UNIT: CIRCUITRY GAME

ACT-Based Reading: Analyzing a Technical Manual

### Here are ACT-aligned reading activities for the Build Your Own Circuitry Game that help students strengthen comprehension, analyze technical texts, and interpret cause-and-effect relationships in circuit design and electrical systems.

### Objective:

Students analyze a technical manual for clarity and accuracy.

MATERIALS NEEDED:

* Sample game kit manual
* worksheet

Student Directions:

**Goals:**  
You will read and analyze a technical manual to understand how written and visual instructions work together to explain a circuit design. This activity will help improve your comprehension of technical texts and prepare you for ACT-style reading questions.

**STEP 1: Read the Technical Manual**

* Carefully read the **sample manual** included in your kit.
* Highlight or underline important information such as:
  + Names of components (resistor, LED, battery, switch)
  + Step-by-step assembly instructions
  + Safety tips or warnings
  + Any definitions or diagrams provided

*Goal: Pay attention to how instructions are sequenced and whether they are clear and complete.*

**STEP 2: Identify Key Assembly Steps**

* On your worksheet, list the **main steps** required to build the game circuit in the order they appear in the manual.
* Note if any steps seem **vague, out of order, or unclear**.

Example: Does the manual tell you to connect power before installing components? Is that safe or logical?

**STEP 3: Compare the Manual to the Circuit Diagram**

* Locate the **circuit diagram** in the manual.
* Use it to visually trace each step of the circuit setup described in the text.

On your worksheet, match each written step to the part of the diagram it refers to.

* If something in the diagram doesn’t match the instructions, **mark it** and explain the difference.

**STEP 4: Summarize the Manual**

* In your own words, write a short paragraph summarizing:
  + What the manual teaches you
  + What parts of the manual were helpful
  + Any confusing or missing information
  + How the written instructions and diagrams work together

**STEP 5: Reflect and Discuss**

* With a partner or in small groups, discuss:
  + How clear was the manual overall?
  + Why is accuracy in a technical manual important in engineering or science?
  + How could you improve this manual for a beginner?

## ACT-Style Question:

## What is the purpose of a wiring diagram in a technical manual?

## To provide an artistic representation of components

## To show the logical flow of electricity

## To list all required tools

## To replace written instructions

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

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

✅ Practice identifying key ideas and technical details in circuit design documents and user manuals.  
✅ Strengthen their ability to comprehend and evaluate cause-and-effect relationships in electrical systems.  
✅ Develop analytical reading skills by synthesizing information from multiple technical sources.

These skills mirror the ACT Reading requirements—helping students become confident, critical readers prepared for college-level science texts and careers in STEM.