

Grade 8 Pacing Guide
Quarter 1

Topic	Chapter/Resources	Frameworks	Lab	Time
Earth Systems				
Magnetic Fields	ES Ch 2 Sec 1	PS.6.8.2		1 week
		Conduct investigations demonstrating the field force (lines of force) in magnetic fields		
Topographic Maps	ES Ch 2 Sec 3	ESS.8.8.7	Natural Dam Topo	1-2 weeks
		Use topographic maps to identify surface features of Earth		
Landforms		ESS.8.8.3		
		Conduct investigations to compare and contrast different landforms found on earth:		
		mountains		
		plateaus		
		plains		
		ESS.8.8.5		
		Compare and contrast the different landforms caused by earths external forces:		
		plains		
		canyons		
		deltas		
		valleys		
		swamps		
		ESS.8.8.6		
		Research local, regional, and state landforms created by external forces on Earth:		
		Gulf Coastal Plain		
		Arkansas River Valley		
		Mississippi Alluvial Plain, including the delta region		
		Crowley's ridge		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Cycles	ES Ch. 10 Sec 1	PS.6.8.1		1 week
		Model how motion and forces change Earth's surface		
		compression		
		tension		
		weathering		
		erosion		
	ES Ch 10 Sec 2 and 3	ESS.8.8.12		
		Investigate the types of weathering involved in the breakdown of organic and inorganic components of Earth's surface		
		ESS.8.13	Soil sampling lab	
		Illustrate soil profiles		
		ESS.8.8.14		
		Apply knowledge of soil profiles to local soil samples		
		ESS.8.8.15		
		Investigate the formation of soil types		
		ESS.8.8.16		
		Identify the components of soil as inorganic or organic through investigations		
		ESS.8.8.17		
		Identify the basic nutrients needed by plants that are present in soils		
		nitrogen		
		phosphorous		
		potassium		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Cycles con't	Ch. 10	ESS.8.8.18		
		Identify ways plants use organic and inorganic components in the soil		
		ESS.8.8.19		
		Investigate and analyze the composition of a variety of soils		
		ESS.8.8.20		
		Conduct investigations on soil permeability		
Erosion	ES Ch 12 Sec 1-4	ESS.8.8.8		
		Demonstrate an understanding the agents of erosion:		
		gravity		
		water		
		ice		
		wind		
		animals, including humans		
Rivers	ES Ch. 11 Sec 1 and 2	ESS.8.8.9		
		Using models of rivers, predict changes when variables, such as load, slope, amount of water, or composition of a stream bed, are changed through erosion or deposition		
		ESS.8.8.10		
		Explain how weathering and erosion affect the oceans' salinity		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Earth's History	ES Ch 6 Sec 1 and 2	ESS.9.8.3	Geologic Columns	
		Explain how scientists determine the relative age of fossils found in layers of sedimentary rock		
		ESS.9.8.4		
		Apply geologic laws of superposition and cross cutting to determine the relative ages of rock in a cross section		
Changing Earth	ES Ch.7	ESS.9.8.1		
		Explain processes that have changed Earth's surface that have resulted from sudden events (e.g. earthquakes and volcanoes) and gradual changes (e.g., uplift, erosion, weathering		
		ESS.9.8.2		
		Analyze how rock sequences may be disturbed by the following:		
		erosion		
		deposition		
		igneous intrusion		
		folding and faulting		
		uplifting		
Global warming	ESS Ch. 17 pgs 470-471	ESS.8.8.1		
		Analyze and predict the consequences of global warming on the following		
		weather		
		temperature		
		ocean water levels		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Water currents	ES Ch 14 Sec 1	ESS.8.8.2		
		Investigate how global patterns of water currents influence local weather		
		Gulf Stream		
		Atlantic currents		
		California Currents		
Space Science				
Solar system Sun, Earth, Moons, Planets, Galaxies		ESS.10.8.1		
		Summarize the effects of gravity on bodies in space		
		ESS.10.8.2		
		Identify variables that affect the amount of gravitational force between two objects:		
		mass of the objects		
		distance between the objects		
		ESS.10.8.3		
		Relate the effects of the moon's gravitational force on Earth's ocean tides		
		ESS.10.8.4		
		Identify the following:		
		high tides		
		low tides		
		spring tides		
		neap tides		
		ESS.10.8.5		
		Define the terms galaxy and universe		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Space systems con't				
		ESS.10.8.6	Night class	
		Illustrate the appearance of galaxies as seen through a telescope		
		clarity		
		shape		
		ESS.10.8.7		
		Compare and contrast the Milky Way Galaxy to other galaxies		
		ESS.10.8.8.		
		Illustrate the position of our solar system within the Milky Way Galaxy		
Energy				
Properties of Matter	PS Ch 1 Sec 1 and 3	PS.5.8.1		
		Compare the atomic theory to the characteristics of a scientific theory		
		PS 5.8.2		
		Explain the structure of atoms		
		PS.5.8.3		
		Determine the number of protons, neutrons, and electrons in an atom		
		PS.5.8.4		
		Create the atomic models of common elements		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Characteristics of Waves	PS Ch. 15 - 16	PS.7.8.4		
		Conduct investigations demonstrating the characteristic of a wave:		
		wavelength		
		frequency		
		speed		
		amplitude		
		PS.7.8.5		
		Conduct investigations of longitudinal and transverse waves to determine how they are different		
		PS.7.8.6		
		Explain how energy is transferred through waves:		
		seismic waves		
Sound	PS Ch.16 Sec 1-2	sound waves		
		water waves		
	PS Ch.17 Sec 1-4	electromagnetic waves		
		PS 7.8.7		
		Describe how waves travel through different kinds of media		
	PS Ch. 18	PS.7.8.8		
		Differentiate among reflection, refraction, and absorption of various types of waves		
Electromagnetic Waves	PS Ch. 19	PS.7.8.9		
		Describe and Diagram the electromagnetic spectrum		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Electromagnetism		PS.7.8.10		
		Analyze the electromagnetic spectrum		
		PS.7.8.11		
		Investigate real life examples of the electromagnetic spectrum		
		PS.7.8.12		
		Conduct investigations demonstrating the separation of white light into its spectrum using refraction		
		PS.7.8.13		
		Compare ways to transfer information :		
		sound		
		light		
		radio		
		microwave energy		
Electromagnet		PS.6.8.3		
		Design and conduct investigating and applying variables affecting the strength of an electromagnet		
		PS.6.8.4		
		Analyze and compare the relationship between electricity and magnetism		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Electricity	PS Ch. 20	PS.7.8.1	Electricity Lab	
		Construct open and closed electrical circuits		
		series circuits		
		parallel circuits		
		PS.7.8.2		
		Describe and diagram open and closed series and parallel circuits		
		PS.7.8.3.		
		Compare and contrast open and closed series circuits and parallel circuits		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Life Science				
Structure and Function	LS Ch. 3 Sec 1	LS.2.8.1		
		Illustrate the hierarchical relationship of cells, tissues, organs, organ systems, and organisms		
	LS Ch. 3 Sec 1-2	LS.2.8.6		
		Compare and contrast characteristics of unicellular organisms and multicellular organisms		
	Ch. 9	LS.2.8.8		
		Identify and describe similarities and differences among organisms of different, but closely related taxa (e.g., pine trees, big cats, rodents, ungulates)		
		LS.2.8.2		
		Identify different types of single-celled organisms:		
		protists		
		bacteria		
		LS.2.8.3		
		Relate the effect of bacteria on oral health		
		LS.2.8.4		
		Describe and illustrate single-celled organisms found in pond water		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Structure and Function con't		LS.2.8.5		
		Use a dichotomous key to classify organisms found in pond water		
Heredity and Reproduction	LS Ch.5 Sec 1	LS.3.8.1		
		Identify and explain why inherited characteristics of living things depend on genes		
		LS.3.8.2		
		Differentiate between dominant and recessive traits		
		LS.3.8.3		
		Observe and classify traits as dominant or recessive:		
		tongue rolling		
		detached earlobes		
		widow's peak		
		hitchhiker's thumb		
		dimples		
		unibrow		
	LS Ch. 5-6	LS.3.8.4		
		Differentiate among observed inherited traits and acquired traits of plants and animals		
		LS.3.8.5		
		Interpret simple genetic crosses using Punnett Squares		
		LS.3.8.6		
		Predict patterns that emerge from simple genetic crosses		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Heredity and Reproduction con't		LS.3.8.7		
		Conduct investigations demonstrating that the phenotype of a genetic trait is the result of a genotype		
		LS.3.8.8		
		Explain how genetic variation within a species is a result of dominant traits and recessive traits		
		LS.3.8.9		
		Compare and contrast patterns of embryological development for all vertebrates, including humans		
		LS.3.8.10		
		Distinguish between characteristics of plants and animals through selective breeding		
Regulation and Behavior	LS Ch.7	LS.3.8.12		
		Compare the theory of evolution to the characteristics of a scientific theory		
		LS.3.8.13		
		Identify the basic ideas related to biological evolution:		
		diversity of species		
		variations within species		
		adaptations		
		natural selection		
		extinction of a species		

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Topic	Chapter/Resources	Frameworks	Lab	Time
Regulation and Behavior con't	LS Ch.7	LS.3.8.14		
		Explain that the fossil record provides evidence of life forms' appearance, diversification, and extinction		
		LS.3.8.15		
		Explain the process of natural selection		
		LS.3.8.16		
		Identify genetic traits that make organisms more likely to survive and reproduce in a particular environment		
Populations and Ecosystems	Ch.18	LS.4.8.1		
		Analyze the effect of changes in environmental conditions on the survival of individual organisms and entire species		