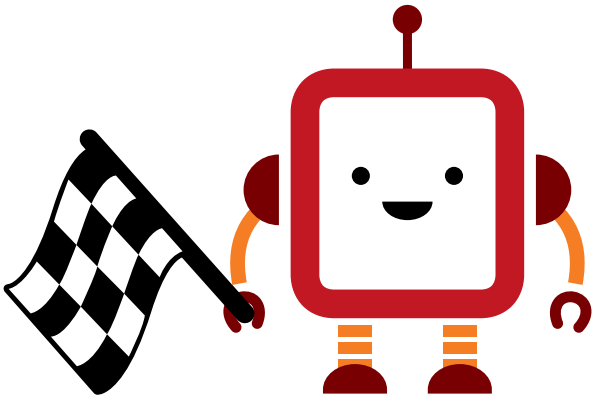
What you need:

- Robot Programs sheet
- Robot Programs Answer Key
- Writing and drawing tools

What you will do:

Coding can be done in many languages depending on how it is being used. HTML, code websites, and code video games all have one thing in common: They accomplish tasks through *commands*. A *command* happens when a code instructs a program to perform a function. Programmers use one-letter abbreviations to write directions without using complete words, which saves time and creates shorter codes. For example, if programmers want a robot to move forward, they might use the letter *F* to represent forward, and the letters *R* or *L* to represent right or left.

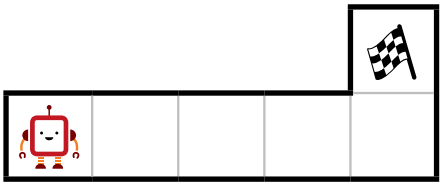
Review the Robot Programs sheet and read the instructions. Each box represents one move the robot can make. Write the first program thinking about which direction the robot should move to get from one square to the next. The answer to the first program is F-F-F, because the robot needs to move forward three times to reach the end of the path. Next, write the programs for the remaining robots. When you're finished, check your work by using the answer key.

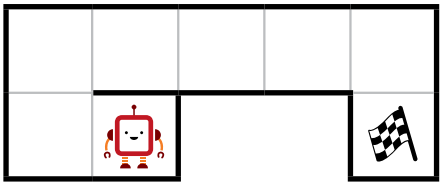


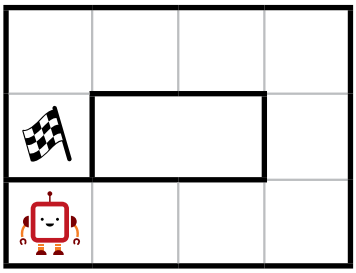
Robot Programs

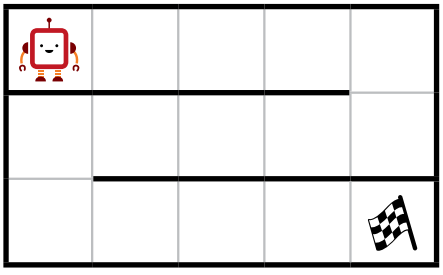
Write a program for each robot to help it get from the start to the end of each path. Write the program for each robot using this code and writing one letter in each box:

F = forward one square L = turn left R = turn right



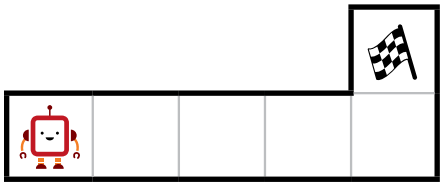






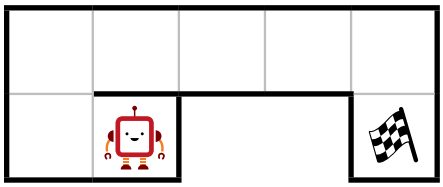
Robot Programs Answer Key

F F F



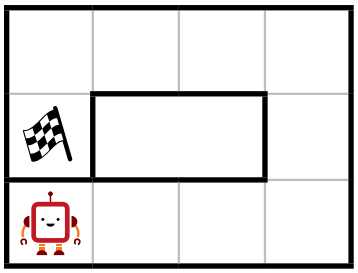
F F F F L F

F R F L F F F



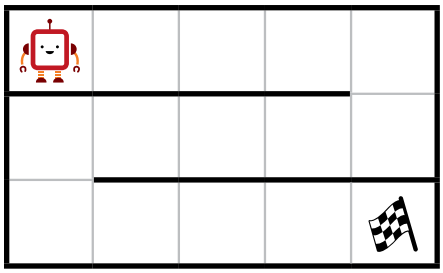
F R F R F

F F F R F



F F F L F F

L F F F L F



F F F F R F R

F F F F L F L

F F F F

Computer-Free Coding: Solve the Maze

Take your code commanding skills to the next level for you and your robot.

Length of activity:
20 minutes

Level of Engagement Required by Adult: Low

Level of Prep Required: Low

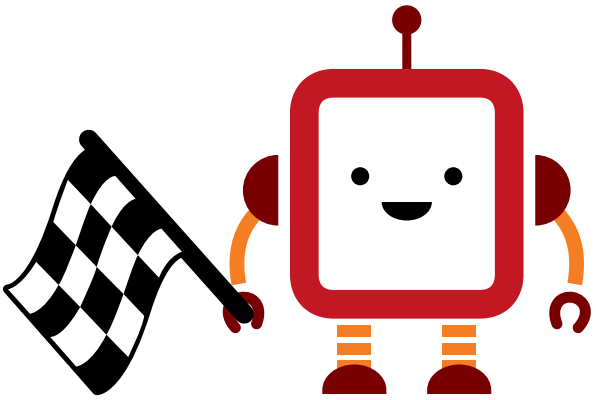
What you need:

- Robot Maze sheet
- Robot Maze Answer Key
- Writing and drawing tools

What you will do:

In this activity you'll practice writing coding commands for your robot to help it navigate a maze. Use the one-letter abbreviations you learned in the activity Robot Programs to command your robot to follow the correct path through the maze.

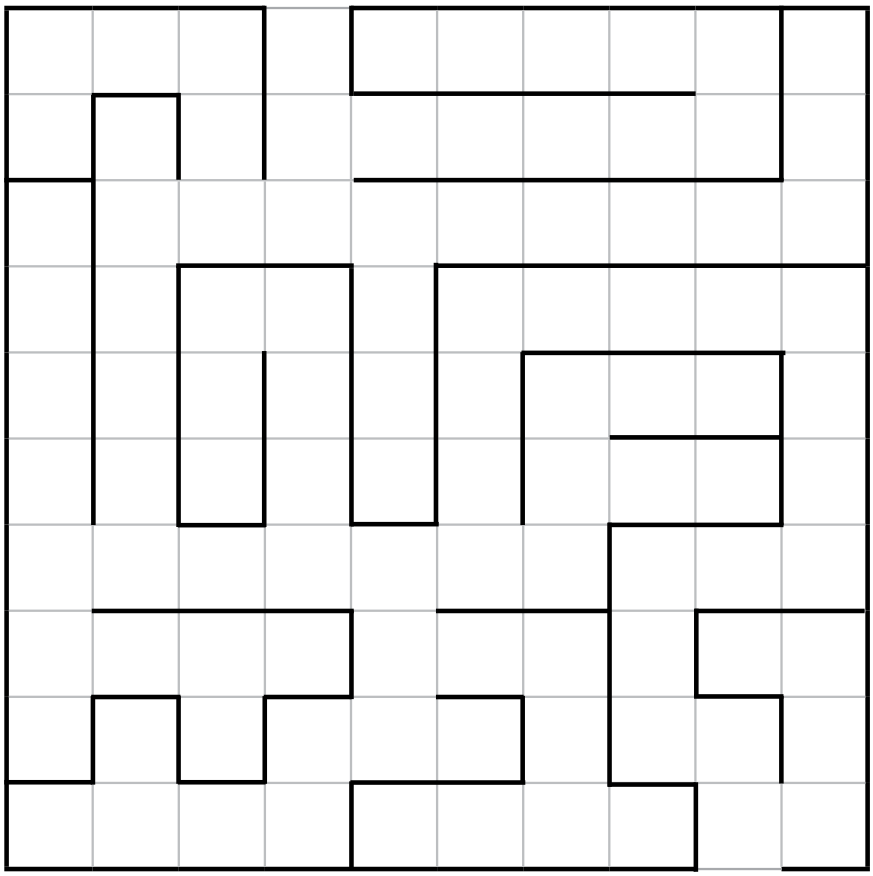
First, solve the Robot Maze to determine the correct path for your robot. Next, write a program for the robot to move through the maze using the letters *F*, *R*, and *L*, to represent Forward, Left, and Right. Remember: Each box represents one move the robot must make to get to the end of the maze. After writing your program, review the correct program from the Robot Maze Answer Key. Remember that programmers use abbreviations, so programs can be shortened and precise.



Robot Maze

Help the robot find its way through the maze.

START

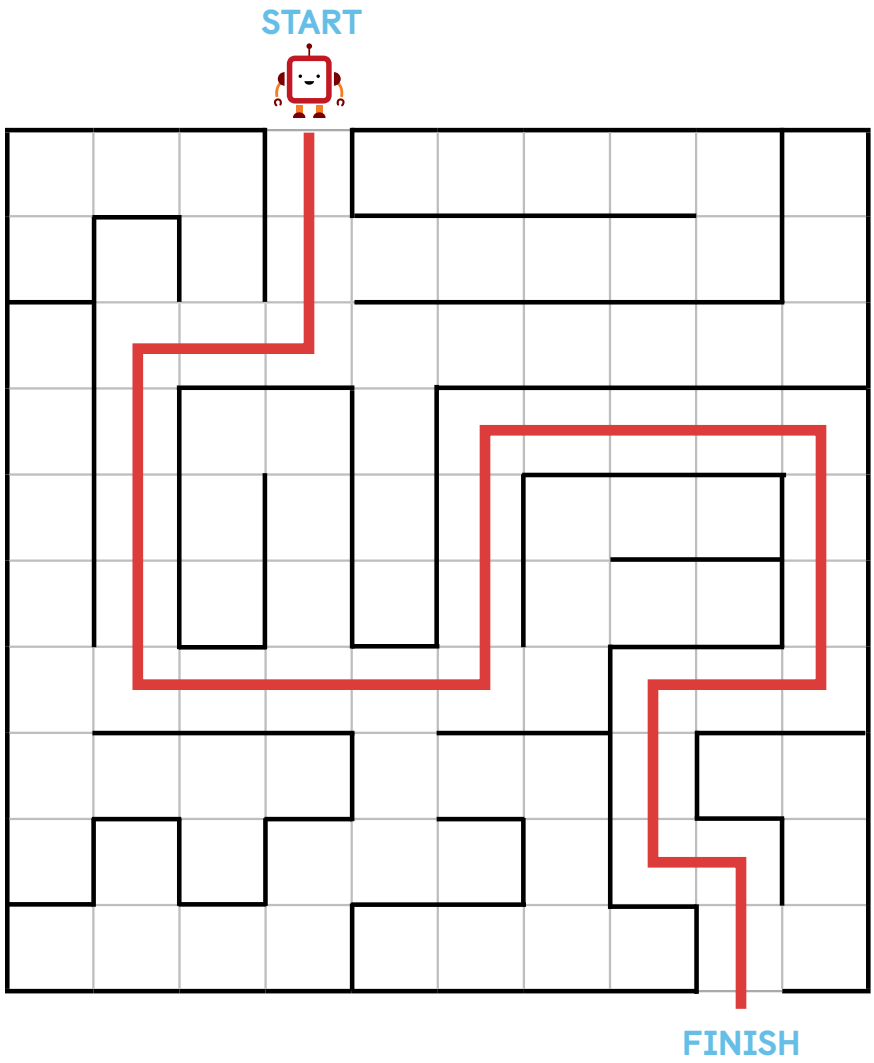


FINISH

When you've found the path through the maze, write a program for the robot using this code and writing one letter in each box:

F = forward one square L = turn left R = turn right

Robot Maze Answer Key



F	F	F	R	F	F	L	F	F	F	F	L	F
F	F	F	L	F	F	F	R	F	F	F	F	R
F	F	F	R	F	F	L	F	F	L	F	R	F

Computer-Free Coding: If/Then Art

Use randomizing techniques and if/then conditions to create beautiful works of art.

Length of activity:
25 minutes

Level of Engagement Required by Adult: Low

Level of Prep Required: Low

What you need:

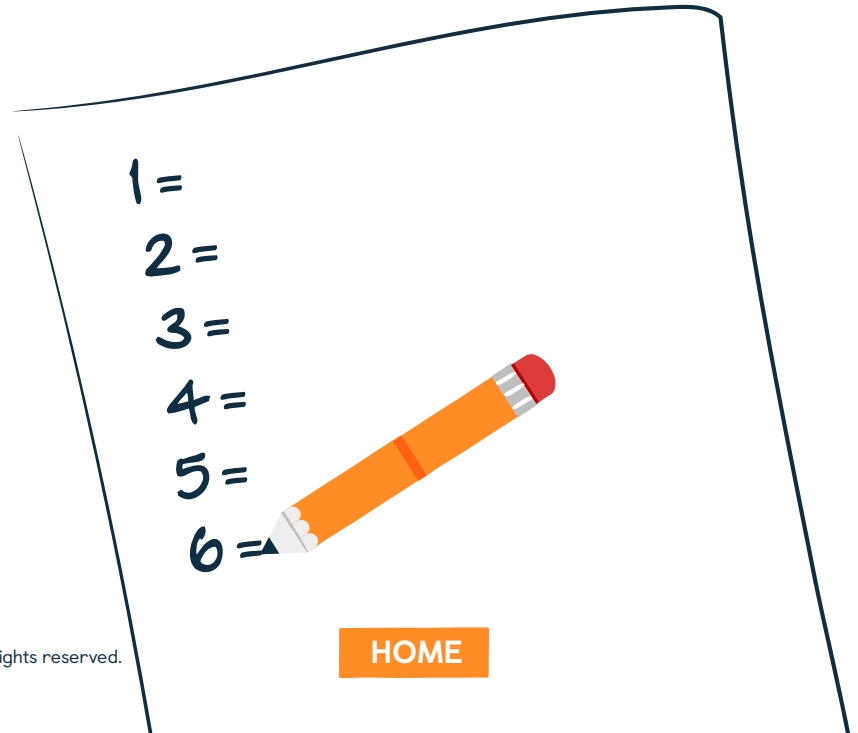
- 1 six-sided dice
- Paper
- Writing and drawing tools

What you will do:

If/then statements are a foundation of all coding. With these commands, programs or robots take actions based on what occurs. Programmers often use if/then statements to program actions in games. For example, an if/then statement written for a game might be, "If the J key is pushed, then the character will jump." What games have you played on a computer or console that use single keys to create actions?

In this activity you'll use if/then conditions to create art. First, write the numbers 1 through 6 down the left side of your piece of paper. Then, assign if/then drawing tasks to each number. For example, if you roll a one, draw a square, or if you roll a two, draw something yellow. You can be as vague or as specific as you would like.

Next, roll one dice ten times, and for each roll, draw the item that corresponds with the number on your paper. You can draw the items wherever you would like on your paper, overlapping or using various colors in any way that doesn't contradict your if/then assignments.



Computer Free Coding: If/Then Movement Games

Continue exploring if/then events to create a movement-based game or dance party.

Length of activity:
25 minutes

Level of Engagement Required by Adult: Low

Level of Prep Required: Low

What you need:

- 1 six-sided dice
- Paper
- Writing and drawing tools

What you will do:

Try to create movement games using if/then statements. Take a sheet of paper and a writing or drawing tool to create a movement game using dice and if/then statements. Write the numbers 1-6 on a piece of paper and assign a type of movement (or *statement*) to each number. For example, if you roll a 1, write clap your hands, and if you roll a 2, write stomp your foot. Different numbers can have the same movement. For example, you could write the same if/then statement for each number, or one if/then statement for all of the odd numbers and a different statement for all of the even numbers. You could even write one if/then statement for the numbers one through three and a different statement for the numbers four through six.

After you've finished creating your game, practice playing the game with your family. Try rolling the dice and seeing if everyone can do the movements correctly.

Social and Emotional Learning

You can also use this activity to create a random if/then dance to perform to a favorite song by thinking of 6 different moves. Think of a song that sends a positive message or a beat that makes you feel good, then invite your friends and family to roll a dice and let the dance party begin. Create your own music video to share with friends and family and challenge them to try out your new unique dance.

Preventing Learning Loss: Improve This!

Use your creativity to redesign, improve, or repurpose an old game or toy!

Length of activity:
30 minutes

Level of Engagement Required by Adult: Low

Level of Prep Required: Low

What you need:

- Toy or game that's no longer in use

What you will do:

- Take an old toy or game you previously enjoyed but haven't played with recently, and create a list of what you liked about it. Try to make a list of why you think you don't use it as much now.
- Brainstorm ways you can adjust the toy or the rules of the game to make it different. Find new ways to have fun using it. How can you adjust or redesign the toy or game to bring the fun back to it?
- After you finish redesigning, invite your family or a friend to try out your new invention.

Preventing Learning Loss: Comic-Book Writing

Try your hand at creating comic-book characters to share your perspective on the world around you.

Length of activity:
30 minutes

Level of Engagement Required by Adult: Low

Level of Prep Required: Low

What you need:

- Comic Book Panels sheet
- Writing and drawing tools

What you will do:

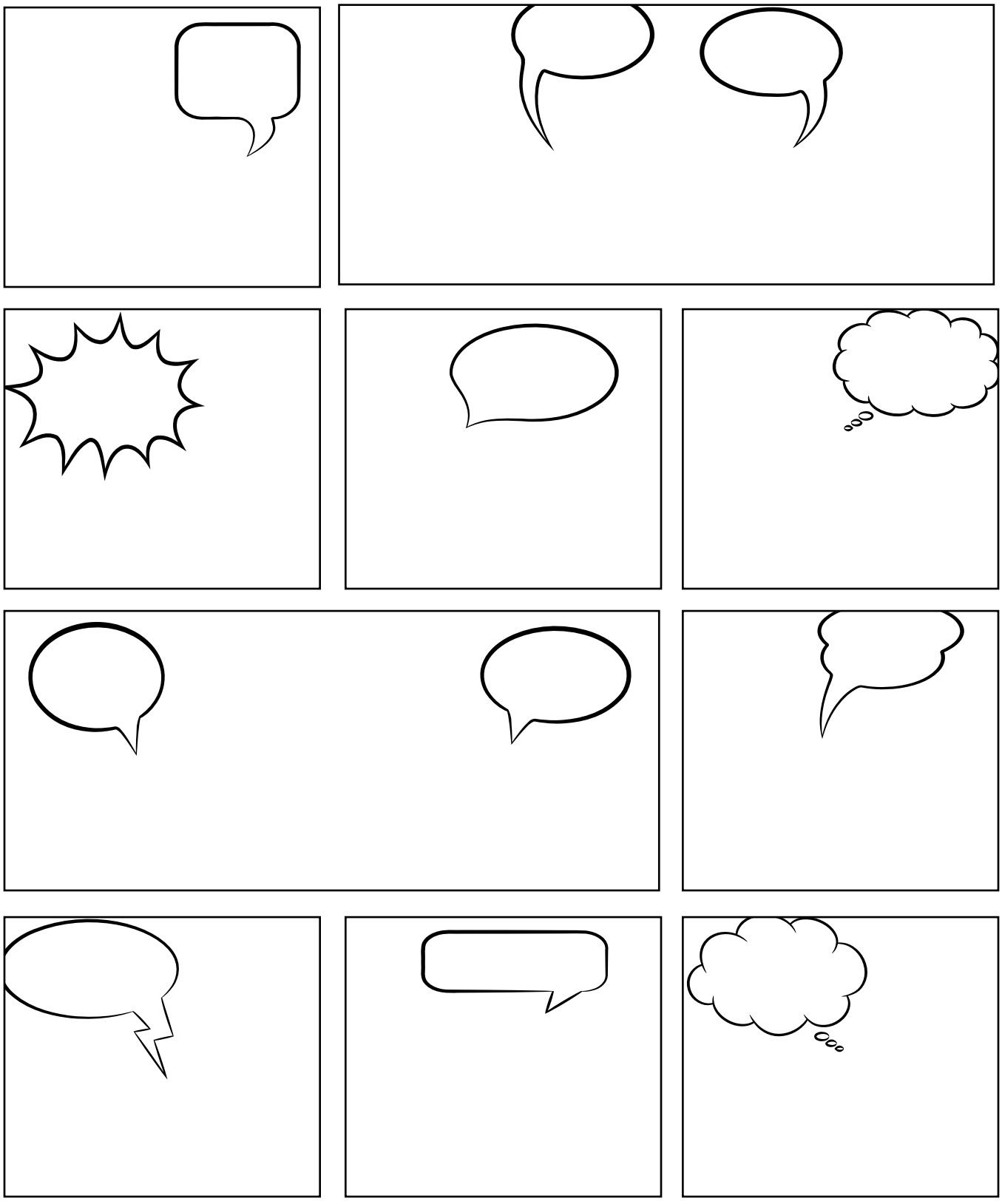
- Comic books are a method of writing that give voice to a writer's feelings and perception of the world around them in a unique way. From heroes designed to tackle fears or frustrations, to real-world stories that act as a journal of events, comics can be used to voice your feelings and experiences through pictures. Let's put your writing skills to the test as you write your very own comic book using the Comic Book Panels sheet.
- You can create a hero that defeats a challenge you think should be stopped, or make it more realistic by creating a series of comics around some of your favorite days, trips, stories, or experiences.
- Remember, comics mostly tell stories through images, keeping written words to one or two statements per square while showing what is happening or how characters are feeling based on how you draw the comic.
- Before you begin drawing your comics, think of a beginning, middle, and end of your story to ensure you have enough space to show everything that needs to happen in the illustrations while using limited words.
- Feel free to use a blank sheet of paper to create your own panels with speech and thought bubbles. And don't forget to add *impact text* where necessary!

impact text

speech bubble

thought bubble

Comic Book Panels



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First Grade Readiness

Our summer school age guide incorporates **first grade readiness activities** to keep your kindergartener's mind sharp through the summer.

Phonics Activity: Word Search

Use items you have at home to create a reading challenge to grow your child's word recognition skills!

Length of activity:
5–10 minutes

Level of Engagement Required by Adult: Low

Level of Prep Required: N/A

What you need:

- Paper
- Pencil

What your child is learning:

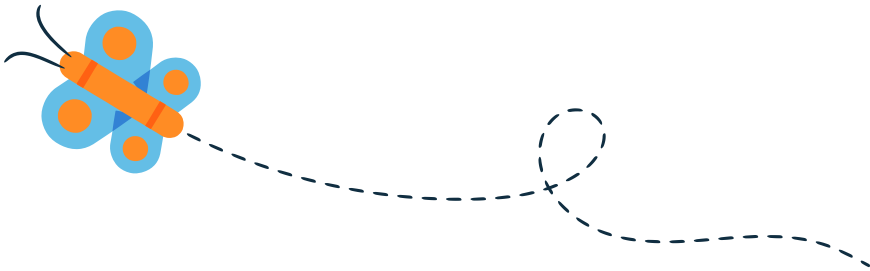
- To recognize and read some short words
- To read print in their surroundings

What you will do:

Pick an item or two around your house with written words on it, like a shampoo bottle, cereal box, or a piece of mail. Now, challenge your child to see how many words they can read from the text on the item. Have them write down the words that they know.

When they are done, read the text together. If there are other short words in the text that they didn't write on their list, sound them out together.

If your child is ready: If your child is reading a lot of shorter words, challenge them to sound out mid-length words that are not on their list, using what they know about letter sounds.



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Math Activity: Making Change

Use coins to teach your child there's more than one way to solve math problems.

Length of activity:
10–15 minutes

Level of Engagement Required by Adult: Medium

Level of Prep Required: Low

What you need:

- 2 dimes, 5 nickels, and 10 pennies OR Coins Sheet and scissors

What your child is learning:

- To add numbers to 25
- To add coins and understand money values
- To try multiple approaches to the same problem

What you will do:

Give your child the pile of change or let them cut out the coins from the Coins sheet. Then, tell them that one great thing about math is that there are a lot of ways to get the same answer. Today, you'll be exploring different ways to make the same amount of change.

Now, challenge them with the following questions:

- ☐ Can you make ten cents using only nickels?
- ☐ Can you make ten cents using only pennies?
- ☐ Can you make ten cents with pennies and nickels?

For more of a challenge, keep going to twenty-five cents with the following questions:

- ☐ Can you make twenty-five cents with dimes and nickels?
- ☐ Can you make twenty-five cents with only nickels?
- ☐ Can you make twenty-five cents with dimes and pennies?
- ☐ Can you make twenty-five cents with nickels and pennies?
- ☐ Can you make twenty-five cents with dimes, nickels, and pennies?

If your child is ready: Each of the twenty-five cent questions has multiple possible answers! For example, your child could reach twenty-five cents with two dimes and one nickel, or with one dime and three nickels. If finding one solution is easy for your child, help them develop mental flexibility by seeing how many other answers they can come up with for the same question.

Coins