Traffic Bot

Overview

Traffic signals are a staple of safety in our everyday lives. Complete the coding challenges and discover more about who invented the traffic signal!

Learning Objectives

Students will be able to:

- Build a program that makes the Root robot glow red, yellow, and green like a traffic light
- Identify details about Garrett Morgan, the inventor of the traffic light
- Make connections between the purpose of the traffic light and how it impacts daily life
- Reflect on other ways coding and robotics can impact classrooms and communities

Teacher Prep

- Watch the Big City Adventure video
- New to iRobot Coding? Watch the Intro to Simulator video to help jumpstart your coding adventure and help familiarize yourself with the iRobot Education coding platform
- Print Traffic Bot CodeBreak packets
- Print Generations of STEM Activity

Getting Started

Share the Big City Adventure video with students. How can Root help fix the broken traffic signal? Discuss with students how to code Root as a traffic light. What colors will it need to glow?

Subject(s):

Coding & Robotics
ELA

Grade Level(s):

1-3, 3-5

Supplies:

Traffic Bot CodeBreak packet
Generations of STEM Activity
Big City Adventure video
iRobot Coding platform

Open the Starter Code: Big City Adventure to code Root into a Traffic Bot. Visit code.irobot.com and let students build their own program.

Let students share their coding solutions with the class to explain their thinking and expand about the decisions they made.

Note: To add code blocks to the program, click on blocks in the bottom block drawer and drag them into the project editor. When released, the blocks will connect and snap into place! To edit a code block, drag the block into the project editor. Click or tap on the block and the editor will appear. For this example, you will edit the **Light Blocks** to glow red, yellow, and green.

Here is what the starter code will look like:

Here is an example of what your finished code could look like:

Now let's try more independent coding!

Editing Code Blocks

Drag out a code block.

Tap on the code block to open the editor.

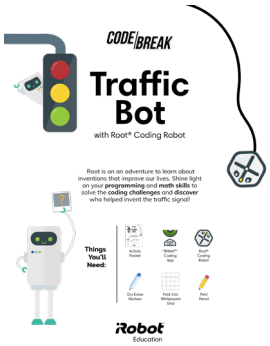
Practice

1) **Traffic Bot CodeBreak Packet:** Complete the coding challenges to discover who invented the traffic signal!

   Students can work independently or in small groups to complete the Traffic Bot CodeBreak packet.

2) **Generations of STEM Activity:** Learn more about Garrett Morgan, the inventor of the present-day traffic signal! This activity guide gives more information about Morgan's accomplishments and celebrates his contributions. Depending on the needs of your students, you can read the biography together as a class, in small groups, or as an independent activity.

   NOTE: The Generations of STEM Activity should only be completed AFTER the CodeBreak packet. Students need to complete the coding challenges in the CodeBreak packet to discover Garrett Morgan. Then, they can learn more about Morgan and his contributions to STEM.



Traffic Bot CodeBreak packet (available with robot, simbot, or unplugged)

Generations of STEM Activity: Garrett Morgan

Reflection

Wrap up the lesson with a discussion about inventions, problem solving, and identifying solutions. Some potential questions include:

- Why were Garrett Morgan's inventions so important?
- What qualities does Garrett Morgan embody that support his success?
- Think about the Root robot as a traffic signal. What are other ways robotics and code can help our classroom or our community?

Going Further

Interested to learn about other STEM superstars and their contributions and inventions? Check out other biographies in our Learning Library!

Check students' work with the attached answer keys!