

## UNIT: ELECTRICAL CIRCUITS

# ACT-BASED READING: ANALYZING A SCIENTIFIC ARGUMENT – SERIES VS. PARALLEL CIRCUITS

## READING-BASED ACTIVITIES AND ACT-STYLE QUESTIONS TO REINFORCE SKILLS

## OBJECTIVE:

Help students compare different viewpoints and evaluate explanations.

## STUDENT DIRECTIONS:

**Goal:**

Evaluate two different perspectives on **series vs. parallel circuits** by identifying key ideas, supporting details, and drawing conclusions based on evidence.

**Step 1: Read Both Excerpts Carefully**

You will be given **two short excerpts** that express different opinions about using **series** and **parallel** circuits:

- **Excerpt 1: In Favor of Series Circuits**

*Series circuits are simple and cost-effective. You only need one path for electricity to flow, which makes them easy to build and understand. They're perfect for basic devices like flashlights where all components need to turn on or off together.*

- **Excerpt 2: In Favor of Parallel Circuits**

*Parallel circuits are much more reliable. If one component stops working, the others can still function. They're ideal for homes and classrooms where lights and devices need to work independently.*

*Read each passage slowly. Underline or highlight key points made by each author.*

## Step 2: Answer the Discussion Questions

In your notebook or class discussion group, answer the following:

1. **Main Argument (Key Ideas & Details):**
  - a. What does each author believe is the better circuit type?
  - b. What reasons do they give?
2. **Support and Reasoning (Craft & Structure):**
  - a. What kind of evidence or examples does each author use to support their claims?
  - b. Are the tone and style formal, persuasive, or factual?
3. **Conclusion (Integration of Knowledge):**
  - a. Which circuit type would be better for wiring a house or building?
  - b. Which argument do you find more convincing, and why?

## Step 3: Write Your Argument (Extension Task)

Write a **short paragraph (4–6 sentences)** that answers the following:

- Based on the excerpts, which circuit type—**series** or **parallel**—do you think is better overall? Use at least two pieces of evidence from the readings to support your reasoning. Use transition words like “according to the author,” “in contrast,” or “this shows that...”

## ACT-STYLE MULTIPLE CHOICE QUESTION:

### Question 1 (Integration of Knowledge and Ideas):

- Which of the following best describes the key difference between series and parallel circuits as discussed in the excerpts?
  - A. Series circuits are more complex than parallel circuits.
  - B. Parallel circuits stop functioning if one component fails.
  - C. Series circuits use less wiring but are less reliable.
  - D. Parallel circuits are mainly used in low-power devices.

## Bonus: Cross-Curricular Writing Prompt

### Prompt:

*"Imagine you are an electrical engineer designing circuits for a new building. Would you choose series or parallel circuits? Write a short essay explaining your choice, using scientific reasoning and real-world applications."*