

Hopkins County Schools
 Grade 4
 NGSS Pacing Guide & Curriculum Map

Marking Period	NGSS Disciplinary Core Ideas	Science Lesson Chapter & Title	Essential Question	I Can...	Key Vocabulary
1 st Trimester	4-ETS1.A,B,C	EMPPS Chapter 20: Problem Solvers	What are possible solutions to a problem?	I can define a problem to plan and carry out fair tests to find a solution.	Problem Solution Variable Pitch
	Earth Space Science ESS1.C	MPPS Chapter 16: If You Find a Rock	How are rocks formed?	I can identify evidence from patterns of rock formation.	Sedimentary Metamorphic Igneous Lava, limestone, sandstone, minerals sediments
	ESS1.C	EMPPS Chapter 16: Fossils Tell of Long Ago	How do rock patterns show changes in the earth?	I can identify evidence from rock patterns to show change in earth's landscape.	Fossil Force Permineralization paleontologist
	ESS2.B Plate Tectonics and Large-Scale System Interactions ESS3.B Natural Hazards	http://concord.org/stem-resources/earthquakes-around-world http://concord.org/stem-resources/buildings-and-earthquakes	How can earthquakes and volcanoes affect earth's features?	I can analyze and interpret data to describe patterns of Earth's features.	Natural hazards Plate tectonics Earthquake Volcano boundaries

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	ESS2.E Biogeology ESS3.B Natural Hazards	http://www.resa.net/curriculum/curriculum/science/professionaldevelopment/ngss-pd/lesson-plans-exploring-ngss/ Open Earthquakes-Engineering			
	ESS3.A	EMPPS Chapter 9: Harnessing the Wind	How is wind used to generate energy?	I can describe ways energy and fuels that humans use come from natural resources, and how those uses affect the environment.	Wind energy Generator Mechanical and electric energy Electromagnetic-induction Transfers
	ESS3.A	PPS Chapter 24: Down the Drain	How do the natural resources humans use affect the environment?	I can describe ways energy and fuels that humans use come from natural resources, and how those uses affect the environment.	Natural resource Renewable and nonrenewable
2 nd Trimester	Physical Science 4-PS3.C Relationship Between Energy and Forces	EMPPS Chapter 8: The Wind Blew	How does the transfer of energy change an object's motion?	I can explain what happens when objects collide.	Energy Force Motion Speed Direction

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	4-PS3.A Definitions of Energy 4-PS3.B Conservation of Energy and Energy Transfer	EMPPS Chapter 9: Harnessing the Wind	How can energy of motion transfer into electrical energy?	I can describe how energy of motion transfers into electrical energy.	Motion Generator Electricity Electrical energy Kinetic energy Potential energy Stored energy
	4-PS3.D Chemical Reactions	PPS Chapter 16: Chemical Change Cafe	What is the difference between a physical change and chemical change?	I can create a chemical reaction by mixing two substances.	Chemical change Energy Stored energy
	4-PS4.A Wave Properties	EMPPS Chapter 10: Sounds all Around An additional resource: http://www.resa.net/curriculum/curriculum/science/professionaldevelopment/ngss-pd/lesson-plans-exploring-ngss/ Open Sound Acoustic Lesson	How does sound travel?	I can explain how sound waves are regular patterns of motion.	Sound waves Medium Frequency Amplitude Wave length Vibrations
	4-PS4.B Electromagnetic Radiation	Chapter 15: Mirror, Mirror	What happens when light reflects from its surface?	I can explain what happens when light reflects from its surface.	Reflect Refract

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	4-PS4.C Information Technologies and Instrumentation	http://camsp.kcusd.com/files/Documents/Morse_Code.docx Technology and Data	How can data be sent across distances in a variety of different ways?	I can describe how data can be sent across a variety of ways.	Morse Code Data Technology digitized
	Science and Engineering Practices 4-ETS1	PPS Chapter 9: What's Poppin'?	What is a safe, fair and repeatable experiment to test various popcorn brands?	I can plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence.	Variable & controlled variable Data Investigation Experimental
3 rd Trimester	Life Science 4-LS1.A Structure and Function	PPS Chapter 4: Name That Shell	How are internal and external structures significant?	I can identify a variety of creatures based on their internal and external structures.	Dichotomous Univalve Bivalve Hinge Internal External Knobs
	4-LS1.A Structure and Function	PPS Chapter 4: Bugs!	How are internal and external structures significant?	I can classify insects based on its internal and external structures.	Insect Invertebrate Head Thorax Abdomen Exoskeleton Entomologist

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	4-LS1.A Structure and Function	PPS Chapter 10: Wiggling Worms	How are internal and external structures significant?	I can observe the external structures of an earthworm. I can create a habitat for an earthworm.	Adaptations Habitat annelids Segments Castings Midden Bristles Saddle (See Background section of lesson)
	4-LS-1.A Structure and Function	EMPPS Chapter 14: Ducks Don't Get Wet	How are internal and external structures significant?	I can describe the many structures that serve various functions of a duck's growth, survival and behavior.	Preening Oil gland Dabbling ducks Diving ducks Upend lamellae
	Science and Engineering Practices 4-ETS1.A,B,C	PPS Chapter 25: If I Built a Car	How does an assembly line work?	I can use the design process to collaboratively build an effective assembly line.	Design Process Engineering Assembly line Prototype

Notes: