Unit Title: Energetic Connections	**Duration:** 9 weeks

Objective:
TLW: Develop an understanding of energy and its relationship to matter
as well as energy transformations. They will experiment with forms of potential and kinetic energy.

Standards: P.EN.M.1, P.EN.06.11, P.EN.06.12, P.EN.M.4, P.EN.06.41, P.EN.06.42, P.CM.M.1, P.CM.06.11 P.CM.06.12, S.IP.M.1, S.IP.06.11, S.IP.06.12, S.IP.06.13, S.IP.06.14, S.IP.06.15, S.IP.06.16, S.IA.M.1, S.IA.06.11, S.IA.06.12, S.IA.06.13, S.IA.06.14, S.IA.06.15, S.RS.M.1, S.RS.06.11, S.RS.06.12, S.RS.06.13, S.RS.06.14, S.RS.06.15, S.RS.06.16, S.RS.06.17, S.RS.06.18, S.RS.06.19

Literacy Activities:
- Close Reading
- Pair Share
- Student /Teacher think aloud
- Contextual problem solving
- Scientific Writing using claim evidence and reasoning
- Guided note taking

Skills:
- Make observations and identify energy transformations
- Raise questions
- Design and Conduct scientific investigations of potential and kinetic energy
- Use appropriate tools and metric measurements
- Describe energy transfer involved in mechanical, electrical, and magnetic devices
- Demonstrate changes in states of matter and how mass stays the same as matter changes states

Vocabulary:

Absorb	Energy Transfer	Motion of molecules
Arrangement of molecules	Evidence	Potential energy
Atom	Food energy	Radiation
Chemical Energy	Force	Reasoning
Claim	Gases	Reflect
Closed system	Gram	Solar energy
Conduction	Gravitational potential	Solids
Conservation of energy	Heat energy	State of matter
Conservation of mass	Heat transfer	Thermal Contraction
Conserved	Kinetic energy	Thermal expansion
Convection	Liquids	Transformation
Data	Mass	Variables
Elastic potential energy	Molecules	Weight
Energy	Motion	

Unit Title: Planet Rock	**Duration:** 9 weeks

Objective:
TLW: Explain plate tectonic movement, layers of the Earth, and how a compass relates to the magnetic field of the Earth and use minerals and the rock cycle to compare and contrast the formation of rock types, compare and classify soils, explain how soils are formed, and relate the importance of soil to people.

Standards: E.SE.M.4, E.SE.06.41, E.SE.M.1, E.SE.06.11, E.SE.06.12, E.SE.6.13, E.SE.06.14, S.IP.M.1, S.IP.06.11, S.IP.06.12, S.IP.06.13, S.IP.06.14, S.IP.06.15, S.IP.06.16, S.IA.M.1, S.IA.06.11, S.IA.06.12, S.IA.06.13, S.IA.06.14,S.IA.06.15, S.RS.M.1, S.RS.06.11, S.RS.06.12, S.RS.06.13, S.RS.06.14, S.RS.06.15, S.RS.06.16, S.RS.06.17

Literacy Activities:
- Close Reading
- Pair Share
- Student /Teacher think aloud
- Contextual problem solving
- Scientific Writing using claim evidence and reasoning
- Guided note taking

Skills:
- Make observations of rocks and look for evidence of minerals
- Use models to demonstrate the rock cycle
- Demonstrate and explain weathering and erosion through the use of glacial and lava flow models
- Investigate particle size of different sediments and their effect on the movement of water
- Separate soil sediments based on particle size and density
- Describe soil as a mixture of sediments, decomposed organic material, and living organisms
- Analyze data from models to explain scientific concepts
- Generate questions and plan investigations through observations of rocks, weathering, and erosion
- Use appropriate tools and metric measurements

Vocabulary:

Chemical weathering	Igneous rock	Rock
Clay	Lava	Rock Cycle
Constructive forces	Magma	Sand
Cycle	Metamorphic rock	Sediment
Destructive forces	Mineral	Sedimentary rock
Erosion	Organic material	Silt
Glacial abrasion	Particle size	Soil
Glacial plucking	Physical weathering	Thermal contraction
Glacier	Pressure	Thermal expansion
Gravel	Properties	Weathering
Humus		

Unit Title: Earth: Yesterday, Today, and Tomorrow	**Duration:** 9 weeks

Objective:
TWL: Describe the Earth as having its own magnetic field and the Earth is made of three distinct layers core, mantle, and crust and that major geological events result from lithospheric plates. Fossils and rock layers give evidence for measuring geological time and the changes that have occurred.

Standards: E.SE.M.5, E.SE.06.51, E.SE.06.52, E.SE.06.53, E.SE.M.6, E.SE.06.61, E.SE.06.62, E.ST.M.3, E.ST.06.31, E.ST.M.4, E.ST.06.41, E.ST.06.42, S.IP.M.1, S.IP.06.11, S.IP.06.12, S.IP.06.13, S.IP.06.14, S.IP.06.15, S.IP.06.16, S.IA.M.1, S.IA.06.11, S.IA.06.12, S.IA.06.13, S.IA.06.14, S.IA.06.15, S.RS.M.1, S.RS.06.11, S.RS.06.12, S.RS.06.13, S.RS.06.14, S.RS.06.15, S.RS.06.19

Literacy Activities:
- Close Reading
- Pair Share
- Student /Teacher think aloud
- Contextual problem solving
- Scientific Writing using claim evidence and reasoning
- Guided note taking

Skills:
- Describe the layers of the Earth
- Explain tectonic plates that make up the Earth
- Use models to describe the divergent plate boundaries, convergent plate boundaries, and transforming plate boundaries
- Explain the movement of tectonic plates and how the movement causes the major geological events and build models of how earthquakes and volcanic eruptions occur
- Usde compases to explain the Earth's magnetic field
- Describe how scientists use fossils and layers of rocks to explain the history of the Earth
- Analyze information from data and graphs to answer questions about the movement of plate tectonic, earthquakes, and volcanoes
- Describe how science and technology have advanced the knowledge of plate tectonics
- Compare fossils of organisms to those that exist today

Vocabulary:

Ancient life forms	Latitude	Navigation
Compass	Lithosphere	Oceanic plates
Continental plates	Lithospheric plates	Plate tectonics
Convecting mantle	Longitude	Pole
Crust	Magnet	Relative dating
Earth Process	Magnetic field	Rock
Earthquake	Magnetic north	Rock Layers
Environmental conditions	Magnetize	Sedimentary rock
Extinct	Magnitude	Timeline
Faults	Metallic core	Upper mantle
Fossil	Modern life forms	Vibrations
Geological events	Mountain building	Volcanic eruptions
Geological history		

Unit Title: Energy in the Ecosystem	**Duration:** 9 weeks

Objective:
TLW: Classify organisms, based on their relationships within the ecosystem, as producers, consumers, or decomposers. The will understand that the ecosystem is fragile and that all organisms have an impact on the ecosystem.

Standards: L.OL.M.5, L.OL.06.51, L.OL.06.52, L.EC.M.1, L.EC.06.11, L.EC.M.2, L.EC.06.21, L.EC.06.22, L.EC.06.23, L.EC.M.3, L.EC.06.31, L.EC.06.32, L.EC.M.4, L.EC.06.41, L.EC.06.42, S.IP.M.1, S.IP.06.11, S.IP.06.12, S.IP.06.13, S.IP.06.14, S.IP.06.15, S.IP.06.16, S.IA.M.1, S.IA.06.11, S.IA.06.12, S.IA.06.13, S.IA.06.14, S.IA.06.15, S.RS.M.1, S.RS.06.11, S.RS.06.12, S.RS.06.13, S.RS.06.14, S.RS.06.15, S.RS.06.16, S.RS.06.17, S.RS.06.18, S.RS.06.19

Literacy Activities:
- Close Reading
- Pair Share
- Student /Teacher think aloud
- Contextual problem solving
- Scientific Writing using claim evidence and reasoning
- Guided note taking

Skills:
- Explain and compare the role of organisms in ecosystem
- Describe and illustrate the relationships of organisms within an ecosystem
- Describe populations, communities, and ecosystems in the Great Lake region.
- Conduct research on selected ecosystem and describe the populations and communities within the ecosystem
- Identify patterns in data collected from various ecosystems
- Construct charts and graphs that show populations changes within ecosystems
- Describe how humans and other organisms have an effect on the balance of an ecosystem
- Conduct and present research of invasives species in the Great LAkes region
- Use online simulators to explain the diversity and interdependence of organisms in an ecosystem

Vocabulary:

Abiotic components	Endangered species	Predator
Balance in an ecosystem	Environmental impact	Prey
Biotic components	Food web	Producers
Climate Change	Habitat destruction	Resource depletion
Community	Invasive species	Source of energy
Competition	Mutualism	Species
Consumers	Parasitism	Species extinction
Decomposers	Pollution	Symbiosis
Ecosystem	Population	