



AAIM 2017 littleBits



Making IT Happen with littleBits™

DHS High School Library Media Center & Makerspace

**Tressie Fowler, NBCT,
2016 Arkansas ISTE "Make IT Happen" Award Winner**

What are LittleBits?



example standards for a Grade 5 lesson :Grade 5: Common Core Standards

Math

CCSS.MATH.CONTENT.5.MD.A.1

Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

CCSS.MATH.CONTENT.5.OA.A.1

Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

CCSS.MATH.CONTENT.5.OA.A.2

Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.

CCSS.MATH.CONTENT.5.OA.B.3

Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

ELA

CCSS.ELA-LITERACY.RI.5.3

Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

CCSS.ELA-LITERACY.RI.5.7

Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

NGSS

Next Generation Science Standards

3-5-ETS1-1 Engineering Design

Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2 Engineering Design

Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5-ETS1-3 Engineering Design

Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

LittleBits Website :Educators: Lessons

~~WHEN I~~
~~CROW UP~~
I AM
~~GOING TO BE~~
AN INVENTOR.

Arkansas Regional Innovation Hub

Took coding club
students to the
Innovation Hub.



What are LittleBits?

LittleBits are essentially a **library** of electronics that snap together with magnets for prototyping, learning, and fun!



How
do
littleBits
fit
in
the
library?



littleBits Mobile App

littleBits Invent

[View More by This Developer](#)

By littleBits Electronics Inc.

Open iTunes to buy and download apps.



Description

The littleBits Invent app is your personal guide to unleashing creativity. Discover thousands of inventions, take challenges, control your inventions wirelessly, connect with the global littleBits community, access step-by-step tutorials, and easily upload and share your own creations. And if you have the Gizmos & Gadgets Kit, 2nd Edition,

[littleBits Electronics Inc. Web Site](#) ▶ [littleBits Invent Support](#) ▶

[...More](#)

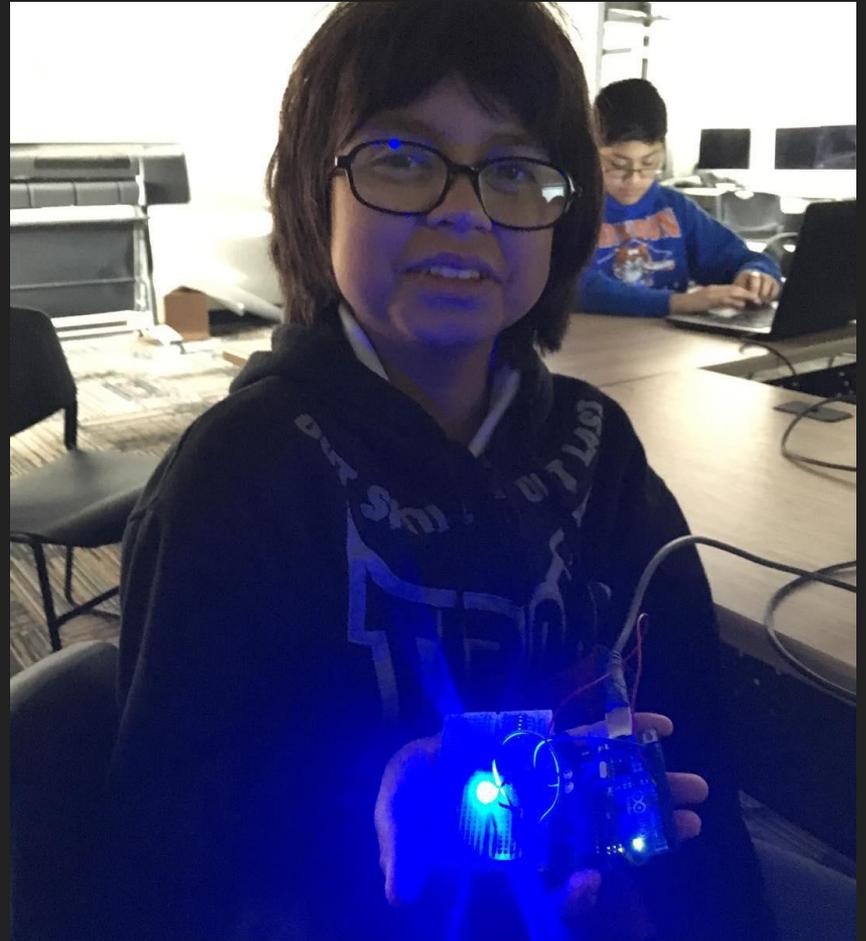
What's New in Version 1.6.5

– Miscellaneous bug fixes

littleBits Kits

- 1 Gizmos & Gadgets
- 4 STEAM Student Sets
- 2 Korg Synth Kit

Extra Materials:
Rubberbands, tape,
markers, cups,
scissors



1. COLOR CODED

You always need a **Blue** and a **Green**. **Pink** and **Orange** are optional in between.

2. Bits modules are grouped into four different categories, which are color coded:

POWER (BLUE) is needed in every circuit and the start of all your creations.

INPUT (PINK) modules accept input from you and the environment and send signals to the modules that follow.

OUTPUT (GREEN) modules DO something-light, buzz, move...

WIRE (ORANGE) modules expand your reach and change direction-great for helping to incorporate modules into your projects.

3. Order is important **Power** Modules always come first and **Input** Modules only affect the **Output** Modules that come after them.

4. Magnet Magic - littleBits modules snap together with magnets. The magnets are always right, you can't put modules together the wrong way.

5. The modules are just the beginning. Combine them with craft materials, building sets, and other toys to electrify your life.

Cost & Funding

littleBits SHOP

- ❖ Library Programming Budget
- ❖ [Scholastic Dollars Catalog](#)
- ❖ Grants
- ❖ Title I
- ❖ Awards
- ❖ 21st Century Learning Grant
- ❖ Professional Development
- ❖ Be creative (curriculum director, district accountant, principal, superintendent, joint-projects with other teachers)



Social Media's Role

- ❖ Awareness - sharing the awesomeness
 - Promoting
 - Advocating
- ❖ Evidence
 - TESS
 - Applications
- ❖ PLN's
 - Global reach
 - Two-way communication



Mrs. Fowler's Website

<https://goo.gl/W5Em7U>