



## 1. Build-a-Gate Simulator (Digital Circuit Puzzle)

**Format:** Drag-and-drop web activity

**Objective:** Students construct simple logic circuits by dragging and connecting logic gates to match given output requirements.

**Example Scenario:**

"Create a logic circuit that outputs `True` only when *one* of the two switches is turned on."  
(Answer: Use an XOR gate)

**Tools:** Tynker, Scratch, or logic gate simulators like [Logic.ly](https://logic.ly)

## 2. Logic Gate Mystery Game

**Format:** Interactive branching story or chatbot

**Objective:** Students act as cybersecurity agents who must unlock digital doors using correct logic conditions.

**Example Flow:**

"The door is locked. The keypad says: 'Access if biometric scan is true **AND** password matches.'"

Student inputs: `True AND False` → "Access Denied"

Then they try `True AND True` → "Access Granted"

**Tools:** Use Twine, Google Forms with logic branching, or a simple web form with feedback

## 3. Real-World Logic Coding Sandbox

**Format:** Embedded Python code runner (e.g., Repl.it or Trinket)

**Objective:** Students modify the provided code to explore logic in action.

**Example Prompt:**

"The current login program allows only one try. Modify it to allow 3 attempts."  
(Then link them to the example in your "Password attempt loop")