

## Light-Up Cause and Effect Board

Shared by:

Jason Li MIT '27, Angel Garcia de la Cruz MIT '27, Wendian Wang Wellesley '27, Vy Pham MIT '27,

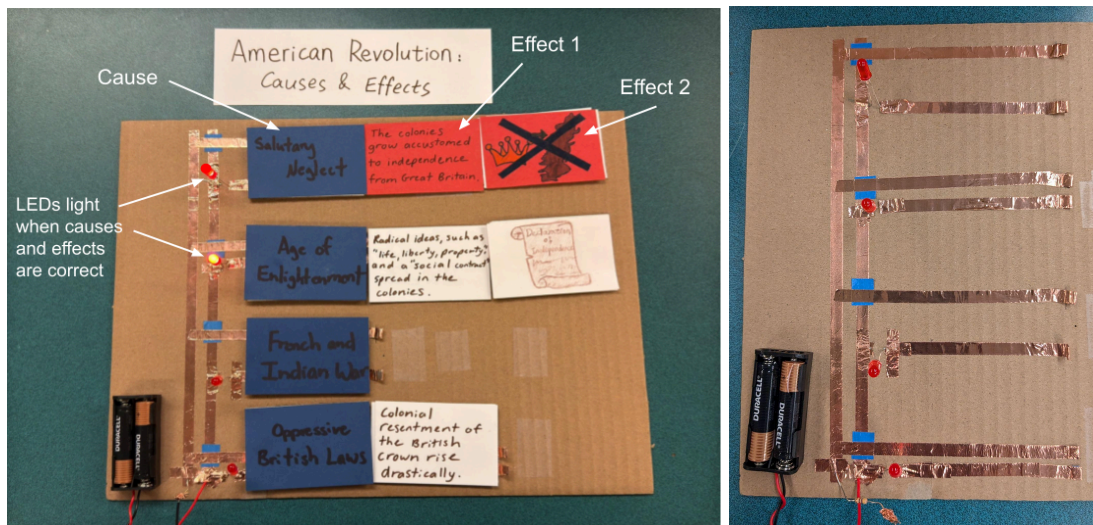
| Specialized tools and materials used:                  | Experience level required: |
|--------------------------------------------------------|----------------------------|
| Basic circuits: LEDs, copper tape, batteries, resistor | Beginner                   |

**Grade Level and Subject** (of this example): 6th-8th grade

**Topic/Content Standards** (for this example):

Science: simple series and parallel circuits [[HS-PS2-9](#)]

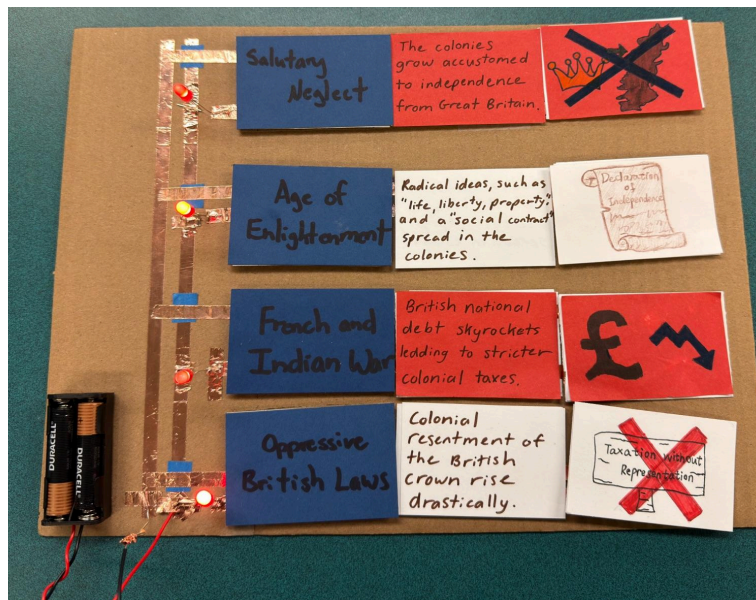
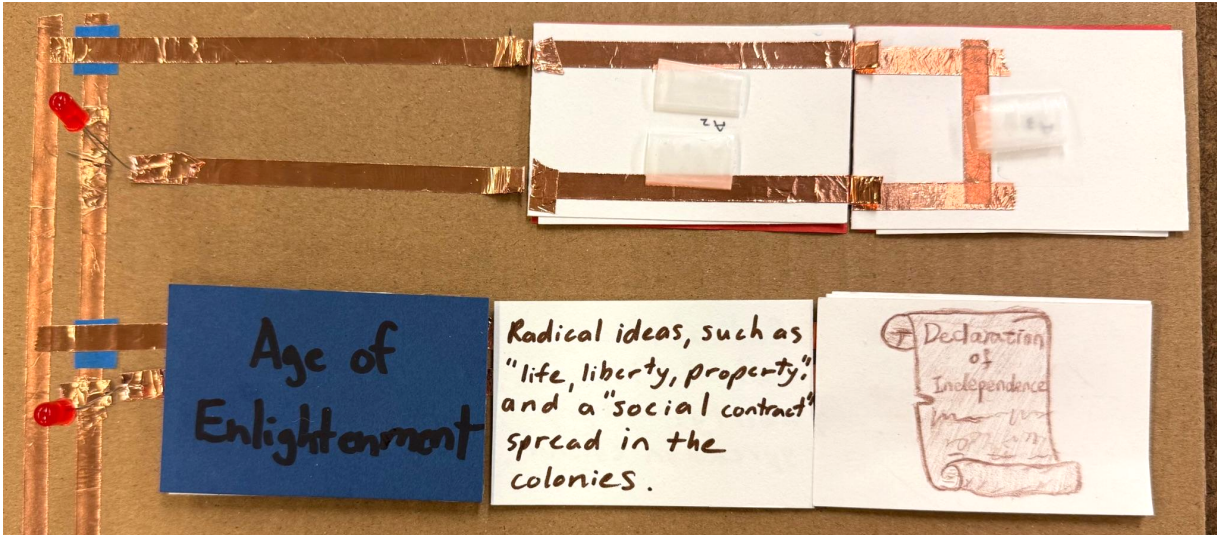
ELA: Analyze series of events [[RCA-H](#)]



### Summary of Project:

Students create light-up puzzle games centered around cause and effect relationships. For the LEDs to light, the puzzle solver must choose effects that result from the cause; when they are aligned correctly the circuit is completed. The copper tape conductors are spaced differently for each circuit so there is only one correct solution. Students can design the circuits in any way they want, as long as they light up when the pieces are correct.

In this example, students came up with four major causes of the American Revolution and their resulting effects in text and image form. Then they created simple circuits in parallel using copper tape, adhering them to the back of cut cardstock paper that would complete the circuit and light up the LEDs when correctly placed. To ensure an electrical connection, press down on the edges of the cardstock.



### Possible Content explorations [example MA Content Standards]

- **English Language Arts:**
  - Determine a text's central idea(s) and analyze its/their development over the course of the text [[RI.7.2](#)]
  - Analyze the interactions between individuals, events, and ideas in a text [[RI.7.3](#)]
- **Science:** Analyze how environmental and genetic factors influence the growth of organisms [[8.MS-LS1-5](#)]
- **Mathematics:** Analyze different properties of triangles powerful in proofs [[GEO.G-SRT](#)]