

The logo for the Basic Programming Badge is a circular emblem with a green and yellow color scheme. It features a central gear-like shape with the words "BASIC PROGRAMMING BADGE" written around it. The text "OFFICIAL BADGE OF THE LABS" is also visible around the perimeter of the circle.

BASIC PROGRAMMING BADGE CHECK

Name: _____

Mentor: _____

Date: _____

TERMS AND SKILLS YOU SHOULD KNOW:

LED	Motor	Event/Commands
Servo	Visual Programmer	Sequence
Sensor	Motherboard	

HELPFUL RESOURCES:

- Guide to using Snap! To program the Finch robot:
<http://www.finchrobot.com/software/snap>
- Great Google Slides introduction to using Finch in Scratch 2.0 by Bill Steinbach at Northwood STEM:
https://docs.google.com/presentation/d/1YoWLk4P-KFLapTiRNfzyx_MDgy_-7whTnJXArulY314/htmlpresent
- Manual and tutorials both available at:
www.hummingbirdkit.com/learning

EXPLANATION OF SKILLS:

This badge shows that the recipient understands basic programming. They have used visual programming software to construct a program that facilitates an action or a response to stimuli.

BADGE CHECK GUIDELINES:

- You are allowed to use the Badge Resources and other print or online tools if you get stuck during your badge check, but no one-on-one help from others.
- You must complete all questions and tasks associated with the badge you're earning.
- You must present the evidence of your work to a teen mentor for verification and sign-off.
- If you don't pass the badge check, you can take it again in a week.

KNOWLEDGE CHECK:

1. What is a visual programming software?
2. Name three different kinds of sensors to which you could program a robot to react.
3. What is the difference between a motor and a servo?
4. What applications could you use to program your robot?

SKILLS CHECK: Program a robot

1. Using either a Finch or Hummingbird robot, set up the robot and connect it to a computer with a visual programming software installed (Visual Basic, Snap! or Scratch).
2. Once connected, begin to designate actions for the robot to take (Ex: turn on lights, move in a particular way or direction).
3. Connect these actions to a specific stimuli or sensor (Ex: lights come on due to a loud noise, robot turns due to the close proximity of an object).
4. Show your program works as designed through a demonstration (Ex: Finch maze, Hummingbird robot test).
5. Save your program so that it can be run or edited later.

UPON COMPLETION:

- Submit sheet with **knowledge check** answers to mentor for review
- Present your robot to a mentor or staff member – Show what the robot does and have the mentor test it out.
- If a mentor cannot review your badge check immediately, schedule a time for you and a mentor to go over your badge check

SKILLS BADGE CHECK APPROVAL:

EARNER'S SIGNATURE

MENTOR'S SIGNATURE

