

# Understanding Computer Components

**Title:** Build Your Own Computer Model

**NGSS or ISTE Standard:** ISTE Standard 4: Innovative Designer (4b)

**Grade Level:** 6th–7th

**Project Duration:** 2 days

**Objective:**

Students will create a labeled model of a computer, including its key components, to demonstrate their understanding of how these parts work together.

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## MATERIALS NEEDED:

- Cardboard or foam board (for the base of the model)
- Colored paper or printable templates of computer components
- Scissors, glue, tape
- Markers, pens, or pencils
- Labels or sticky notes
- A diagram of a computer as a reference
- Internet-enabled devices (optional, for research)

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## PROCEDURE:

### Day 1: Introduction and Planning

1. **Review Computer Components:**
  - Begin with a brief recap of the main parts of a computer (e.g., CPU, RAM, storage, motherboard, power supply, peripherals).
  - Show a labeled diagram or video explaining how these parts work together.
2. **Design Your Model:**
  - Provide students with templates or guide them to sketch the components they will include in their model.
  - Encourage them to decide how they will lay out the components on their board to resemble the inside of a computer.
3. **Start Building:**
  - Students cut out shapes to represent the components.
  - Begin attaching these shapes to their cardboard or foam board base.

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### Day 2: Building and Presentation

1. **Complete the Model:**
  - Add labels to each component and write a short description of its function.
  - Ensure all components are connected to show their relationship (e.g., wires or lines connecting the motherboard to other parts).
2. **Present the Model:**
  - Students present their models to the class, explaining the role of each component.
  - Encourage questions and discussion to deepen understanding.

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## ASSESSMENT CRITERIA:

- **Completeness:** All major components are included and labeled.
- **Accuracy:** Descriptions of each component's function are correct.
- **Creativity:** The model is neat and visually appealing.

- Presentation: The student can clearly explain how the parts work together.
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**EXTENSIONS:**

- Advanced students can research and include additional components, such as GPUs or cooling systems.
  - Students can compare their model to modern devices like laptops, tablets, or smartphones.
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**NOTES:**

**Safety Precautions:**

No actual computer hardware will be used in this project to ensure safety and avoid damage to equipment.

**Accommodations:**

- For ELL students: Use visual aids and bilingual labels if needed.
- For ESE students: Provide step-by-step instructions and pair them with a peer for support.
- For advanced students: Allow them to create a 3D model using software like Tinkercad or conduct additional research on hardware advancements.