

# WRITING:

## **ACT Writing Alignment – Autonomous Vehicle**

### **Technical Communication & Argumentative Writing**

Technical communication is a fundamental skill in robotics. Students will engage in structured writing tasks, such as summarizing research findings, composing technical manuals, and formulating arguments about the ethical implications of self-driving cars. By refining their ability to organize information logically and use precise language, students will develop their ability to communicate complex ideas effectively.

### **Potential ACT Writing Standards Covered in this Unit**

This unit connects to ACT Writing skills in five key areas:

#### **ACT Writing Rating Scale – Clarity & Argument Development**

- 1. (16–19): Identifying main ideas in technical topics**
  - Summarizes basic concepts about robotic car movement or function.
  - Identifies key terms like “sensor,” “speed,” or “navigation” without deep explanation.
  - May list ideas rather than explain them in structured paragraphs.
- 2. (20–23): Organizing logical explanations**
  - Presents a logical order of ideas related to robotic systems.
  - Begins to explain how parts of the robotic car function together (e.g., how sensor input affects movement).
  - Uses transitions and topic sentences, though inconsistently.
- 3. (24–27): Developing clear and concise arguments**
  - Constructs a central argument about robotic efficiency, performance, or innovation.
  - Supports claims with clear examples from robotic trials or programming logic.
  - Shows control over sentence structure and technical vocabulary.
- 4. (28–32): Evaluating multiple perspectives in written analysis**
  - Compares different approaches to robotic car design, such as manual vs. sensor-guided navigation.
  - Analyzes pros and cons of programming techniques or hardware options.
  - Uses precise and varied language to maintain clarity and coherence.

**5. (33–36): Crafting well-structured and evidence-based arguments**

- Synthesizes ideas from robotics experiments, data interpretation, and design thinking.
- Constructs an argument supported by evidence from multiple sources (e.g., trial results, sensor feedback, performance logs).
- Demonstrates sophisticated control of organization, tone, grammar, and technical accuracy.

**Why This Matters for ACT Preparation?**

By engaging in robotics-based writing tasks connected to the Robotic Car Kit, students:

- ✓ Practice articulating ideas clearly about how robotic systems function, including movement, sensors, and programming logic.
- ✓ Strengthen skills in organizing technical explanations and developing coherent arguments about robotic efficiency, design, or innovation.
- ✓ Analyze and compare different navigation methods, evaluate test results, and support claims with evidence from experimentation.

These writing-focused activities mirror the **ACT Writing** emphasis on **clarity, argument development, and structured reasoning**. Students improve their ability to explain complex technical systems, craft evidence-based responses, and write persuasively—essential for ACT success and future communication in STEM careers.