TRAC™
Leading by Example

This module meets the following National Standards of Learning for grades 9-12.

National Science Education Standards

Science and Technology

- Abilities of technological design

- Understandings about science and technology

Technology Foundation Standards

Basic Operations & Concepts

- Students demonstrate a sound understanding of the nature and operation of technology systems

- Students use technology tools to enhance learning, increase productivity, and promote creativity

- Students use technology resources for solving problems and making informed decisions

- Students employ technology in the development of strategies for solving problems in the real world

International Technology Education Association Standards For Technological Literacy

The Nature of Technology

Standard 3: Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study

Design

Standard 8: Students will develop an understanding of the attributes of design

Standard 9: Students will develop an understanding of engineering design

Standard 10: Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving

Abilities of a Technological World

Standard 11: Students will develop abilities to apply the design process

The Designed World

Standard 18: Students will develop an understanding of and be able to select and use transportation technologies

TRAC PAC 2

This module contains three (3) activities to teach students to observe real life transportation ecosystems, learn about manual and technology-based vehicle applications, and demonstrate the case for and use of Connected and Automated Vehicles (CAV) technology using scientific principles, programming, and coding using a Sphero RVR programmable robot.

Activities

Activity 1:
Observing Modes and Interactions in a Transportation Ecosystem

Activity 1 demonstrates to students the complexities of a transportation ecosystem and the infrastructure needed to support it.

Activity 2:
Manual Driving versus Connected and Automated Driving Using Sphero RVR in your Ecosystem

Activity 2 demonstrates to students the difference between operating a manually driven vehicle and operating a connected and automated vehicle using programming and coding.
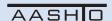
Activity 3:
Applying Connected and Automated Vehicle Technology with Sphero RVR

Activity 3 demonstrates to students the safety and mobility benefits that can be realized when vehicles are connected and communicating with each other.

TRAC™ (TRAnsportation and Civil engineering) is a hands-on education outreach program designed for use in science, math, technology, and social science classes. By engaging students in solving real-world problems, sending volunteer mentors in the classroom, and supplying teachers with the needed materials. TRAC connects K-12 students to the working world of transportation professionals and civil engineers, and inspires them to consider careers in these fields. TRAC PAC 2 is designed for students in middle school and high school. Rides K–8 introduces elementary school students to basic transportation concepts.

Visit **www.tracrides.transportation.org** to learn more about the TRAC program.

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