
STEM Lab – 7th Grade

Science – Technology – Engineering - Math

Everyday Energy and Technology

Technology & energy is all around us. Students will investigate how energy is transferred in different activities ranging from bungee jumping to sports. They understand how STEM makes those experiences safer and more enjoyable. Students are challenged to think big and toward the future as they explore sustainable solutions to our energy needs and investigate the impact of energy on our lives and the world. With the use of technology students will investigate how the human body extracts energy from foods and how that energy is used in physical activities. Students will also experience technology in a whole new light through computer programming.

Knowledge and Skills

It is expected that students will:

- Describe why STEM is important to them.
- Describe the role computer science has on developing students’ computational and critical thinking skills and explain how to create, not simply use, new technologies.
- Describe the six main forms of energy; including solar or light radiation, thermal, electrical, mechanical, chemical, and nuclear.
- Differentiate between potential and kinetic energy.
- Using technology to measure human movement and measure speed and acceleration.
- Demonstrate ways to increase the efficiency of energy used in homes and at school.
- Use the design process to design, model, test and solve a problem.
- Calculate power and work by measuring force, distance, and time using the wind turbine model.
- Describe the roles and responsibilities of STEM professionals for high demand technological careers. Graph data that represents energy consumption, energy imports, and energy production.
- Differentiate between conduction, convection, and radiation as forms of energy transfer.
- Compare the temperature of different materials to determine which are better at preventing heat transfer.

Activities and Projects

Energy Symposium	Toy Design	Sports Science
Zip-Line	Heart Dissection	Wind Turbines
Video game creation	Infrared/Hyper Warm	Bungee Jump

Grading

A = 90%-100%
B = 80% - 89%
C = 70% - 79%
D = 60% - 69%
U = 59% and lower

Grading Breakdown

Activities	25%
Projects	40%
Tests	25%
Initiative	10%

- S** ~ Stay Positive
- T** ~ Think Critically
- E** ~ Embrace the Challenge
- M** ~ Manage your time appropriately