

School District of Loyal
Physical Science
Grade: 9
Student Learning Targets



Class: Physical Science

Students who demonstrate understanding can:

WI State Standards	Standard:	Student Learning Targets:
SCI.PS3	Students use science and engineering practices, crosscutting concepts, and an understanding of energy to make sense of phenomena and solve problems.	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Use Potential energy and Kinetic energy equations to solve problems. • Explain and analyze how machines function in terms of conservation of energy and work. • Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).
SCI.PS4	Students use science and engineering practices, crosscutting concepts, and an understanding of waves and their applications in technologies for information transfer to make sense of phenomena and solve problems.	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media. • Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.
SCI.ETS1	Students use science and engineering practices, crosscutting concepts, and an understanding of engineering design to make sense of phenomena and solve problems.	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
SCI.PS2	Students use science and engineering practices, crosscutting	<p>Students will be able to:</p>

	<p>concepts, and an understanding of forces, interactions, motion and stability to make sense of phenomena and solve problems.</p>	<ul style="list-style-type: none"> ● Measure and calculate velocity and acceleration. ● Use Newton's Laws to solve problems involving motion. ● Use mathematical representations (qualitative and quantitative) of Newton's law of gravitation and Coulomb's law to describe and predict the gravitational and electrostatic forces between objects. ● Distinguish between contact forces and fields.
SCI.PS1	<p>Students use science and engineering practices, crosscutting concepts, and an understanding of matter and its interactions to make sense of phenomena and solve problems.</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms. ● Understand that characteristic properties of matter are related to atomic structure.