UNIT: CIRCUITRY GAME

ACT-Based English: Writing a Game Circuit Troubleshooting Guide

### Here are ACT-aligned English activities for the Build Your Own Circuitry Game that help students develop real-world skills in editing technical writing, improving sentence clarity, and revising instructions for accuracy and logical flow in circuit design tasks.

### Objective:

Students draft a troubleshooting guide for common circuitry game issues.

MATERIALS NEEDED:

* Circuitry troubleshooting scenarios
* worksheet

Students Directions:

**Goal:**
You will use your English language and technical writing skills to create a clear, accurate, and logical troubleshooting guide that explains how to fix common issues in the Circuitry Game. You will write step-by-step solutions using precise language and revise your work based on peer feedback—just like real-world engineers and tech writers.

**STEP 1: Review Common Circuit Problems**

Read through each troubleshooting scenario provided on your worksheet. Pay close attention to the symptoms described and any clues that might point to the underlying cause (e.g., flickering lights, nothing turning on, confusing instructions).

For each scenario:

* Highlight or underline key problems.
* Make notes about what you think the issue might be (loose connection, incorrect polarity, too much resistance, etc.).

**STEP 2: Write a Step-by-Step Troubleshooting Guide**

For each issue, write **clear, numbered troubleshooting instructions** that could help someone fix the problem.
Use **precise technical vocabulary** and make sure your steps:

* Are ordered logically
* Use clear subject-verb-object structure
* Include “why” or “what to look for” explanations when helpful

 Example:
**Problem:** LED Flickers Sometimes
**Fix:**

1. Check all wire connections for looseness.
2. Ensure the resistor value matches your LED voltage requirements.
3. Replace the battery if connections are secure and flickering continues.

**STEP 3: Edit for Clarity and Precision**

Use the **ACT-style editing checklist** (provided) to revise your guide. Ask:

* Are the steps concise and easy to follow?
* Is the vocabulary appropriate for a technical reader?
* Do all instructions follow a logical flow?
* Have I avoided vague phrases like “thingy” or “stuff”?

**STEP 4: Peer Review**

Trade guides with a classmate. As you review their work:

* Highlight any unclear or vague instructions.
* Write 1–2 comments giving specific feedback using ACT-style grammar and clarity guidelines.
* Suggest transitions or step improvements where needed.

**STEP 5: Reflect & Discuss**

With your partner or group, discuss:

* Which problems were hardest to explain clearly?
* How does writing precise troubleshooting instructions help others succeed in building the circuit?
* What skills from this activity would be useful in a real engineering or tech job?

**Circuit Troubleshooting Scenarios (Simple Version)**

 **1. LED Flickers Sometimes**

* **What the student wrote:**
“When I press the button, the LED flashes sometimes. I think the battery is broken or the resistor is bad.”

 **2. Nothing Turns On**

* **What the student wrote:**
“I connected everything, but the LED doesn’t light up. The battery is fine, I think.”

 **3. Too Many LEDs**

* **What the student wrote:**
“I added four LEDs in a row. None of them turned on. It worked with just one LED before.”

 **4. Messy Instructions**

* **What the instructions say:**
“First put the resistor in. Then connect the LED to the negative side. Before that, add the battery. Then connect the wires.”

## ACT-Style Question:

## What is the most precise way to describe a loose connection issue?

## "Your game might not work right."

## "A loose wire may prevent current from flowing, causing the game to malfunction."

## "Check if your wires are where they should be."

## "Sometimes things just stop working."

## **⚡ Why These Activities and Questions Matter**

By engaging in English-based activities connected to the Build Your Own Circuitry Game, students:

✅ Practice revising technical writing for clarity, conciseness, and grammatical accuracy.
✅ Strengthen their ability to edit instructions, descriptions, and troubleshooting steps in circuit design.
✅ Develop communication skills essential for explaining complex ideas with logical flow and precision.

These skills mirror the ACT English requirements—helping students become confident, effective communicators, prepared for college-level writing and STEM-related documentation.