

## Coding

### Extend the Moment

- What are some of the challenges you experienced while giving or receiving the instructions, what are ways to overcome them?
- Have you child use the words to spell out each of the steps? What happens if you miss a step?
- Try starting with fewer steps before giving additional instructions.
- What happens if you mix up the steps of an algorithm?
- What other ways do you use algorithms in your daily life? Bedtime routines? Chores around the house? Dance party?

### Games!

- Code Quest | SciGirls [pbskids.org/scigirls/games/code-quest](https://pbskids.org/scigirls/games/code-quest)



- Try some of the coding resources from PBSKIDS attached and
- Or try one of these outdoor games taken from [teachyourkidscode.com](https://teachyourkidscode.com):

#### Simon Says!

Give your kids a task they have to “teach” someone else to do, by breaking down the activity into small steps. This may be something like jumping rope, riding a bike, or even swinging on a swing.

The coder has to break down each step of the task or the 'follower' won't be able to perform it correctly. For the example of skipping rope, the coder might say:

- "Simon says, pick up the rope"
- "Simon says, put one end in each hand."
- "Simon says, put the rope behind your back."
- "Simon says, circle both hands to swing the rope over your head."
- "Simon says, jump with both feet over the rope."

It helps if an adult acts as the follower so that they can insist that the instructions are VERY clear. If the coder gives the follower an instruction that doesn't make sense in the sequence of events, the follower can't do it.

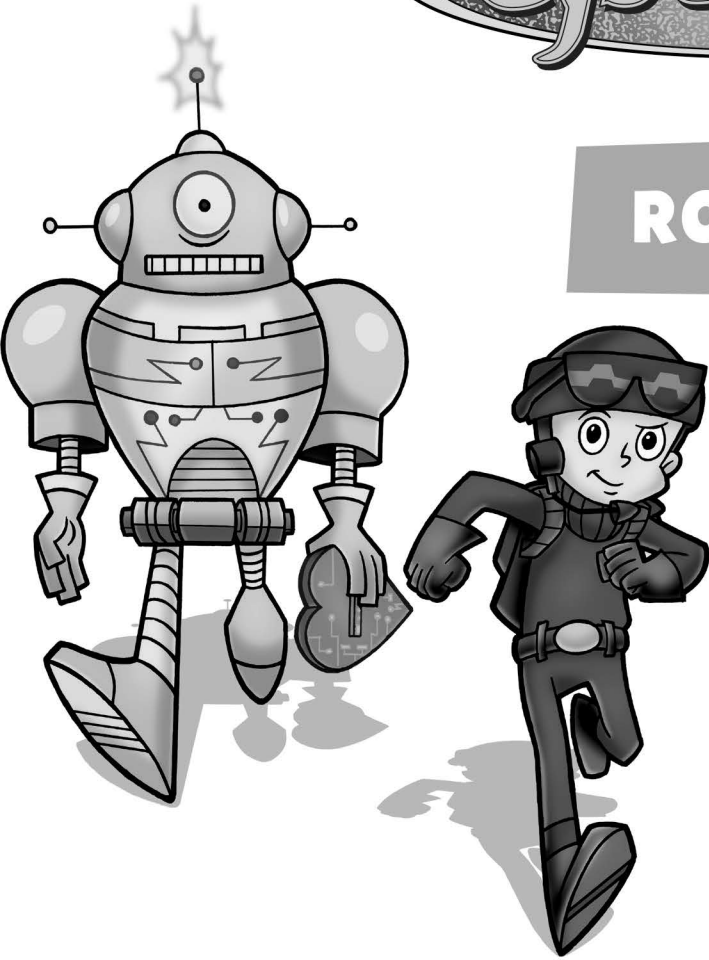
### **Outdoor Treasure Hunt**

Have your kiddos follow the instructions (algorithms) through the backyard, front yard, or any other area to find the treasure. It's best to be very concrete in the instructions given, as computers need very clear and concrete algorithms to execute their tasks.

1. An example of a treasure hunt 'map' could read:
2. Take 10 steps forward
3. Bunny hop 5 hops to the LEFT
4. Crab crawl 20 steps to the RIGHT
5. Somersault forward twice

Be creative with your directions. You can also use landmarks to direct your kids.

Let them work through the sequence all the way to find the candy, toy, or big brother at the end of the treasure hunt! Then change it up and have them describe the steps they are taking to get back to home base. Decomposition win all around!



## ROBOT RETRIEVER

In the episode *Inside Hacker*, Inez and Jackie must program a robot to follow a list of simple commands to do a dangerous job for Matt. Now it's your turn! Make a robot remote, and then make a list of commands so your robot (a friend) can do a job for you. Here's how.

### **MATERIALS:**

- Paper
- Pencil

1. Use the next page to make your robot remote.
2. Invite a friend to be your robot.
3. Put an object in a place where your robot can reach it, and pick a starting place for your robot.
4. Use the robot commands on the remote to figure out what steps your robot has to follow. What does it have to do to get from the starting place to the object and pick it up? What does it have to do to get it back to you?
5. Write the commands for your robot in order on a piece of paper. (You can write more robot commands in the blank spaces on the remote.)
6. Read the commands one at a time from your list for your robot to follow. Did your robot retrieve the object for you? If not, check your commands again to see what's wrong, and then try again!

Visit [PBSKIDS.org/cyberchase](https://www.pbskids.org/cyberchase) for activities and games!

## MAKE A ROBOT REMOTE

Make this remote to command your robot to do a task.

### MATERIALS:

- Scissors
- Piece of thin cardboard
- Glue

### DIRECTIONS:

1. Cut out the "Robot Commands" chart along the dotted lines.
2. Glue to a piece of cardboard.
3. Cut out the "How to Obey Commands" chart along the dotted lines and glue it to the back of the remote.

### ROBOT COMMANDS

**WALK:**  
0 1 2 3 4 5 6 7 8 9

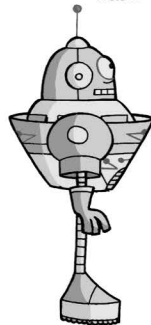
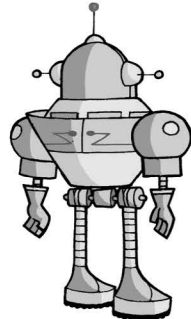
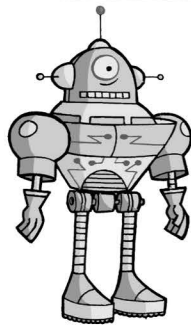
**TURN RIGHT**

**TURN LEFT**

**EXTEND ARM**

**RETRACT ARM**

**PICK UP**



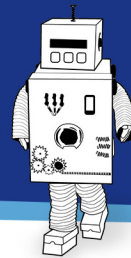
### HOW TO OBEY COMMANDS

COMMAND	HOW TO OBEY
<b>WALK:</b> 0 1 2 3 4 5 6 7 8 9	Walk "baby steps" in a straight line for the number of steps commanded before stopping.
<b>TURN RIGHT</b>	Turn to the right.
<b>TURN LEFT</b>	Turn to the left.
<b>EXTEND ARM</b>	Reach out toward front.
<b>RETRACT ARM</b>	Drop arm to side.
<b>PICK UP</b>	Grasp object with hand. (You may bend to reach object.)

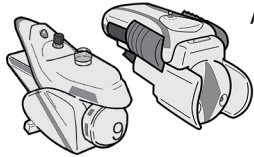
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# Robot Coder



## Follow the Code



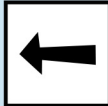
Agent Oswald needs YOUR help to move the ODD-some robot through the warehouse to retrieve his gadgets! Use the key on the side of the page and follow the codes to guide the robot.

		<b>Start</b> 		

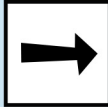
### Key



Forward



Left



Right



Number of Spaces

Code 1



Where did you end?

Code 2



Where did you end?

Code 1 = Z on the grid, Code 2 = X on the grid

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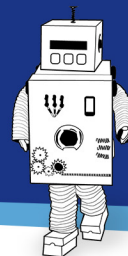
Find Odd Squad games, videos, and OddTube at [pbskids.org/oddsquad](http://pbskids.org/oddsquad)

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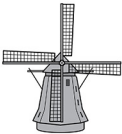








# Robot Coder



## Write Your Own Code

Mark a box on the grid as the start. Select a shape (●■▲●) as the ending point. On a separate piece of paper write the name of this shape. This is the answer to Code 1.

Fill in the blank spaces below for Code 1. *You don't have to fill in all the boxes, but you can.* Use arrows (e.g., ↑ ↓ → ←) and numbers to create your code. Remember, the robot must move around objects.

To create Code 2, do the same thing only choose a different shape for the ending point. Write the name of this shape on a separate piece of paper. Fill in the blank spaces below for Code 2.

Challenge a family member or friend to follow your codes and tell you where they ended. You can then reveal your answers!

**Code 1**

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Where did you end? \_\_\_\_\_

**Code 2**

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Where did you end? \_\_\_\_\_

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Find Odd Squad games, videos, and OddTube at [pbskids.org/oddsquad](http://pbskids.org/oddsquad)

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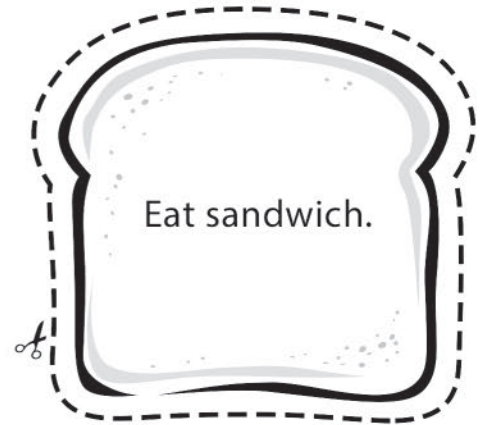
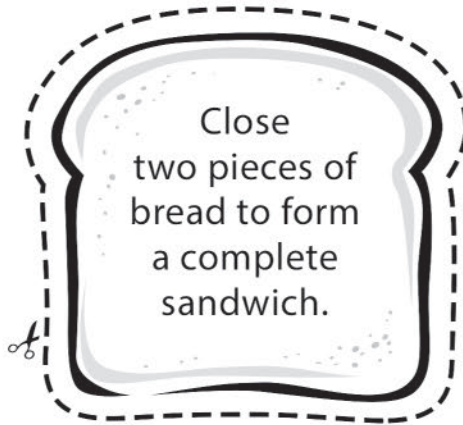
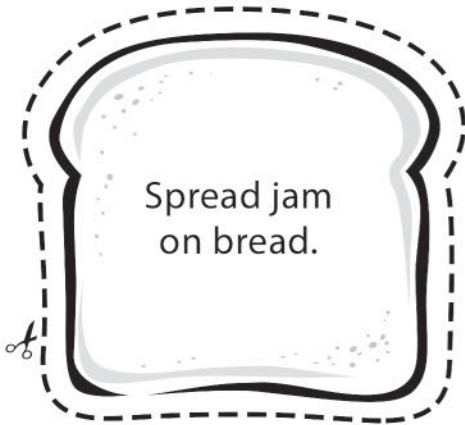
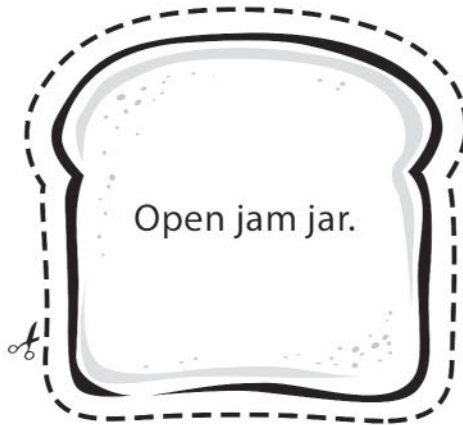
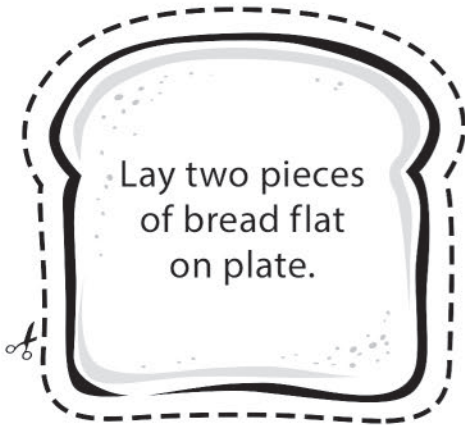
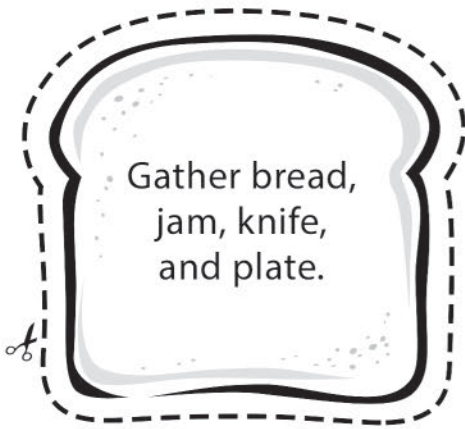




# Secret Sequence Scramble

## Jam Sandwich Scramble Cards

Odd Squad needs YOU to help solve a secret sequence scramble! You can use sequencing cards to create a set of "how to" instructions for an activity, like brushing your teeth, planting a flower, or making your own gadget for solving oddness. Here are instructions for making a jam sandwich in seven steps. Cut out the cards and place them in the correct order. On the back of the cards, number them from 1-7. Scramble the cards, and see if you can place them in the correct order for making the sandwich.












# Secret Sequence Scramble

## Make-Your-Own Scramble Cards

Use the blank cards on this page to create your own ODD-some "Secret Sequence Scramble Cards." Choose any activity. Think about the steps that are needed to complete the activity, and draw or write one step on each card. You don't have to use all seven cards.

Cut out the cards, and place them in the correct order. Turn the cards over, and number them from 1-7. Shuffle the cards, and challenge a family member, friend, or fellow Odd Squad agent to put the cards in the correct order.

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**For more games and activities, visit [pbskidsforparents.org](http://pbskidsforparents.org)**

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