



How Fast Can You Go? Vehicle Efficiency - Curriculum Connections

Suggested Grades: K-5

Curriculum Connections: Matter (Gr 1, 2), Energy (K-5), Computer Science (K, 1, 3, 4), Scientific Methods (Gr 1-5)

Specific Learning Outcomes:

Kindergarten

- *Energy* - Children explore movement of objects, humans, and other animals (objects).
- *Computer Science* - Children interpret instructions in various environments.

Grade 1

- *Matter* - Students analyze properties of objects and investigate how they can be changed (measurements, e.g., length of distance travelled).
- *Energy* - Students investigate direction, pathway, and speed of moving objects and animals (movement can be influenced by shape, texture of object; wheels make objects easier to move).
- *Computer Science* - Students follow instructions and relate them to outcomes.
- *Scientific Methods* - Students engage in and describe investigation (data collection).

Grade 2

- *Matter* - Students investigate properties of materials and relate them to a purpose (materials used to make objects).
- *Scientific Methods* - Students examine investigation and explain how it is influenced by purpose (methods/processes used in investigation, data collection).

Grade 3

- *Energy* - Students investigate and explain how forces affect the movement of objects (force and movement, simple machines, elastic/spring, friction).
- *Computer Science* - Students investigate creativity and its relationship to computational thinking (creativity is an important part of engineering).
- *Scientific Methods* - Students relate investigation to building knowledge (data can be used to analyze and improve design).



Grade 4

- *Energy* - Students investigate how forces can act on objects without contact (forces and objects - gravity).
- *Computer Science* - Students examine and apply design processes to meet needs (testing, troubleshooting).
- *Scientific Methods* - Students investigate evidence and reflect on its role in science (how evidence can advance knowledge in science, data types).

Grade 5

- *Energy* - Students investigate and compare how forces affect living things and objects in water and air (thrust and drag).
- *Scientific Methods* - Students investigate how evidence is gathered and explain the importance of ethics in science (variables can be controlled or changed).