

GRADE 4 SCIENCE

Energy

ENERGY IS ALL AROUND US

In this unit, your child will explore the concept of energy, often defined as "the ability to do work." Energy is how things change and move. It's everywhere around us and takes many forms. It takes energy to cook food, to drive to school, and to jump in the air. There are different forms of energy, such as heat energy, light energy, and sound energy.

We can observe energy in our natural environment. A moving car, heating soup, pushing a shopping cart, a leaping frog, lightning, melting ice cream, these are all examples of how energy is all around us.



WHERE DID MY ENERGY GO??

Did you know that energy can be transferred from place to place by sound, light, heat, and electric current? Energy transfer takes place when energy moves from one place to another. Energy can move from one object to another, like when the energy from your moving foot is transferred to a soccer ball! In this unit, your child will use evidence to construct an explanation relating to the transfer of energy.

You can support their curiosity by observing how energy is used in your home. You can experiment with energy changes with this [resource](#) from NSTA.

How much energy do you think it takes to jump in the air?

VROOM, VROOM!!

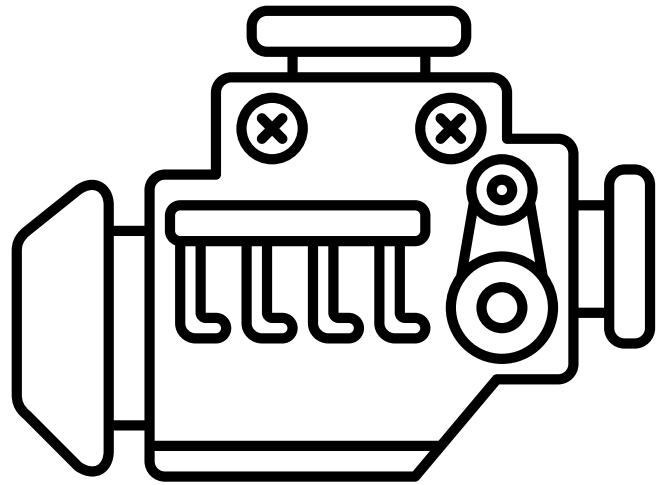
In this unit, your child will get to act like an engineer and use the engineering & design process to develop a solution to a real world problem. They will use their knowledge about energy and energy transfer to build a vehicle that uses an alternative energy source to travel a short distance. The car industry continues to evolve, from cars that require gas, hybrid cars, to now cars that are completely electric! No engine, no problem!

CONSERVING ENERGY, PROTECTING OUR PLANET

We use earth materials as fuel to provide the energy we need to make our lives easier. This has many negative impacts on our global environment. It is important to do our part to ensure that we use energy responsibly. Things like turning off the lights when we leave a room, walking to school instead of driving, placing a lid on your pot or pan (which can reduce energy use by 60 -70 %) are ways in which we can use energy more efficiently. Conserve energy and protect our planet!



Prepare•Empower•Inspire



Can you design a vehicle that uses an alternative energy source to travel a short distance?



READERS' CORNER

Here are some articles to learn more about Energy, including Energy Transfer and conservation, available on Newsela:

The Transfer of Thermal Energy can occur in three ways, by National Geographic Society

Start your Engine, by Andy Boyles

Ten Interesting Things about Energy, by NASA, adapted by Newsela

Matter and Energy: What is Matter?, by Newsela