PROGRAMMING CHALLENGE:

In this lesson, you will program KRAZ3 to drive over the 31313 play mat or any set of colors and identify the colors. The robot will also turn its head as it moves.

You will learn to repeat actions (loops) as well as decide between actions (switches).

To complete this challenge, you will also need to know how to leave the motors on while doing another action. You will use the Move Steering block in "on" mode.

BLOCKS YOU NEED:

Move Steering block in "On" Mode and **Medium Motor Block** found in the Green Programming Pallet tab
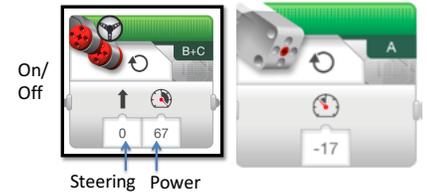
Switch block that uses the Color Sensor in the Measure Color Mode found in the Orange Programming Pallet tab

Loop block that repeats for 15secs found in the Orange Programming Pallet tab

Sound block that says the colors out load

KRAZ3 For Colors

STEP 1: Use a Move Steering Block to move the robot across the play mat. Also turn on the Medium Motor to make the robot's arms and head move.

STEP 2: Add a Switch Block that makes decisions based on the color sensor in Measure –> Color mode.

STEP 3: Inside the Switch use a Sound Block to make the robot say each color out loud (e.g. Black, Blue, Green, Yellow, Red…). Pick as many colors as you want.

STEP 4: Place all of the above in the Loop Block for 15 seconds.

STEP 5: Download your program.

Start moving across the line and keep rotating the head

Use a switch in color sensor - measure - color mode to play a different sound based on the color. Each tab set for a specified color plays the name of the color

Use a loop in time mode to keep checking the color for 15 seconds
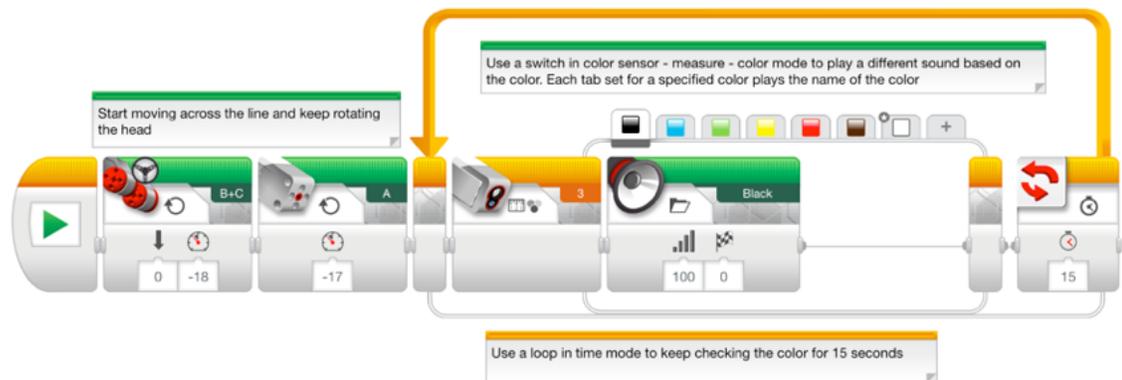
On KRAZ3, you can decide to use positive or negative power depending upon if you want the robot to move forwards or backwards. For KRAZ3, moving forward will use negative power because of the direction of its motors.

The robot's head is connected to the medium motor (A). You can decide which direction you want the head to spin using negative or positive power.