



Lowell Public Schools
Grade K-8 Current Massachusetts Curriculum Framework for Science

Grade 7	September	October	November	December	January	February	March	April	May	June
Massachusetts State Standards Grade 7										
Earth Science (FOSS Unit: Weather and Water)										
7.MS-ESS2-2. Construct an explanation based on evidence for how Earth’s surface has changed over scales that range from local to global in size.							x	x	x	x
7.MS-ESS2-4. Develop a model to explain how the energy of the Sun and Earth’s gravity drive the cycling of water, including changes of state, as it moves through multiple pathways in Earth’s hydrosphere.							x	x	x	x
7.MS-ESS3-2. Obtain and communicate information on how data from past geologic events are analyzed for patterns and used to forecast the location and likelihood of future catastrophic events.							x	x	x	x
7.MS-ESS3-4. Construct an argument supported by evidence that human activities and technologies can mitigate the impact of increases in human population and per capita consumption of natural resources on the environment.							x	x	x	x



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Massachusetts State Standards										
Life Science FOSS Unit: Populations and Ecosystems										
7.MS-LS1-4. Construct an explanation based on evidence for how characteristic animal behaviors and specialized plant structures increase the probability of successful reproduction of animals and plants.	x	x	x							
7.MS-LS2-1. Analyze and interpret data to provide evidence for the effects of periods of abundant and scarce resources on the growth of organisms and the size of populations in an ecosystem.	x	x	x							
7.MS-LS2-2. Describe how relationships among and between organisms in an ecosystem can be competitive, predatory, parasitic, and mutually beneficial and that these interactions are found across multiple ecosystems.	x	x	x							
7.MS-LS2-3. Develop a model to describe that matter and energy are transferred among living and nonliving parts of an ecosystem and that both matter and energy are conserved through these processes.	x	x	x							



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Massachusetts State Standards											
7.MS-LS2-5. Evaluate competing design solutions for protecting an ecosystem. Discuss benefits and limitations of each design.		x	x	x							
7.MS-LS2-6(MA). Explain how changes to the biodiversity of an ecosystem—the variety of species found in the ecosystem—may limit the availability of resources humans use.		x	x	x							
Physical Science (FOSS Unit: Electromagnetic Forces, Gravity and Kinetic Energy)											
7.MS-PS2-3. Analyze data to describe the effect of distance and magnitude of electric charge on the strength of electric forces.					x	x	x				
7.MS-PS2-5. Use scientific evidence to argue that fields exist between objects with mass, between magnetic objects, and between electrically charged objects that exert force on each other even though the objects are not in contact.					x	x	x				
7.MS-PS3-1. Construct and interpret data and graphs to describe the relationships among kinetic energy, mass, and speed of an object.					x	x	x				



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7.MS-PS3-3. Apply scientific principles of energy and heat transfer to design, construct, and test a device to minimize or maximize thermal energy transfer.					x	x	x				
7.MS-PS3-4. Conduct an investigation to determine the relationships among the energy transferred, how well the type of matter retains or radiates heat, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.					x	x	x				
7.MS-PS3-5. Present evidence to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.					x	x	x				
7.MS-PS3-6(MA). Use a model to explain how thermal energy is transferred out of hotter regions or objects and into colder ones by convection, conduction, and radiation.					x	x	x				
7.MS-PS3-7(MA). Use informational text to describe the relationship between kinetic and potential energy and illustrate conversions from one form to another.					x	x	x				