

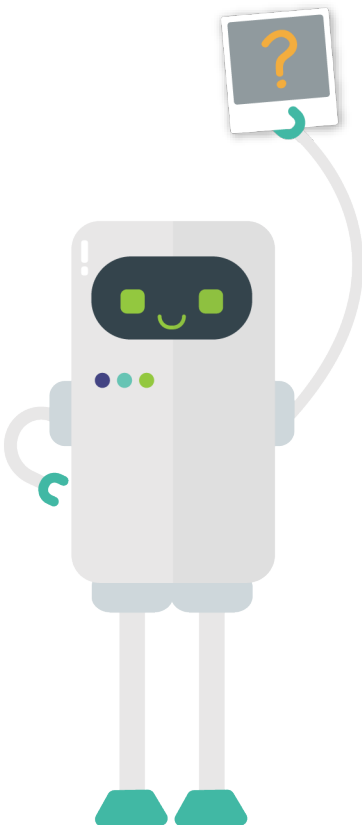
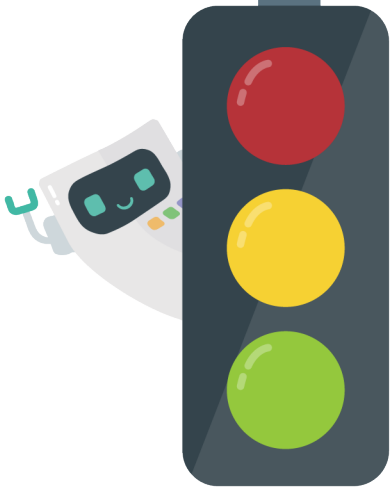
CODE/BREAK

Traffic Bot

Unplugged

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!

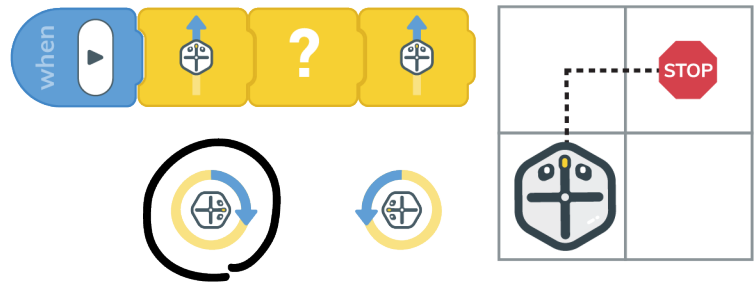
Answer Key



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' (blue), 'play' (blue), 'turn right' (yellow), 'turn left' (yellow), 'play' (yellow).

Options: X (turn left), I (turn right) - **I is circled**.

Grid: Root starts at bottom-right, moves up to top-right, then left to top-left where a 'STOP' sign is.
- Code blocks: 'when' (blue), 'play' (blue), 'turn right' (yellow), 'turn left' (yellow), 'play' (yellow).

Options: T (turn left), L (turn right) - **T is circled**.

Grid: Root starts at bottom-right, moves up to top-right, then left to top-left where a 'STOP' sign is.
- Code blocks: 'when' (blue), 'play' (blue), 'turn right' (yellow), 'turn left' (yellow), 'play' (yellow).


Options: K (turn left), W (turn right) - **W is circled**.

Grid: Root starts at bottom-right, moves up to top-right, then left to top-left where a 'STOP' sign is.
- Code blocks: 'when' (blue), 'play' (blue), 'turn right' (yellow), 'turn left' (yellow), 'play' (yellow).

Options: A (turn left), Z (turn right) - **A is circled**.

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.



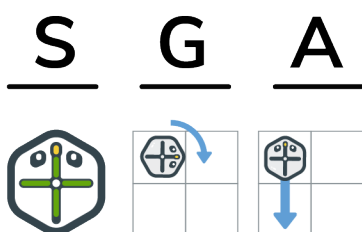
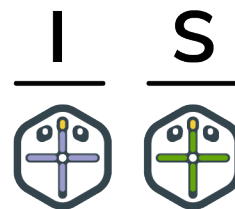
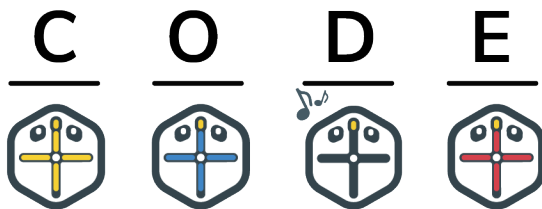
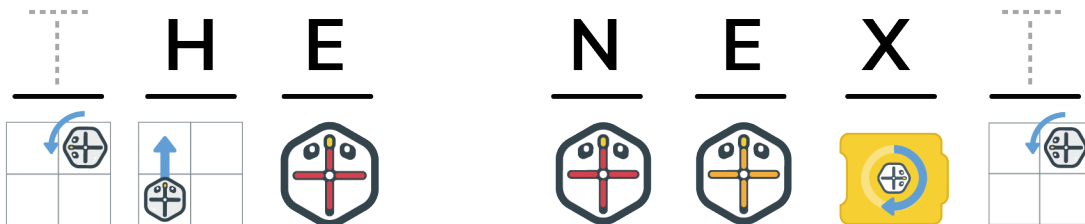
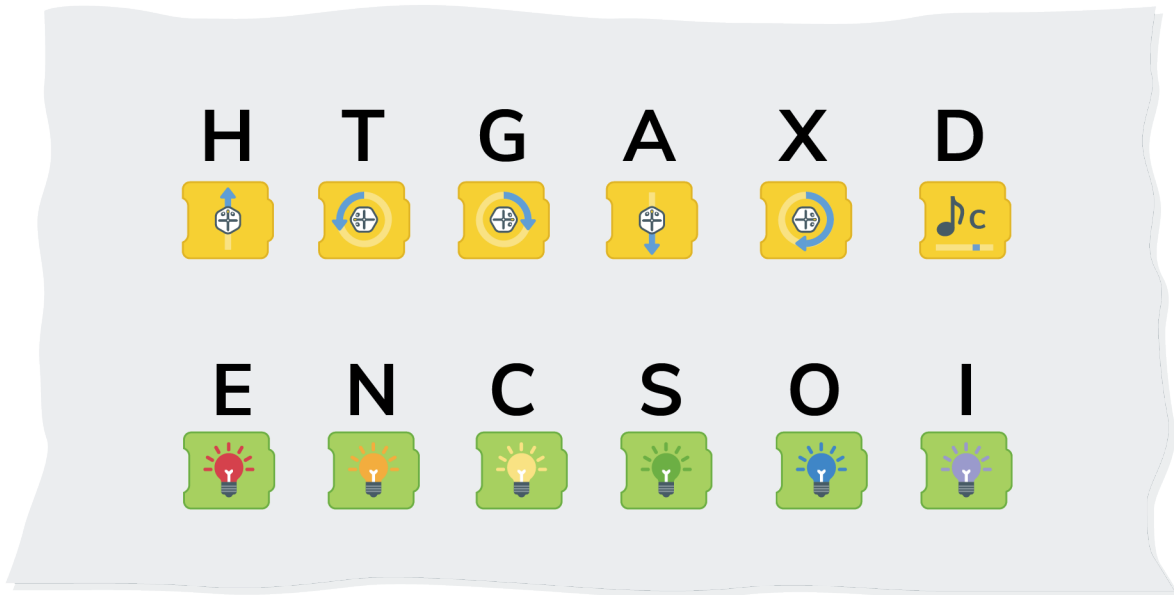
Code #1

I	T	W	A
1	2	3	4

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

Hidden Message

Use the guide to decode the secret message.
Who invented the traffic signal?





Code #2

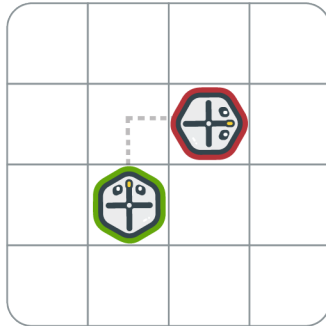
S G A

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

Coding Construction



Some of Root's code has not been finished. Read the code and help complete the program!



Which block is missing?



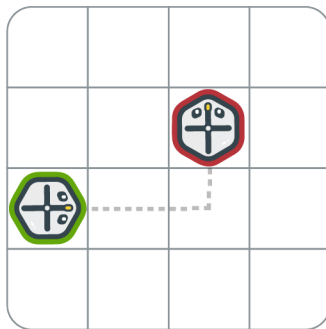
M



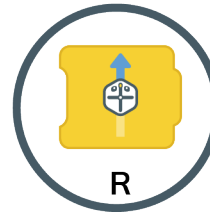
X



R



Which block is missing?



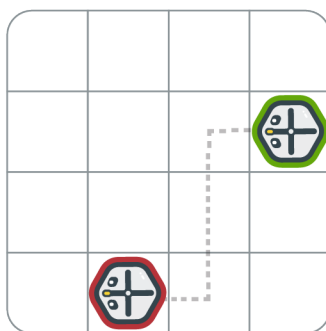
R



J



W



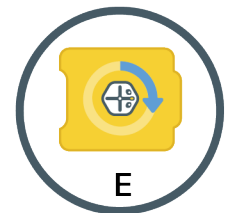
Which block is missing?



A



B



E



Code #3

R R E













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.











				
Line 1				
Line 2				

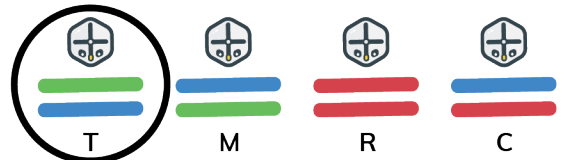
Circle the correct color pattern.



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

Line 2 is the only blue line.

				
Line 1				
Line 2				










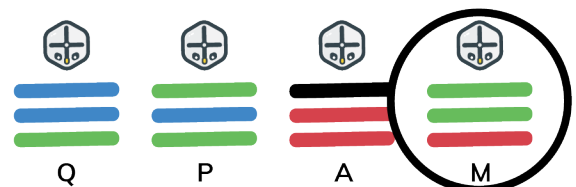
Hint: There is **NO BLUE** in this pattern.

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				
Line 2				
Line 3				





Code #4

T T M

Have you found the letters? Turn to page 6 to write the code in the spaces beside Code #4.

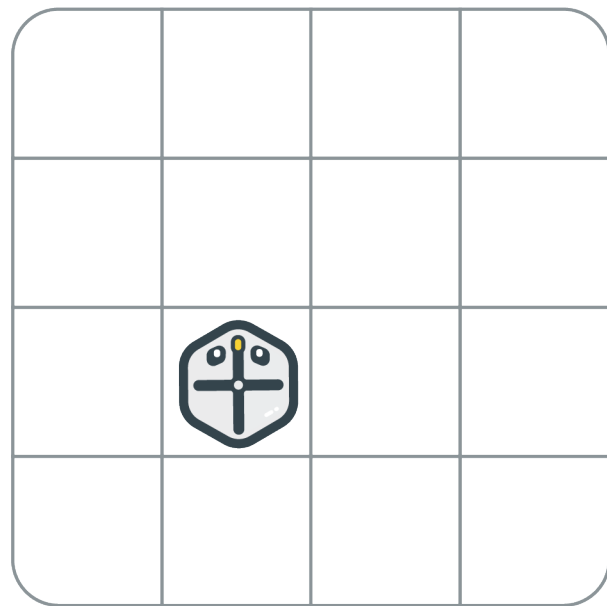
Find the Light

One traffic light is broken, but Root cannot find it. Use the code to find the broken traffic light!

1. Read this code.





2. Put your pencil on Root and follow the code to draw Root's path.
Hint: Each Move Block is one space on the grid.




3. Place an X where Root stops.



 If you put an X here, the answer is "**R B A**"

 If you put an X here, the answer is "**O R G**"

 If you put an X here, the answer is "**A R E**"





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


Mixed Signals


Event Blocks receive information and activate Root's sensors. Can you match the correct light pattern with Root's bump and touch sensors?


Code Key














Circle the correct light pattern.









1.



			R
			J
			A

2.



			X
			N
			W



Code #6

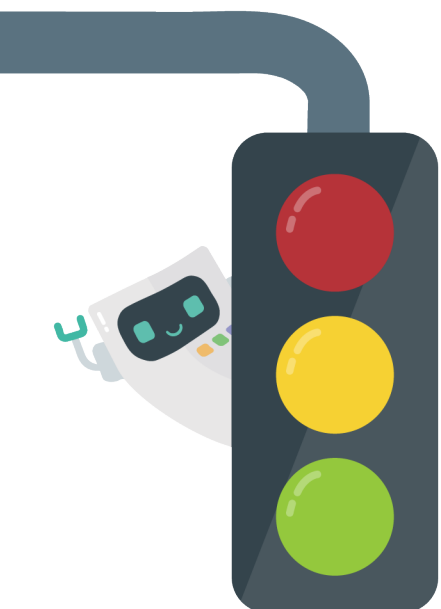
A N
1 2

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 2-6**.

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



Code #1: I T W A

Code #2: S G A

Code #3: R R E

Code #4: T T M

Code #5: O R G

Code #6: A N

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?

 I T W A S G A R R E T T
Code #1

 M O R G A N !