

# READING:

## **ACT Reading Alignment – Autonomous Vehicle**

### **Comprehension & Technical Analysis**

Reading comprehension is essential for understanding complex technical content in robotics. Students will analyze informational texts on sensor technology, self-driving vehicle ethics, and system troubleshooting. They will practice critical reading strategies to interpret key details, compare different viewpoints, and evaluate how textual evidence supports claims about autonomous vehicle technology.

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

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

#### **ACT Reading Rating Scale – Analytical & Technical Understanding**

**1. (16–19): Identifying main ideas and details**

- Recognize the primary purpose of a robotics experiment or article.
- Locate supporting details about robotic systems, experiments, or findings.
- Summarize basic information from technical texts.

**2. (20–23): Understanding technical vocabulary in robotics**

- Interpret specialized terms like "sensor calibration," "motor torque," and "autonomous navigation."
- Use context clues to understand unfamiliar robotics-related terminology.
- Distinguish between general and technical meanings of words.

**3. (24–27): Evaluating logic and organization in technical documents**

- Analyze the sequence of steps in a robotic programming guide or experimental report.
- Evaluate the logical flow of procedures, data collection, and conclusions.
- Identify gaps or inconsistencies in technical explanations.

**4. (28–32): Analyzing complex research studies**

- Break down multi-step robotic experiments involving multiple variables.
- Interpret detailed research designs, including controls and dependent variables.
- Compare experimental results across trials to identify trends and anomalies.

**5. (33–36): Synthesizing multiple sources for design improvements**

- Integrate information from various readings, research articles, and data sets to improve robotic performance.
- Propose enhancements to robotic systems based on combined evidence.
- Critically assess conflicting viewpoints or approaches to robotics challenges.

**Why This Matters for ACT Preparation?**

By engaging in science-based investigations connected to the Robotic Car Kit, students:

- ✓ Explore real-world scientific concepts such as motion, force, sensor technology, and data collection.
- ✓ Practice interpreting experimental results from robotic navigation tests, acceleration measurements, and obstacle course challenges.
- ✓ Strengthen skills in identifying variables, analyzing trends, evaluating experimental setups, and drawing conclusions based on sensor and movement data.

These hands-on, robotics-based activities mirror key ACT Science skills—such as interpreting experiments, analyzing data, understanding scientific investigations, and applying critical reasoning. Students gain practical experience with experimental design and analysis, helping them build confidence for ACT success and future STEM careers in fields like robotics, engineering, and technology innovation.