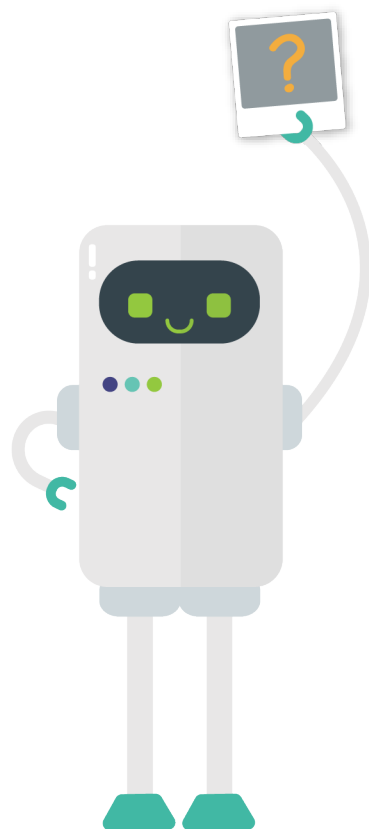


CODE/BREAK

Traffic Bot

with code.irobot.com
or the iRobot™ Coding App

Root is on an adventure to learn about inventions that improve our lives. Shine light on your **programming** and **math skills** to solve the **coding challenges** and **discover** who helped invent the traffic signal!



**Things
You'll
Need:**



Activity
Packet



iRobot™
Coding
App



Pen/
Pencil

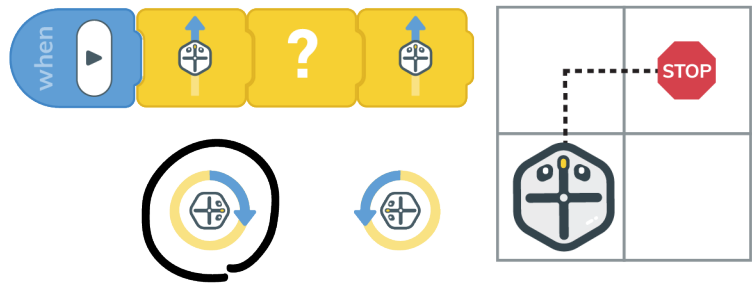
iRobot™
Education



Missing Directions

Turn **Blocks** code Root to turn to the right or the left.

Circle the missing picture to make the code blocks match Root's path.



- Code blocks: 'when', '?', 'up'. Options: 'X' (turn right) and 'I' (turn left). Grid: Root starts at bottom-right, moves up to top-right, then left to top-left where a 'STOP' sign is.
- Code blocks: 'when', 'turn left', '?'. Options: 'T' (turn right) and 'L' (turn left). Grid: Root starts at bottom-right, moves left to top-right, then down to bottom-left where a 'STOP' sign is.
- Code blocks: 'when', '?', 'up'. Options: 'K' (turn right) and 'W' (turn left). Grid: Root starts at bottom-right, moves up to top-right, then left to top-left where a 'STOP' sign is.
- Code blocks: 'when', '?', 'up'. Options: 'A' (turn right) and 'Z' (turn left). Grid: Root starts at top-left, moves down to bottom-left, then right to bottom-right where a 'STOP' sign is.

All done? Nice work! Next, write the letters next to the pictures you circled into the number spaces below.



Code #1

1	2	3	4
---	---	---	---

Have you found the letters? Turn to page 8 to write the code in the spaces beside Code #1.

Facing Direction

Root is learning directions. Help Root turn north, south, east, and west!

1. Open a new project. Copy this code.



Press Play. Which direction is Root facing at the end of the program?



P



L



S



W

2. Clear and copy this code.



Press Play. Which direction is Root facing at the end of the program?



G



Z



A



U

3. Clear and copy this code.



Press Play. Which direction is Root facing at the end of the program?



W



A



K



B

Great job! Next, write the letters next to the pictures you circled into the number space.



Code #2

1 2 3

Have you found the letters? Turn to page 8 to write the code in the spaces beside Code #2.

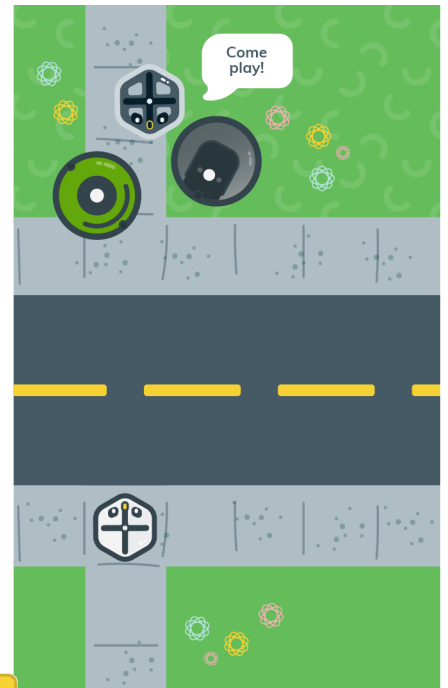
Code Across the Road

Root needs to be safe when crossing the street. Use code to help Root get to friends!

1. Read the Safety Directions.

Directions:

Stop.
Look left.
Look right.
Look left again.
Cross the street.



2. Copy each code in a new coding project and press Play.



3. Circle which code helps Root safely cross the street.

If Code #1 is the safest route, the answer is “**V Y K**”

If Code #2 is the safest route, the answer is “**A O S**”

If Code #3 is the safest route, the answer is “**R R E**”

Code #3

1

2

3

Have you found the letters? Turn to page 8 to write the code in the spaces beside Code #3.

Crosswalk Colors

There are patterns on the sidewalk! What colors can Root identify?

Line 1 is **not** red, blue, or black.

Line 2 is **not** red or black, and it does not match Line 1.

Circle the correct color pattern.

Line 1	<div></div>	<div></div>	<div></div>	<div></div>
Line 2	<div></div>	<div></div>	<div></div>	<div></div>

A

L

O

T

Line 1 is **not** red or black.

Line 2 is the only blue line.

Line 1	<div></div>			<div></div>
Line 2	<div></div>	<div></div>	<div></div>	<div></div>

T

M

R

C

Hint: There is **NO BLUE** in this pattern.

Line 1 is **not** red.

Line 2 matches Line 1 and is **not** black.

Line 3 is not black and does not match Line 2.

Line 1			<div></div>	
Line 2			<div></div>	
Line 3			<div></div>	

Q

P

A

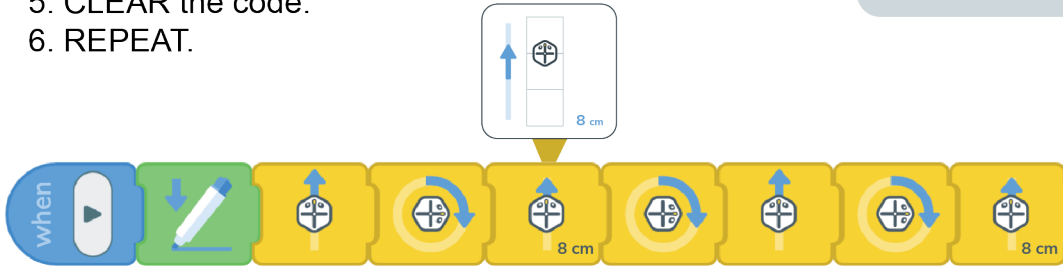
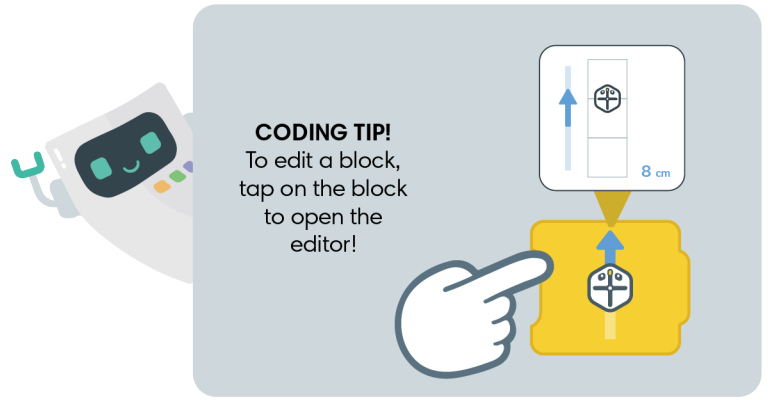
M

Code #4

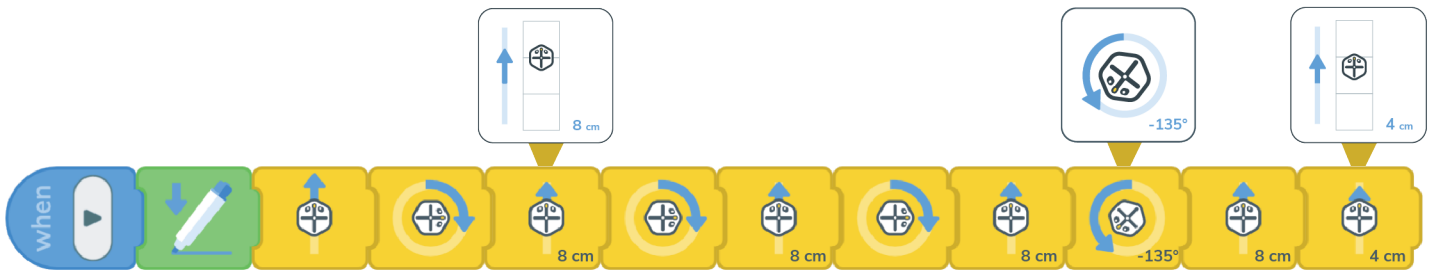
Have you found the letters? Turn to page 8 to write the code in the spaces beside Code #4.

Sidewalk Letters

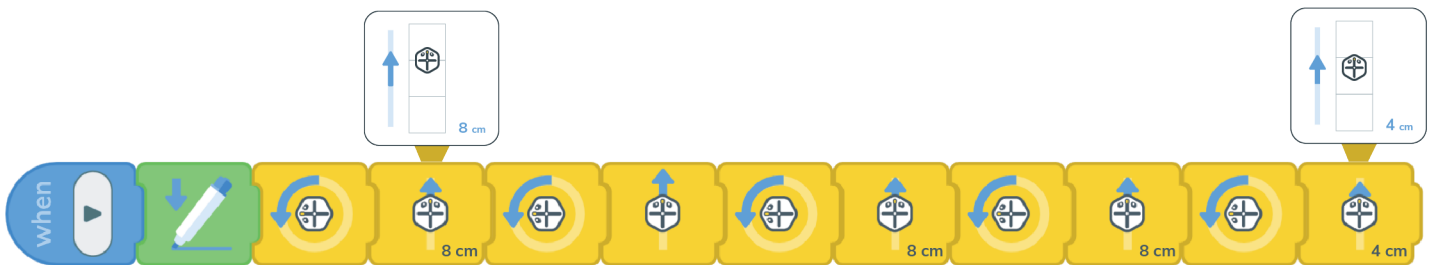
1. OPEN a new coding project.
2. COPY the code and press Play.
3. WATCH Root move.
4. WRITE letter in the box.
5. CLEAR the code.
6. REPEAT.



With this code, Root drew the letter:



With this code, Root drew the letter:



With this code, Root drew the letter:



All done? Nice Work! Next step is to copy the letters from the boxes above into the Code Key.

Code #5

1
2
3

Have you found the letters? Turn to page 8 to write the code in the spaces beside Code #5.

Shapes and Symbols

What does Root draw?

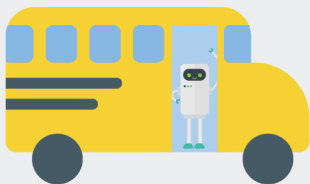
1. Open a new project. Copy this code.



2. Press Play.



3. What does Root draw?



If Root draws a bus, the answer is “**L O**”



If Root draws a stop sign, the answer is “**A N**”



If Root draws a traffic cone, the answer is “**M A**”



Code #6

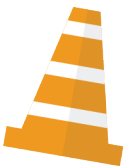
1 2

Have you found the letters? Turn to page 8 to write the code in the spaces beside Code #6.

Crack the Code!

To figure out who helped invent the traffic light, you must solve the puzzles on **pages 2-7**.

When you complete each puzzle, write the letters in the correct spaces below.



Code #1: _____

Code #2: _____

Code #3: _____

Code #4: _____

Code #5: _____

Code #6: _____

Once you have all the letter spaces filled above, it's time to crack the code!
Starting with the 4 spaces next to "Code 1," fill in the spaces below from left to right.

Who invented the traffic signal?

Code #1

_____!