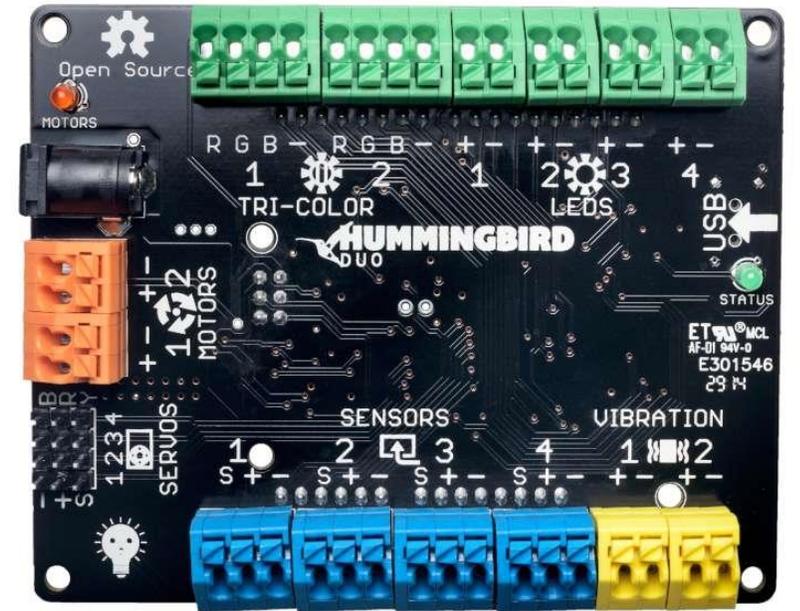


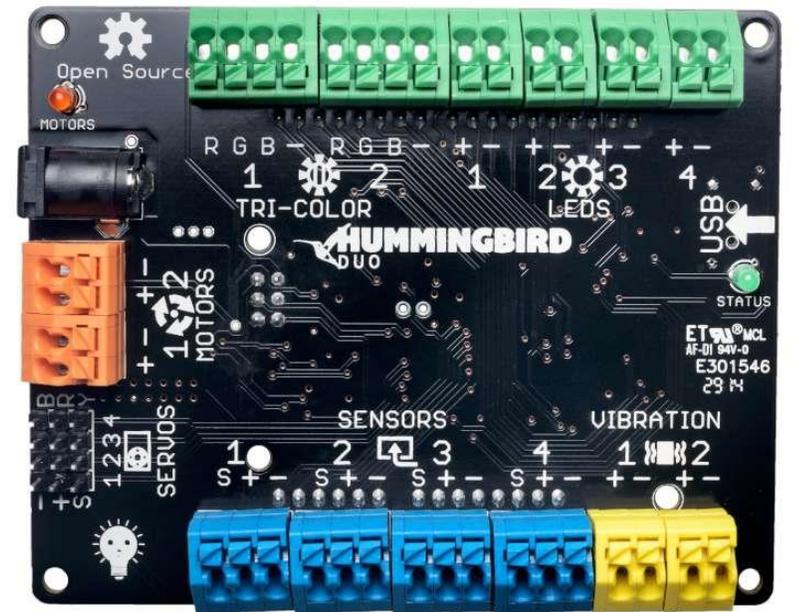
# HUMMINGBIRD

# Maker Challenge



# ESSENTIAL QUESTION

How do we identify  
**cause** and **effect**?



# OUR GOAL

**I can** work collaboratively to code a sensor & LED light using a hummingbird circuit board.

**I can** create & identify a cause and effect relationship.

## & Habits of Mind

- ♥ Persisting
- ♥ Striving for Accuracy
- ♥ Thinking & Communicating with Clarity and Precision
- ♥ Applying Past Knowledge to New Situations

## CAUSE &amp; EFFECT

Illustration

vs.

Literary



## The 3 Little Pigs

The third pig made a house of bricks.

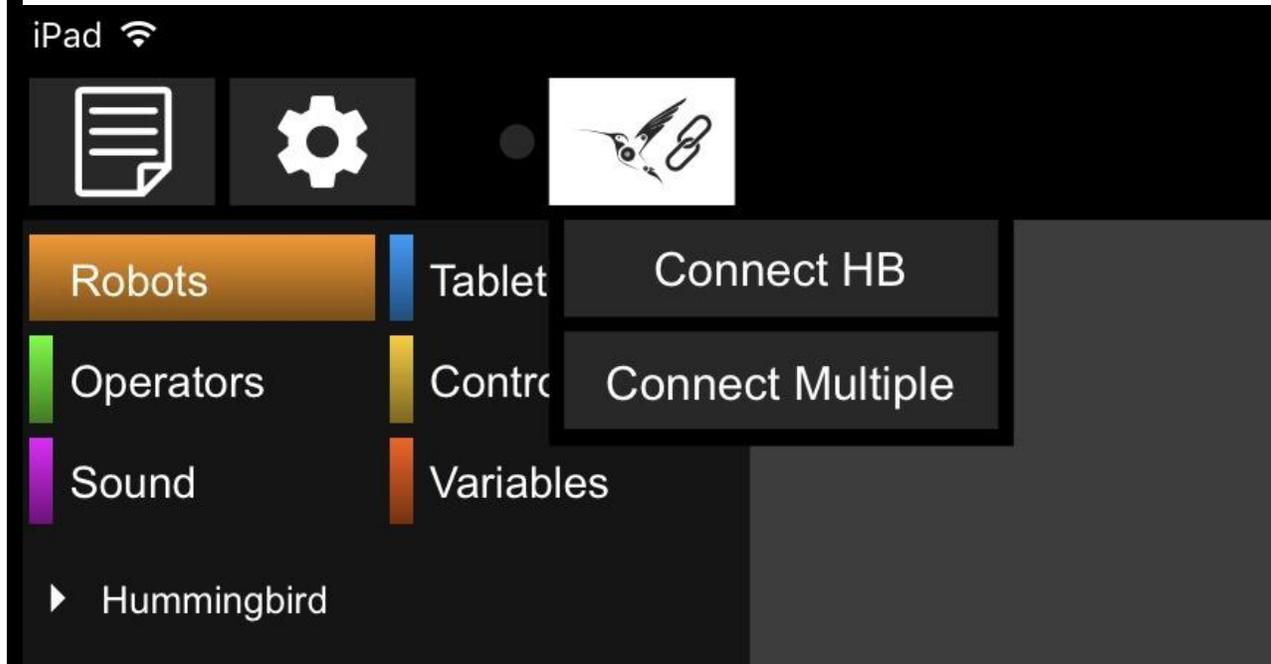


The wolf could not blow it down.

# LET'S PROGRAM

## Code A Light with Light Sensor

Coding is all about Patterns. If you can code a light with a light sensor, you can code any output with any sensor.



```

when green flag clicked
  repeat forever
    if Duo Light 1 < 30
      Duo Tri-LED 1 R 0 % G 100 % B 0 %
    else
      Duo Tri-LED 1 R 100 % G 0 % B 0 %
  
```

# THINK TIME

## Let's Reflect

- ♥ What was your favorite part about using the hummingbird circuit board today?
- ♥ Did you think they were easy or hard to program? Why?
- ♥ Did you and your group work well together?
- ♥ How do we identify cause and effect?



# CONNECTIONS

## DASD Curriculum & Standards

### Habits of Mind:

Persisting  
 Striving for Accuracy  
 Thinking & Communicating with Clarity and Precision  
 Applying Past Knowledge to New Situations  
 Thinking Interdependently  
 Questioning and Posing Problems

### DASD Curricular Connection/Standards:

ELA (Reading Modules 1, 2, 5, 6):  
 CC.1.2.5.E Use text structure, in and among texts, to interpret information (e.g., chronology, comparison, cause/effect, problem/solution).

### CSTA K-12 Computer Science Standards AP - Algorithms & Programming

IB-AP-08 Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

IB-AP-10 Create programs that include sequences, events, loops, and conditionals.

IB-AP-11 Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.

IB-AP-12 Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.

IB-AP-13 Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.

IB-AP-15 Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.

IB-AP-16 Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.

IB-AP-17 Describe choices made during program development using code comments, presentations, and demonstrations.