Physical Science
Curriculum Mapping
2026-2027
LaDawn Nelson

<table>
<tr><td colspan="2">Unit: The Nature of Science</td><td>Time: August 2026</td></tr>
<tr><td colspan="3">Standards Taught</td></tr>
<tr><td colspan="3">Students will investigate using the scientific method and measuring using the International System.</td></tr>
<tr><td>Differentiation/Assessment:</td><td>Classroom Management and Environment:</td><td>What will the students be doing?</td></tr>
<tr><td>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</td><td>The classroom is set up using student tables, with 1 student per table. The students move into different groups for labs and group projects.</td><td>The students will be using layered curriculum as they work through the introductory chapter. discussing what physical science is, how to use the scientific method.</td></tr>
<tr><td>Prior Knowledge Needed</td><td>Vocabulary</td><td>Assessments</td></tr>
<tr><td>Students have a limited foundation in physical science that they will draw upon in this course.</td><td>Scientific methods
Modeling
SI units</td><td>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</td></tr>
<tr><td>Reflection:
This chapter is a review of science concepts from previous courses.</td><td colspan="2">Essential Questions:
What is physical science?
What are scientific methods?
How are graphs used and displayed, understanding the advantages and disadvantages of how each is used?
Why is the metric system important in science?</td></tr>
<tr><td>Relevance:</td><td colspan="2">Students need to understand and use graphs, and how the metric system is used in science.</td></tr>
</table>

Unit: *Energy and Motion*	**Time:** *September- December 2026*	
Standards Taught		
• *HS-PS2-1*, *HS-PS2-2*, *HS-PS2-3*, *HS-PS2-4* • *HS-PS3-1*, *HS-PS3-2*, *HS-PS3-3*, *HS-PS3-4*		
Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.	*The classroom is set up using student tables, with 1 student per table. The students move into different groups for labs and group projects.*	*The students will be describing motion, velocity, acceleration, force, weight, Newton's laws, friction, and learning how simple machines work.* *~ Hands on labs with; Hotwheels © cars measuring, speed, acceleration and momentum.* *Simulating a parachute using eggs and household materials* *Creating levers and measuring mechanical advantage* *Use salt on ice to freeze a liquid*
Prior Knowledge Needed	**Vocabulary**	**Assessments**
Students have a limited foundation in physical science that they will draw upon in this course.	*Motion, velocity, acceleration, force, weight, Newton's laws, Distance, displacement, speed, average speed, instantaneous speed, friction, net force, balanced force, inertia, law of gravitation, centripetal force, centripetal acceleration, momentum, kinetic energy, potential energy, elastic potential energy, chemical potential energy, gravitational potential energy, mechanical energy, law of conservation of energy, work, power, machine, effort force, resistance force, mechanical advantage, efficiency, simple machine, lever, pulley, wheel and axle, inclined plane, screw, wedge, compound machine,*	*Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.*

	temperature, thermal energy, heat, specific heat, conduction, convection, radiation, insulator, solar energy, solar collector, heat engine, internal combustion engine, heat mover	
Reflection: *This unit is important in the study of motion and forces. This is hands on, and students did well with this unit.*	**Essential Questions:** • *How is motion related to velocity and acceleration?* • *How are force, motion, and weight related?* • *Why is inertia a concern in a vehicle accident?* • *Why are safety "specs" and crash test dummies necessary ?* • *How many different types of energy are there?* • *How can machines make work "easier"?* • *What is a conductor vs an insulator?*	
Relevance:	Students are just beginning to drive, and to understand the responsibilities and capabilities, and the consequences of themselves and those around them. Students learn how to use machines to their advantage. Knowing how conductors and insulators work can help keep students safe when cooking.	

Unit: *Electricity and Energy Resources*	**Time:** *January – February 2027*	
Standards Taught		
• *HS-PS2-4, HS-PS2-5* • *HS-PS3-3, HS-PS3-5*		
Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.	*The classroom is set up using student tables, with 1 student per table. The students move into different groups for labs and group projects.*	*Students will have hands on labs with holiday lights and batteries making circuits, and creating their own electromagnet.* *Discussing how the electromagnet is used in their electrical devices and vehicles.*

Prior Knowledge Needed	Vocabulary	Assessments
Students have a limited foundation in physical science that they will draw upon in this course.	*Static electricity, law of conservation of charge, conductor, insulator, charging by contact, charging by induction, voltage difference, circuit, electric current, resistance, Ohm's law, series circuit, parallel circuit, electrical power, kilo-watt hour, magnetism, magnetic pole, magnetic domain, electromagnet, galvanometer, electric motor, electromagnetic induction, generator, turbine, direct current(DC), alternating current(A), transformer.*	*Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.*
Reflection: *Students worked with circuits and were able to make parallel and series circuits Student build on their knowledge of linear motion to circular motion. Students found creating their own electromagnets fascinating*	**Essential Questions:** • *How does electricity work?* • *How do we use magnets in our everyday lives?* • *How are magnets and electricity related?*	
Relevance:	*The students expanded their knowledge of electricity and energy resources, and working with circuits, understanding how they are used in their daily lives, and with holiday lights. Students did not realize how much they rely on the interaction between magnets and electricity to carry out their daily activities.*	

Unit: *Radioactivity and Nuclear Reactions*	**Time:** *February – March 2027*	
Standards Taught		
• HS-PS1-8 • HS-PS2-6		
Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Students who needed the extra help received guided notes, extra individual	*The classroom is set up using student tables, with 1 student per table. The students move*	*Students will be discussing the forces that hold the parts of the atom together. They will also learn what happens*

practice, modified questions and shortened tests.	*into different groups for labs and group projects.*	*when the forces can no longer hold the atom together. They will perform hands on labs using dominos to simulate what happens during chain reactions.*
Prior Knowledge Needed	**Vocabulary**	**Assessments**
Students have a limited foundation in physical science that they will draw upon in this course.	*Alpha particle, beta particle, bubble chamber, chain reaction, cloud chamber, critical mass, gamma ray, Geiger counter, half-life, nuclear fission, nuclear fusion, radioactivity, strong force, tracer, transmutation*	*Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests*
Reflection: *Students learned how nuclear decay happens and how we can use it to tell how old certain materials are. They also discussed how nuclear reactions can be used to create energy and electricity.*	**Essential Questions:** • *How does such a small atom create such large energy?* • *How do atoms break apart and release radiation?* • *How can we use nuclear decay in our lives?*	
Relevance:	*Students have heard about nuclear bombs, nuclear energy, and radiation throughout their lives, this chapter helped answer some of the questions they had.*	

Unit: *The Nature of Matter*	**Time:** *March – April 2027*	
Standards Taught		
• HS-PS1-1, HS-PS1-2, HS-PS1-3, HS-PS1-7		
Differentiation/Assessment:	**Classroom Management and Environment:**	**What will the students be doing?**
Students who needed the extra help received guided notes, extra individual	*The classroom is set up using student tables, with 1 student per table. The students move*	*The students will be discussing the properties of the different states of matter and what happens as matter*

practice, modified questions and shortened tests.	*into different groups for labs and group projects.*	*moves from one state to the next. Students will learn what matter is made of and the properties of matter.* *Students will talk about the makeup of atoms and how they are arranged on the periodic table.* *Using hands on labs to show: How thermal energy affects matter with ice, water, hot plates, and thermometers*
Prior Knowledge Needed	**Vocabulary**	**Assessments**
Students have a limited foundation in physical science that they will draw upon in this course.	*Kinetic theory, melting point, heat of fusion, boiling point, heat of vaporization, diffusion, plasma, thermal expansion, buoyancy, pressure, viscosity, pascal, substance, element, compound, heterogenous mixture, homogenous mixture, solution, colloid, Tyndall effect, suspension, physical property, physical change, distillation, chemical change, law of conservation of Mass, atom, nucleus, electron, proton, neutron, quark, electron cloud, atomic number, mass number, isotope, average atomic mass, periodic table, group, electron dot diagram, period*	*Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests*
Reflection: *Students learned about what makes up atoms and how atoms make up everything else. Students found it interesting how changing one little thing about an atom can totally change the properties it has.*	**Essential Questions:** • *What are atoms made of?* • *How do elements combine to form compounds?* • *How can we change substances?* • *Has how we view the atom always stayed the same?*	
Relevance:	*Students learned about the difference between physical and chemical changes. They also learned that it is important to keep looking and studying, even if they think they know the answer.*	

<table>
<tr><td colspan="2">Unit: Waves</td><td>Time: April - May 2027</td></tr>
<tr><td colspan="3">Standards Taught</td></tr>
<tr><td colspan="3">HS-PS4-1, HS-PS4-5</td></tr>
<tr><td>Differentiation/Assessment:</td><td>Classroom Management and Environment:</td><td>What will the students be doing?</td></tr>
<tr><td>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</td><td>The classroom is set up using student tables, with 1 student per table. The students move into different groups for labs and group projects.</td><td>The students will be investigating the different types of waves, their properties, and how they behave.</td></tr>
<tr><td>Prior Knowledge Needed</td><td>Vocabulary</td><td>Assessments</td></tr>
<tr><td>Students have a limited foundation in science that they will draw upon in this course.</td><td>Amplitude, compressional wave, crest, diffraction, frequency, interference, medium, rarefaction, refraction, resonance, standing wave, transverse wave, trough, wave, wavelength</td><td>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests</td></tr>
<tr><td>Reflection:
Students were intrigued in knowing why things looked different in the water.</td><td colspan="2">Essential Questions:
Why do things look different as they pass through water?
Why can we see the firework explode before we can hear the sound they make when they are far away?</td></tr>
<tr><td>Relevance:</td><td colspan="2">Waves are all around us, sound, light, radio, water, etc. Knowing how waves behave and interact is important in daily activities.</td></tr>
</table>