



Alignment Document
State of Oregon and Aventa Learning Physics

Physics
2005-2007 Benchmark Blueprint

Strand	Common Curriculum Goal	Content Standard	Standard	Unit Name	Course Topic Description
SC.CM.SI Scientific Inquiry	Formulate and express scientific questions or hypotheses to be investigated.	Make observations. Formulate and express scientific questions or hypotheses to be investigated based on the observations.	SC.CM.SI.01 Based on observations and scientific concepts, ask questions or form hypotheses that can be answered or tested through scientific investigations.	<i>(All Labs fulfill this requirement):</i> Physics and the Laws of Motion Physics and the Laws of Motion Physics and the Laws of Motion Energy and Motion Energy and Motion Energy and Motion Heat and Thermodynamics Heat and	Free-Fall Acceleration Lab Projectile Motion Lab Forces and Friction Lab Conservation of Mechanical Energy Lab Momentum Lab Machines and Efficiency Lab Thermal Equilibrium Lab Piston Lab



				<p>Thermodynamics</p> <p>Waves</p> <p>Waves</p> <p>Waves</p> <p>Electricity</p> <p>Electricity</p> <p>Electricity</p> <p>Magnetism and Atomic Physics</p> <p>Magnetism and Atomic Physics</p> <p>Magnetism and Atomic Physics</p>	<p>Simple Harmonic Motion Lab</p> <p>Wave Lab</p> <p>Sound Lab</p> <p>Electrostatics Lab</p> <p>Current and Resistance Lab</p> <p>Resistors in Series and Parallel Lab</p> <p>Magnetic Field of a Solenoid Lab</p> <p>Electromagnetic Induction Lab</p> <p>Photoelectric Effect Lab</p>
<p>SC.CM.SI Scientific Inquiry</p>	<p>Design safe and ethical scientific investigations to address questions or hypotheses.</p>	<p>Design scientific investigations to address and explain questions or hypotheses.</p>	<p>SC.CM.SI.02 Design a scientific investigation that provides sufficient data to answer a question or test a hypothesis.</p>	<p><i>(All Labs fulfill this requirement):</i></p> <p>Physics and the Laws of Motion</p> <p>Physics and the Laws of Motion</p> <p>Physics and the Laws of Motion</p>	<p>Free-Fall Acceleration Lab</p> <p>Projectile Motion Lab</p> <p>Forces and Friction Lab</p>



				Energy and Motion	Conservation of Mechanical Energy Lab
				Energy and Motion	Momentum Lab
				Energy and Motion	Machines and Efficiency Lab
				Heat and Thermodynamics	Thermal Equilibrium Lab
				Heat and Thermodynamics	Piston Lab
				Waves	Simple Harmonic Motion Lab
				Waves	Wave Lab
				Waves	Sound Lab
				Electricity	Electrostatics Lab
				Electricity	Current and Resistance Lab
				Electricity	Resistors in Series and Parallel Lab
				Magnetism and Atomic Physics	Magnetic Field of a Solenoid Lab
				Magnetism and Atomic Physics	Electromagnetic Induction Lab
				Magnetism and Atomic Physics	Photoelectric Effect Lab



<p>SC.CM.SI Scientific Inquiry</p>	<p>Conduct procedures to collect, organize, and display scientific data.</p>	<p>Collect, organize, and display scientific data.</p>	<p>SC.CM.SI.03 Collect, organize, and display sufficient data to facilitate scientific analysis and interpretation.</p>	<p><i>(All Labs fulfill this requirement):</i></p> <p>Physics and the Laws of Motion</p> <p>Physics and the Laws of Motion</p> <p>Physics and the Laws of Motion</p> <p>Energy and Motion</p> <p>Energy and Motion</p> <p>Energy and Motion</p> <p>Heat and Thermodynamics</p> <p>Heat and Thermodynamics</p> <p>Waves</p> <p>Waves</p> <p>Waves</p> <p>Electricity</p> <p>Electricity</p>	<p>Free-Fall Acceleration Lab</p> <p>Projectile Motion Lab</p> <p>Forces and Friction Lab</p> <p>Conservation of Mechanical Energy Lab</p> <p>Momentum Lab</p> <p>Machines and Efficiency Lab</p> <p>Thermal Equilibrium Lab</p> <p>Piston Lab</p> <p>Simple Harmonic Motion Lab</p> <p>Wave Lab</p> <p>Sound Lab</p> <p>Electrostatics Lab</p> <p>Current and Resistance Lab</p>
---	--	--	--	--	---



				Electricity	Resistors in Series and Parallel Lab
				Magnetism and Atomic Physics	Magnetic Field of a Solenoid Lab
				Magnetism and Atomic Physics	Electromagnetic Induction Lab
				Magnetism and Atomic Physics	Photoelectric Effect Lab
SC.CM.SI Scientific Inquiry	Analyze scientific information to develop and present conclusions.	Analyze scientific information to develop and present conclusions.	SC.CM.SI.04 Summarize and analyze data, evaluating sources of error or bias. Propose explanations that are supported by data and knowledge of scientific terminology.	<i>(All Labs fulfill this requirement):</i> Physics and the Laws of Motion Physics and the Laws of Motion Physics and the Laws of Motion Energy and Motion Energy and Motion Energy and Motion Heat and Thermodynamics Heat and Thermodynamics	Free-Fall Acceleration Lab Projectile Motion Lab Forces and Friction Lab Conservation of Mechanical Energy Lab Momentum Lab Machines and Efficiency Lab Thermal Equilibrium Lab Piston Lab



				Waves	Simple Harmonic Motion Lab
				Waves	Wave Lab
				Waves	Sound Lab
				Electricity	Electrostatics Lab
				Electricity	Current and Resistance Lab
				Electricity	Resistors in Series and Parallel Lab
				Magnetism and Atomic Physics	Magnetic Field of a Solenoid Lab
				Magnetism and Atomic Physics	Electromagnetic Induction Lab
				Magnetism and Atomic Physics	Photoelectric Effect Lab
SC.CM.PS Physical Science	Understand structure and properties of matter.	Understand structure and properties of matter.	SC.CM.PS.01 Describe properties of elements and their relationship to the periodic table.		
			SC.CM.PS.01.01 Explain atoms and their base components (protons, neutrons, and electrons) as a basis for all matter.		
			SC.CM.PS.01.02 Read and interpret the periodic table, recognizing the relationship of the chemical and physical properties of the elements to their position on the periodic table.		
			SC.CM.PS.01.03 Recognize that the	Magnetism and	Atomic Physics



			historical development of atomic theory demonstrates how scientific knowledge changes over time, and how those changes have had an impact on society.	Atomic Physics	
SC.CM.PS Physical Science	Understand chemical and physical changes.	Describe and analyze chemical and physical changes.	SC.CM.PS.02 Analyze the effects of various factors on physical changes and chemical reactions.		
			SC.CM.PS.02.01 Describe how transformations among solids, liquids, and gases occur (change of state).	Heat and Thermodynamics	Heat
			SC.CM.PS.02.02 Identify factors that can influence change of state, including temperature, pressure, and concentration.		
			SC.CM.PS.02.03 Describe chemical reactions in terms of reactants and products.		
			SC.CM.PS.02.04 Describe the factors that affect the rate of chemical reactions.		
			SC.CM.PS.02.05 Recognize examples that show when substances combine or break apart in a chemical reaction, the total mass remains the same (conservation of mass).		
SC.CM.PS Physical Science	Understand fundamental forces, their forms, and their effects on motion.	Describe fundamental forces and the motions resulting from them.	SC.CM.PS.03 Describe and explain the effects of multiple forces acting on an object.	Physics and the Laws of Motion	Forces and the Laws of Motion
				Physics and the Laws of Motion	Forces and Friction Lab
			SC.CM.PS.03.01 Understand and apply the relationship $F=ma$ in situations in which one force acts on an object.	Physics and the Laws of Motion	Forces and the Laws of Motion
				Physics and the Laws of Motion	Forces and Friction Lab
			SC.CM.PS.03.02 Recognize that equal and opposite forces occur when one object exerts a force on another.	Physics and the Laws of Motion	Forces and the Laws of Motion
				Physics and the Laws of Motion	Forces and Friction Lab



			<p>SC.CM.PS.03.03 Describe the forces acting on an object, based on the motion of that object.</p>	<p>Physics and the Laws of Motion</p> <p>Physics and the Laws of Motion</p>	<p>Forces and the Laws of Motion</p> <p>Forces and Friction Lab</p>
			<p>SC.CM.PS.04 Recognize that gravity is a universal force.</p>	<p>Physics and the Laws of Motion</p> <p>Physics and the Laws of Motion</p> <p>Energy and Motion</p>	<p>Two Dimensional Motion and Vectors</p> <p>Free-Fall Acceleration Lab</p> <p>Circular Motion and Gravitation</p>
			<p>SC.CM.PS.04.01 Describe the relationship of mass and distance to gravitational force.</p>	<p>Energy and Motion</p>	<p>Circular Motion and Gravitation</p>
<p>SC.CM.PS Physical Science</p>	<p>Understand energy, its transformations, and interactions with matter.</p>	<p>Explain and analyze the interaction of energy and matter.</p>	<p>SC.CM.PS.05 Describe differences and similarities between kinds of waves, including sound, seismic, and electromagnetic, as a means of transmitting energy.</p>	<p>Waves</p> <p>Waves</p> <p>Waves</p>	<p>Vibrations and Waves</p> <p>Sound</p> <p>Light</p>
			<p>SC.CM.PS.05.01 Recognize that waves of all kinds have energy that can be transferred when the waves interact with matter.</p>	<p>Waves</p>	<p>Vibrations and Waves</p>
			<p>SC.CM.PS.05.02 Apply the concepts of frequency, wavelength, amplitude, and energy to electromagnetic and mechanical waves.</p>	<p>Waves</p>	<p>Wave Lab</p>
			<p>SC.CM.PS.06 Describe and analyze examples of conservation of energy.</p>	<p>Energy and Motion</p>	<p>Conservation of Mechanical Energy Lab</p>
			<p>SC.CM.PS.06.01 Recognize that heat energy is a by-product of most energy transformations.</p>	<p>Energy and Motion</p> <p>Energy and Motion</p>	<p>Conservation of Mechanical Energy Lab</p> <p>Work and Energy</p>
			<p>SC.CM.PS.06.02 Describe ways in which energy can be transferred, including</p>	<p>(only light waves are covered):</p>	



			chemical reactions, nuclear reactions, and light waves.	Magnetism and Atomic Physics	Photoelectric Effect Lab
			SC.CM.PS.06.03 Explain the difference between potential and kinetic energy.	Energy and Motion	Conservation of Mechanical Energy Lab
			SC.CM.PS.06.04 Analyze the flow of energy through a system by applying the law of conservation of energy.	Energy and Motion	Conservation of Mechanical Energy Lab