

Link Community Charter School
Grade 8 Science: Physical Science Scope and Sequence

Time Line	Unit Description/ Topic	Standards	Essential Questions?	Content: What will students know?	Skills: What will students be able to do?	Texbook/ Materials/ Resources
M1	C2: Solids, Liquids, and Gases	MS-PS1-1	Why does a substance change states?	L1: States of Matter L2: Changes of State L3: Gas Behavior	Develop models to describe the atomic composition of simple molecules and extended structures. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.	Interactive Science: Physical Science
M1	C8: Forces	MS-PS2-1	How do objects react to forces?	L1: The Nature of Forces L2: Friction and Gravity L3: Newton's Laws of Motion L4: Momentum	Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.	Interactive Science: Physical Science
M1	C9: Work and Machines	MS-PS2.-5	How do machines make it easier to do work?	L1: Work and Machines L2: Understanding Machines L3: Inclined Planes and Levers L4: Putting Machines Together	Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.	Interactive Science: Physical Science

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M1	C10: Energy	MS-PS3-4	How is energy conserved in a transformation?	L1: What is Energy L2: Forms of Energy L3: Energy Transformations and Conservation	Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.	Interactive Science: Physical Science
M1	C11: Thermal Energy and Heat	MS-PS3-5	How does heat flow from one object to another?	L1: Temperature, Thermal Energy, and Heat L2: The Transfer of Heat L3: Thermal Properties	Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.	Interactive Science: Physical Science
M2	C12: Characteristics of Waves	MS-PS4-1	What are the properties of waves?	L1: What are Waves? L2: Properties of Waves L3: Interactions of Waves	Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.	Interactive Science: Physical Science
M2	C13: Sound	MS-PS4-2	What determines the pitch and loudness of a sound?	L1: The Nature of Sound L2: Properties of Sound L3: Music L4: Hearing Sound L5: Using Sound	Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.	Interactive Science: Physical Science

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M2	C14: Electromagnetic Waves	MS-PS4-1,2,3	What kinds of waves make up the electromagnetic spectrum?	L1: The Nature of Electromagnetic Waves L2: Waves of the Electromagnetic Spectrum L3: Wireless Communication	Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.	Interactive Science: Physical Science
M2	C15: Light		How does light interact with matter?	L1: Light and Color L2: Reflection and Mirrors L3: Refraction and Lenses		Interactive Science: Physical Science
M2	C16: Electricity	MS-PS3-3	How does an electric circuit work?	L1: Electric Charge and Static Electricity L2: Electric Current L3: Electric Circuits L4: Electric Power and Safety	Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.	Interactive Science: Physical Science

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M3	C3: Elements and the Periodic Table	HS-PS1-1	How is the periodic table organized?	L1: Introduction to Atoms L2: Organizing the Elements L3: Metals L4: Nonmetals and Metalloids L5: Radioactive Elements	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. [Clarification Statement: Examples of properties that could be predicted from patterns could include reactivity of metals, types of bonds formed, numbers of bonds formed, and reactions with oxygen.] [Assessment Boundary: Assessment is limited to main group elements. Assessment does not include quantitative understanding of ionization energy beyond relative trends.]	Interactive Science: Physical Science
M3	C4: Atoms and Bonding	MS-PS1-2	How can bonding determine the properties of a substance?	L1: Atoms, Bonding, and the Periodic Table L2: Ionic Bonds L3: Covalent Bonds L4: Bonding in Metals	Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.	Interactive Science: Physical Science

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M3	C5: Chemical Reactions	MS-PS1-2	How is matter conserved in a chemical reaction?	L1: Observing Chemical Change L2: Describing Chemical Reactions L3: Controlling Chemical Change	Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants.	Interactive Science: Physical Science
M3	C6: Acids, Bases, and Solutions	MS-PS1-2	What determines the properties of a solution?	L1: Understanding Solutions L2: Concentration and Solubility L3: Describing Acids and Bases L4: Acids and Bases in Solutions	Develop models to describe the atomic composition of simple molecules and extended structures.	Interactive Science: Physical Science
M4	ASK 8 Science Prep (Dates & Topics TBA)		.	L1: Earth L2: Life L3: General Science Practices		NJASK Science Prep Book
M4	C7: Motion	MS-PS2-1	How do you describe the motion of an object?	L1: Describing Motion L2: Speed and Velocity L3: Acceleration	Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.	Interactive Science: Physical Science
M4	C17: Magnetism and Electromagnetism	MS-PS2-3	How are electricity and magnetism related?	L1: What is a Magnet? L2: Magnetic Fields L3: Electromagnetic Force L4: Electricity, Magnetism, and Motion L5: Electricity From Magnetism	Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.	Interactive Science: Physical Science