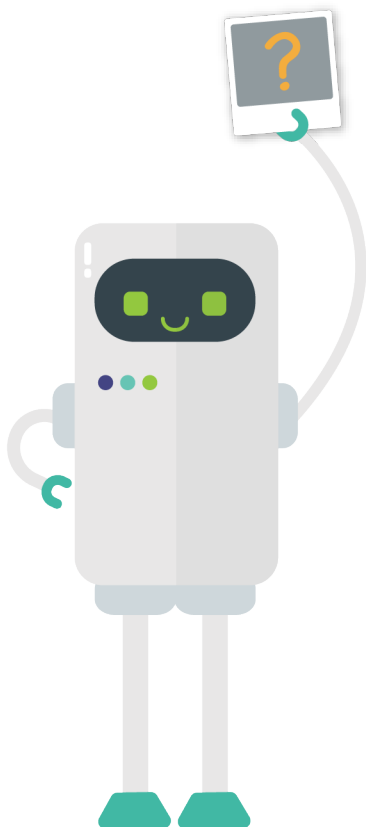


CODE/BREAK

Traffic Bot

with Root® Coding Robot

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



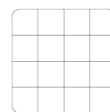
iRobot™ Coding App



Root® Coding Robot



Dry Erase Markers



Fold-Out Whiteboard Grid



Pen/ Pencil

iRobot™
Education

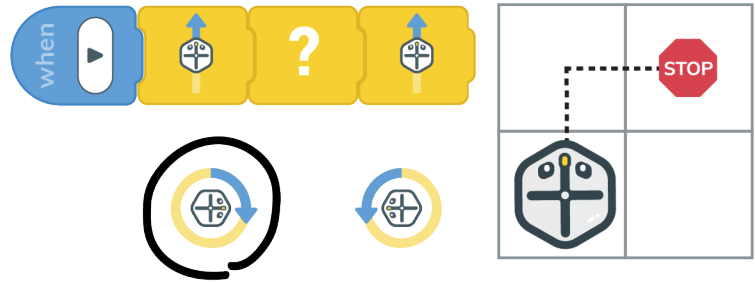
Missing Directions

You'll Need:



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

Find the Light

You'll Need:

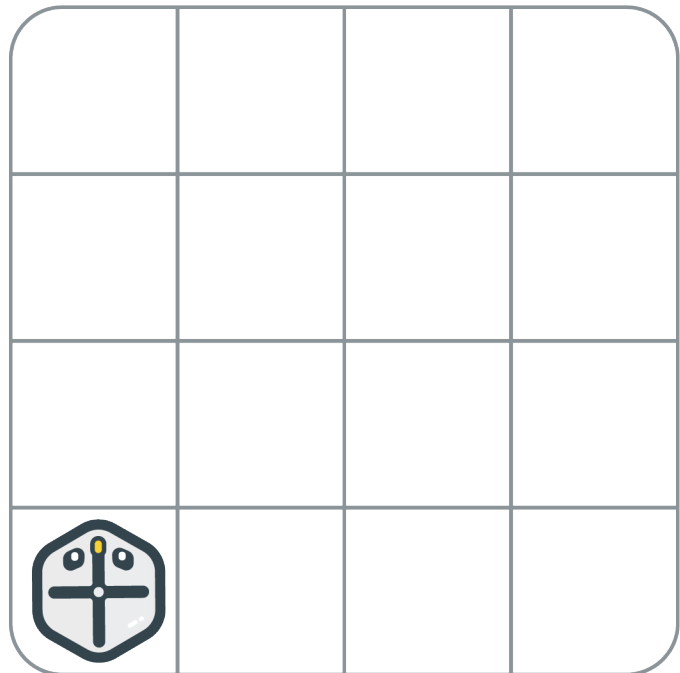


One traffic light is broken. Use the code to find the broken traffic light!

1. Open a new project. Copy this code.



2. Put Root on the whiteboard grid.



3. Press Play.

4. Where does Root stop?



If Root stopped here, the answer is "**H T X**"



If Root stopped here, the answer is "**S G A**"



If Root stopped here, the answer is "**R B G**"



Code #2

1 2 3

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

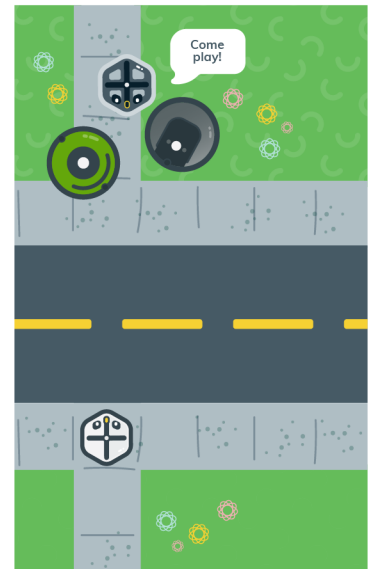
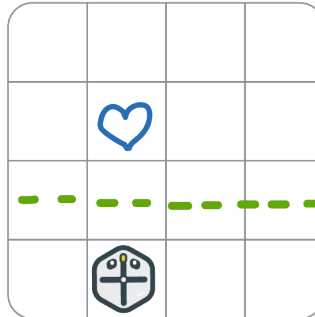
Code Across the Road

You'll Need:



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

1. Place Root on the whiteboard grid.
Draw dashed lines and a heart like this!



2. Copy each code in a new coding project and press Play.
3. Circle which code helps Root safely cross the street to the heart.

Directions:

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

Code #1



Code #2



Code #3



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

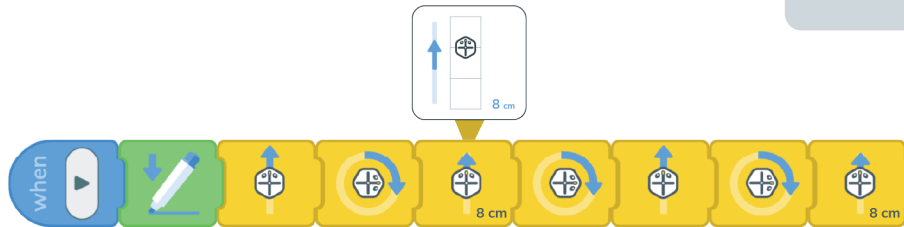
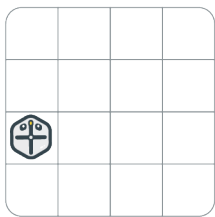
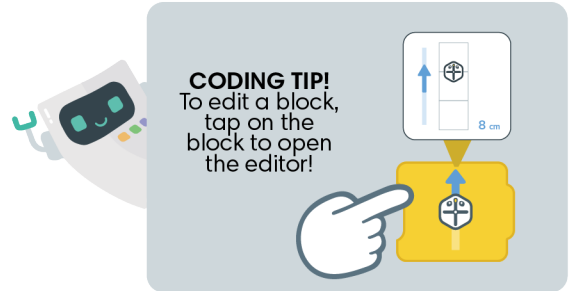
Have you found the letters? Turn to page 8 to write the code in the spaces beside Code #4.

Sidewalk Letters

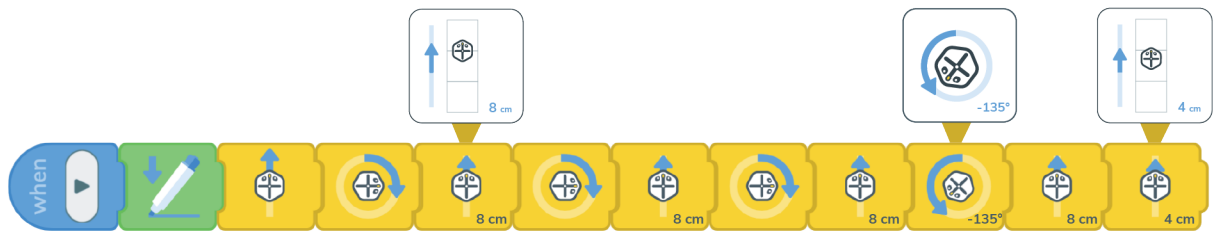
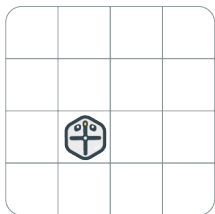
You'll Need:



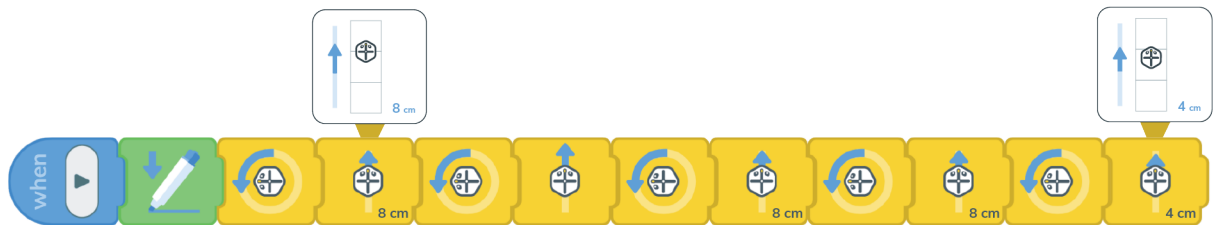
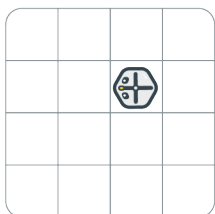
1. OPEN a new coding project.
2. PLACE Root on the whiteboard grid.
3. COPY the code and press Play.
4. WATCH Root move.
5. WRITE letter in the box.
6. CLEAR the code.
7. REPEAT.



With this code, Root drew the letter:



With this code, Root drew the letter:



With this code, Root drew the letter:

Code #5

1 2 3

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

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

Shapes & Symbols

You'll Need:



What does Root draw?

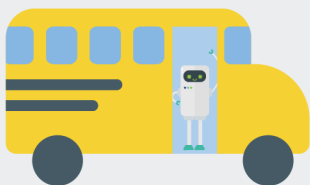
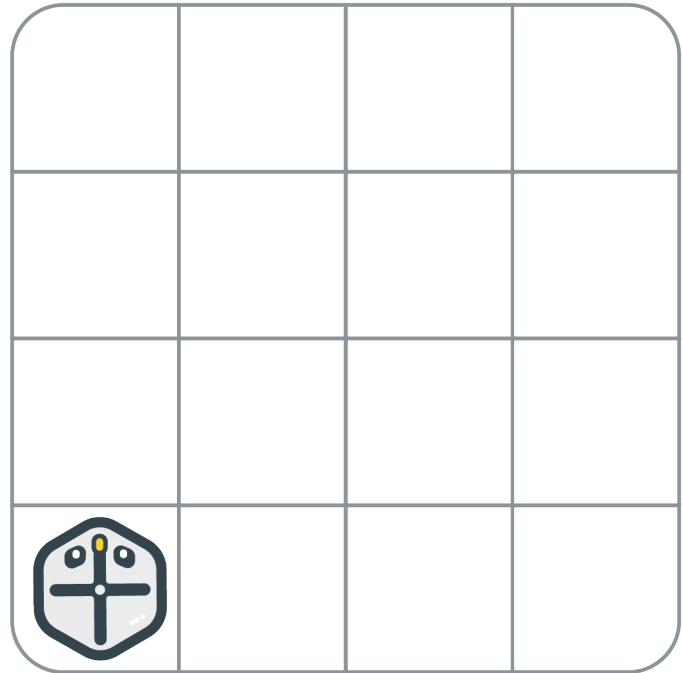
1. Open a new project. Copy this code.



2. Put Root on the whiteboard grid.

3. Press Play.

4. 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

_____ !