Little Bits Challenge

About

Challenge cards develop a student's critical thinking and problem-solving abilities. This builds the basic skills that are required for Science, Engineering, and Design.

How to Play

- Print out the cards.
- Cut along the dotted lines.
- Fold the cards in half.
- Glue, tape or laminate the cards for durability.

The activity is structured into small tasks much the way video games challenge kids.

Once they complete a level they raise their hand and the teacher checks their circuit. If they have solved the objective the teacher gives them the next level card. If they haven't they need to try again. Each kid gets to work at their own pace.

Note there is no “correct” circuits...only correct solutions to the problems. And make sure they struggle...don’t make it too easy for them by telling them what to do. We tell computers and robots what to do, we need to teach our children how to learn.
Level 1
Make a blue light

Level 2
Make a buzzing noise

Level 3
Make a green light that flashes every second

Level 4
Make a blue light that you can adjust brighter or dimmer
**Level 5**

Make a red light that: turns on when a button is pressed and turns off when the button is released.

**Level 6**

Make a motor that turns on when you clap your hands.

**Level 7**

Make a buzzing sound that turns on and off quickly.

**Level 8**

Make an ambulance sound.
**Level 9**

Make a motor that turns on when you clap your hands and stays on until you clap your hands again (note at least a 3 second delay)

**Level 10**

Make a purple light that turns off after a short time

**Level 11**

Make a light that wraps around a pencil and turns off when a button is pressed

**Level 12**

Make a flashing red light and a buzzer that turns on and off quickly
Level 13
When a button is pressed a pink light turns off and a buzzer turns on

Level 14
Make a pencil that draws an arc on paper controlled by a slide switch

Level 15
Make something that moves around by itself

Level 16
Make something that claps when you clap your hands