



## **Sound Block**

By Sanjay and Arvind Seshan

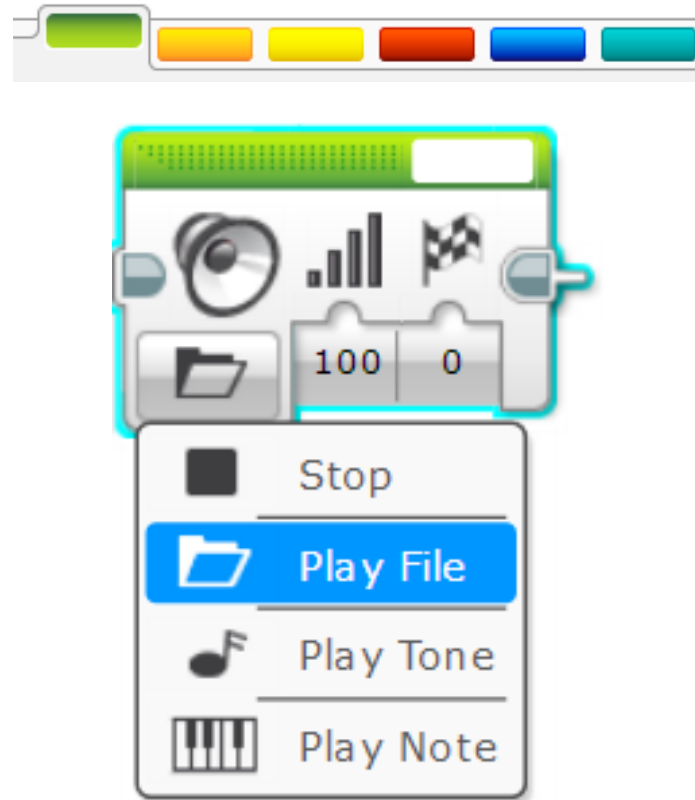
# **BEGINNER PROGRAMMING LESSON**

# LESSON OBJECTIVES

1. **Learn to use the Sound Block**
2. **Understand why the Sound Block can be useful in programming**

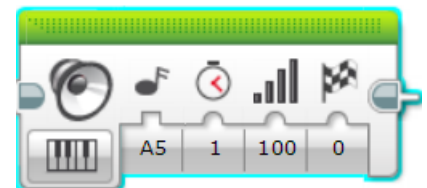
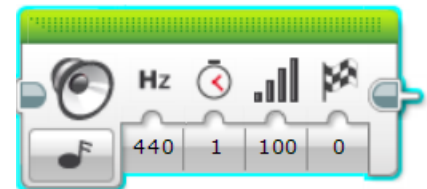
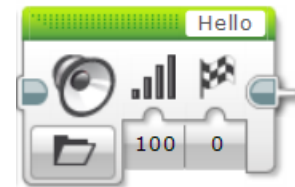
# SOUND BLOCK

- The Sound Block plays sounds to the EV3
- You can play files, tones, and notes
- Located in Green Tab

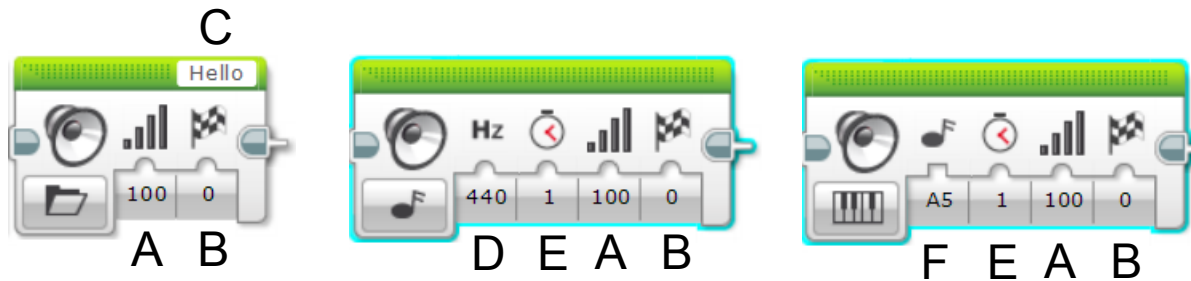


# MORE ON SOUND BLOCKS

- **Four Modes**
- **Stop**
  - Stop playing any sounds
- **Play File**
  - Play a .rsf sound file
  - This is used for playing sounds (eg. Hello)
- **Play Tone**
  - Play any music note (eg. D, D#)
  - Also plays custom frequencies via a data wire
- **Play Note**
  - Play a key on a piano



# INPUTS



- A. Volume of sound
- B. Wait for the sound to finish before moving on
- C. Sound file name
- D. Frequency/Note of sound
- E. Duration of sound
- F. Piano note to play

# SOUND BLOCK CHALLENGE 1

- **Make a program that plays hello after you press the touch sensor**
- **Hints:**
  - You will have to use a wait block
  - You will have to use the sound block in File mode

# CHALLENGE 1 SOLUTION

Wait for touch

Play Hello

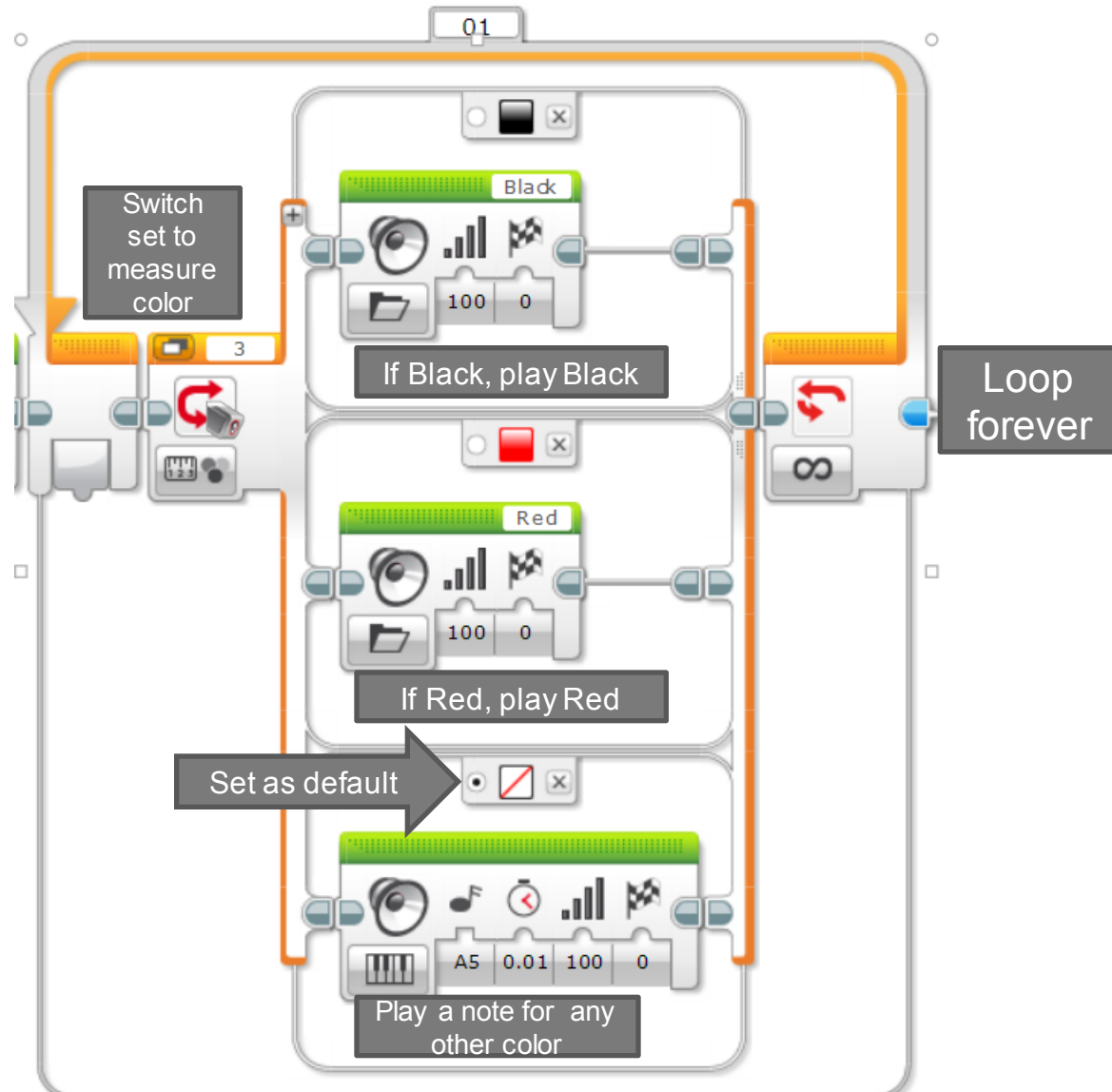


# SOUND BLOCK CHALLENGE 2

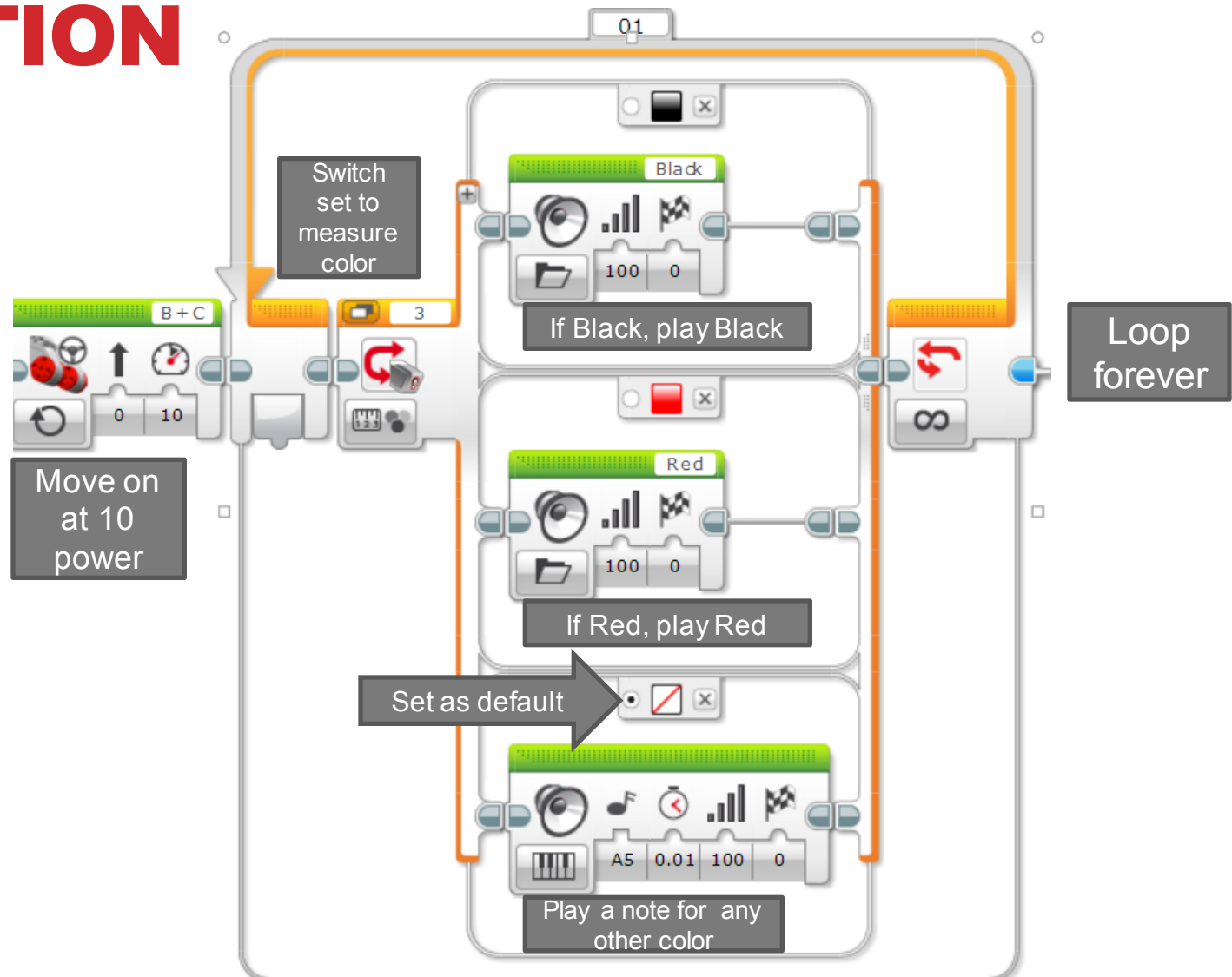
- **Pick up your robot and place it on different colors. Check if the color sensor reads black. If so, have the robot say “black”. If the color sensor sees red, have the robot say “red”**
  - **For any other color, play a note of your choice for 0.01 seconds**
  - **Make sure that the sound waits for completion**
  - **Repeat this forever**
- 
- **Bonus Challenge: Can you do the above while having the robot move? Have the robot drive over different colors to test your code**



# CHALLENGE 2 SOLUTION



# CHALLENGE 2 BONUS SOLUTION



# ADDITIONAL CHALLENGES

- **Add more colors to the switch so that as the robot drives over additional colors, it say “green”, “blue”, “yellow”, etc.**
- **Make the code stop after the robot detects 5 colored bands**

# DISCUSSION GUIDE

## Why might you want to know how to use the sound block?

- You might want to know what part of the code you are at. See Debugging lesson in Intermediate
- The sound block is a fun way to add emotion to your robot
- You can use sounds to interact with the user in a game by saying “good job”, “game over”, etc.

# CREDITS

- This tutorial was created by Sanjay Seshan and Arvind Seshan
- More lessons are available at [www.ev3lessons.com](http://www.ev3lessons.com)



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