

## Transportation and Sustainability

Sustainable transportation is how we move ourselves from one place to another without depleting the world's resources. Understand how community design influences our transportation habits and contribute to greenhouse gas emissions. We need systems in place that make it easy to achieve and sustain personal change. Students will look at community design related to transportation and the design of the machines, cars, and bikes we use to transport ourselves.

### Next Generation Science Standards:

#### ETS1.B: DEVELOPING POSSIBLE SOLUTIONS

Complicated problems may need to be broken down into simpler components in order to develop and test solutions.

#### ETS2.A: INTERDEPENDENCE OF SCIENCE, ENGINEERING, AND TECHNOLOGY

The fields of science and engineering are mutually supportive, and scientists and engineers often work together in teams, especially in fields at the borders of science and engineering

#### ETS2.B: INFLUENCE OF ENGINEERING, TECHNOLOGY, AND SCIENCE ON SOCIETY AND THE NATURAL WORLD

Modern civilization depends on major technological systems, including those related to transportation. Engineers continuously modify these technological systems by applying scientific knowledge and engineering design practices to increase benefits while decreasing costs and risks.

### Lessons:

1. Guest Speaker Presentation: Look at community design strategies city planners and transportation engineers are using to insure safe and healthy transportation options. The principles taught in this presentation serve as a discussion starter or launching point for a walking audit or community review process.
2. Walk Audit: Join with Transportation Engineers and other community stakeholders for a mapping activity and walking field trip to evaluate the walk and bike ability of the area on and around campus. (*Some restrictions may apply*)
3. Community Improvement Activity: Students combine knowledge from the presentation with information gathered in the audit process to redesign their community and improve access for sustainable transportation. Students share design solutions with classmates and community stakeholders. (*Some restrictions may apply*)
4. Literature Review: Students read current event articles and information related to sustainable transportation and participates effectively in collaborative discussions with diverse partners building on others' ideas and expressing their own clearly and persuasively. (follow up homework assignment)

*Additional supplemental activities available upon request.*