

PBIS Correlations to the Next Generation Science Standards, Grades 6-8

The learning sets and page numbers in this correlation represent each unit in which students are being prepared to meet the NGSS Performance Expectations listed.

MS. Structure and Properties of Matter

PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures. Yellow is for 7th grade											LS 2 p. 69-101, LS 3 p. 138-143, LS 4 p. 197-200		
MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.											LS 3 p. 114-122, p. 133-138		
MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.							LS 2 p. 67-75, LS 3 p. 142-155			LS 3 p. 116-118	LS 1 p. 41-54		

MS. Chemical Reactions

PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.										p. 122-131	LS 1 p. 23-37, LS 2 p. 60-101, LS 3 p. 133-144, LS 4 p. 193, p. 197-202, p. 216-234		
MS-PS1-5. Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.											LS 3 p. 139-144, LS 4 p. 192-193, p. 197-200		
MS-PS1-6. Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.										LS 3 p. 85-97, p. 129-131			

MS. Forces	and	Inter	action
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PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-PS2-1. Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects. Red is for 8th grade	LS 1 p. 66-73, LS 2 p. 91-92, p. 116-118, p. 122-126, LS 3 p. 190-193		What's the Big Question p. 3-12, LS 1 p. 13-39, p. 57-63, LS 2 p. 111-114, LS 3 p. 157, p. 159-162, LS 4 p. 213-220							LS 2 p. 48-50, p. 54-56		LS 2 p. 43-44	
sum of the forces on the object and the mass of the	LS 1 p. 36-39, p. 66-85, LS 2 p. 100-101, p. 121-130, p. 145-152		What's the Big Question p. 7-9							LS 2 p. 54-56		LS 1 p. 16-34, p. 43-44, LS 2 p. 45-61, LS 3 p. 69-77, p. 79-92, LS 4 p. 98-105	
MS-PS2-3. Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.										LS 5 p. 206-217, p. 223, p. 229-237	LS 2 p. 89-90		
MS-PS2-4. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.	LS 1 p. 74-85, LS 2 p. 115-130		LS 1 p. 15-32, p. 47-56, LS 2 p. 109-110, LS 3 p. 136-151, LS 4 p. 165							LS 2 p. 63-68, p. 72		LS 1 p. 21-34, LS 2 p. 45-53, LS 3 p. 69-77, p. 79-92, LS 4 p. 98-105	
MS-PS2-5. 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.			LS 1 p. 20-26, LS 3 p. 144-151, LS 4 p. 165							LS 5 p. 224-229			LS 3 p. 53-67, LS 4 p. 69-98, p. 103

MS. Energy													
PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-PS3-1. Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.	LS 1 p. 57-60, p. 73-84 LS 2 p. 145-152, LS 3 p. 161-174									LS 2 p. 63-68			
MS-PS3-2. Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.	LS 2 p. 94-95, p. 116-127									LS 2 p. 57-59, p. 74-77			
MS-PS3-3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.													
MS-PS3-4. 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.							LS 2 p. 67-75, LS 3 p. 141-155, LS 4 p. 196-200			LS 1 p. 31-32, LS 3 p. 85-111, p. 116-118			
Green is for 6th grade MS-PS3-5. Construct, use, and present arguments to support the claim that when the motion energy of an object changes, energy is transferred to or from the object.	LS 2 p. 94-95, p. 117-127		LS 1 p. 15-28			LS 1 p. 16-19, p. 21-34, p. 45-52, LS 2 p. 53-61, p. 69-77, p. 79-82, LS 3 p. 83-86, p. 98-105	LS 2 p. 67-75, LS 4 p. 196-200			LS 2 p. 47-55, LS 3 p. 100-106, p. 129-131, LS 4 p. 161-170, LS 6 p. 264-276, p. 278			
MS. Waves and Electromagnetic Radiat	ion												
PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-PS4-1. 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.				LS 3 p. 105-112						LS 4 p. 162-167			
MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.			LS 4 p. 169-198	LS 3 p. 105-112, p. 114-122, LS 3 p. 123-129	LS 3 p. 124-140		LS 2 p. 72-75, p. 116-122			LS 4 p. 150-155, p. 161-169, p. 191-199			
MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals (sent as wave pulses) are a more reliable way to encode and transmit information.													

MS. Structure, Function, and Information Processing

PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.									LS 2 p. 27-34, LS 3 p. 80-81				
MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.													
MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.									LS 3 p. 82-103, p. 105-119, p. 124-130				
MS-LS1-8. Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.					LS 2 p. 61-77								

MS. Matter and Energy in Organisms and Ecosystems

PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.						LS 3 p. 99-104		LS 1 p. 32-33		LS 3 p. 136-140			
MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.						LS 3 p. 99-104				LS 3 p. 136-140			
MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.						LS 2 p. 56-61, LS 3 p. 92-98, p. 107-132, p. 140-148		LS 3 p. 95-101, p. 103-119	LS 2 p. 45-54				
MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.						LS 3 p. 107-132	LS 1 p. 10-20, p. 36-51, LS 2 p. 61-66, p. 110-122, LS 3 p. 127-165						
MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.						LS 2 p. 56-61, p. 63-78, LS 3 p. 92-98, p. 107-132, p. 140-148	LS 2 p. 110-122	LS 3 p. 95-101, p. 103-119, p. 124-139	LS 2 p. 45-54		LS 4 p. 203-207, p. 221-222, p. 232-237		

MS. Independent Relationships in Ecosy	ystems												
PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	ww	GEN	GFG	ENG	AQ	MBT	DIV
MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.					LS 2 p. 61-77, p. 82-90	LS 3 p. 92-98, p. 107-132, p. 140-148							
MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services						LS 1 p. 35-40, LS 3 p. 122-126, p. 140-148		LS 4 p. 219-232					
MS. Growth, Development, and Reprod	uction of O	rganisms											
PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.					LS 2 p. 78-81			LS 2 p. 45-48, LS 3 p. 103-119					
MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.						LS 2 p. 56-60		LS 3 p. 103-119, p. 124-139, LS 4 p. 219-233	LS 2 p. 41-43, p. 45-49, p. 51-54				
MS-LS3-1. Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.								LS 2 p. 82-87, LS 4 p. 201-211					
MS-LS3-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.								LS 2 p. 49-64, p. 66-71, p. 76-80, LS 4 p. 168-199, p. 219-233					
MS-LS4-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.								LS 3 p. 141-158, LS 4 p. 212-218, p. 219-233					

MS. Natural Selection and Adaptations													
PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-LS4-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.				LS 6 p. 249-258				LS 3 p. 120-123, LS 4 p. 208					
MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.						LS 3 p. 87-90		LS 3 p. 120-123, LS 4 p. 208					
MS-LS4-3. Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.													
MS-LS4-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.					LS 2 p. 43-46, p. 82-90, LS 3 p. 120-123, p 131-140	LS 3 p. 139		LS 3 p. 95-101, p. 103-113, p. 124-139, LS 4 p. 208					
MS-LS4-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.						LS 3 p. 90		LS 3 p. 95-101, p. 103-113, p. 124-139					
MS. Space Systems													
PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-ESSI-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.			LS 2 p. 65-93, p. 95-110				LS 2 p. 90-109						
MS-ESS1-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.			LS 1 p. 20-26, p. 47-56, LS 3 p. 115-121, p. 133-138, p. 142-151, LS 4 p. 163-164										
MS-ESS1-3. Analyze and interpret data to determine scale properties of objects in the solar system.			LS 1 p. 47-56, LS 2 p. 95-108, LS 3 p. 115-119, p. 122-141, LS 4 p. 169-183										

MS.	History	of	Earth
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PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	ww	GEN	GFG	ENG	AQ	MBT	DIV
MS-ESS1-4. Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.				LS 6 p. 251-258									
MS-ESS2-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.		LS 3 p. 53-63, p. 67-76, p. 82-102	LS 1 p. 33-49	What's the Big Question p. 3- 31, LS 1 p. 34-39, p. 55-58, LS 2 p. 60-66, p. 74-79, p. 83-84, p. 88-90, LS 3 p. 123-144, LS 4 p. 153-165, LS 5 p. 171-211, LS 6 p. 215-240			LS 3 p. 157-162, LS 4 p. 231-240						
MS-ESS2-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.				LS 3 p. 91-95, p. 123-148 LS 4 p. 149-169, LS 5 p. 171-211, LS 6 p. 215-240, p. 251-258									

PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	40	MBT	DIV
DIS UNITS:	VIIVI	DIG	ASI	LS 4 p. 153-169, LS 5	AIA	LIV	LS 1 p. 11-20, p. 36-51,	GEN	GrG	ENG	AQ	MB1	DIV
MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy hat drives this process.				p. 171-212, LS 6 p. 215-240			LS 2 p. 61-66, p. 79-89, LS 3 p. 127-165, LS 4 p. 174-240						
AS-ESS2-4. Develop a model to describe the yeling of water through Earth's systems driven by nergy from the sun and the force of gravity.							LS 3 p. 127-165, LS 4 p. 207-215						
MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.										LS 6 p. 282-291			
MS. Weather and Climate													
PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
MS-ESS2-5. Collect data to provide evidence for now the motions and complex interactions of air masses results in changes in weather conditions 7th as well							LS 1 p. 11-20, p. 36-58, LS 2 p. 61-66, p. 79-89, p. 110-122, LS 3 p. 149-164, LS 4 p. 174-206, p. 218-229				LS 3 p. 151-161, LS 4 p. 179-202		
MS-ESS2-6. Develop and use a model to describe ow unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that letermine regional climates.							LS 1 p. 11-20, p. 36-58, LS 2 p. 61-66, p. 79-89, p. 110-122, LS 3 p. 149-165, LS 4 p. 174-240			LS 4 p. 186-188			
MS-ESS3-5. Ask questions to clarify evidence of the							LS 4 p. 169-173, Address the				LS 4 p. 239-246		

MS. Human Impacts

PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	ww	GEN	GFG	ENG	AQ	MBT	DIV
MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.		LS 3 p. 82-102		LS 3 p. 105-114, p. 131-144, LS 5 p. 174-188, p. 200-201			What's the Big Challenge p. 3-8 LS 1 p. 54, p. 59-60, LS 2 p. 123-126, LS 3 p. 166-168, LS 4 p. 230-266						
MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. 7th grade as well						What's the Big Question p. 3- 11, LS 1 p. 14-15, p. 30-32, p. 42-44, p. 46-52, LS 2 p. 79-82, LS 3 p. 92-98				LS 6 p. 295-304	What's the Big Question p. 3-18, LS 1 p. 55-58, LS 2 p. 102-105, p. 109-112, LS 3 p. 171-176, LS 4 p. 187-194, p. 234-238, LS 5 p. 254-294, p. 299-306		
MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and precipitate consumption of natural resources impact Earth's systems.		LS 3 p. 61-62					Address the Big Challenge p. 271-274	LS 4 p. 219-233			What's the Big Question p. 3-18, LS 1 p. 55-58, LS 3 p. 128-131, p. 145-150, LS 4 p. 190-194, p. 239-246		

MS. Engineering Design													
PBIS Units:	VIM	DIG	AST	ECE	AIA	LIV	WW	GEN	GFG	ENG	AQ	MBT	DIV
6th, 7th & 8th will cover all of these MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific impacts on people and the natural environment that may limit possible solutions.	What's the Big Challenge p. 5, p. 10-11, LS 1 p. 13-14, LS 2 p. 96, p. 101, p. 136, LS 3 p. 159, p. 192, p. 197-202	LS 3 p. 45-52, p. 90-101, p. 106-123			What's the Big Question p. 3- 10, LS 2 p. 91-96, LS 3 p. 142-155	LS 2 p. 56-59, LS 3 p. 114-119, p. 122-126, p. 140-148	What's the Big Challenge p. 3-8, LS 1 p. 59-60, LS 2 p. 122-126	What's the Big Question p. 9-12, LS 1 p. 34-36, LS 2 p. 66-74, Back to the Big Challenge p. 88-92, p. 159-163, p. 219-233	LS 2 p. 73-76, LS 4 p. 137-149	What's the Big Challenge p. 4-17, Back to the Big Challenge p. 36-37, p. 83, p. 140-141, p. 203, p. 254, LS 6 p. 295-303, p. 309-315	What's the Big Question p. 3-17, Back to the Big Question p. 55-58, p. 109-112, p. 171-176, LS 4 p. 215-230, p. 247-252, LS 5 p. 299-306	g What's the Big Question p. 3- 11, Back to the Big Question p. 35-37, p. 62-65, LS 4 p. 94-97, p. 107-114	
MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.	LS 1 p. 17-20, p. 23-24, p. 27-28, p. 30-33, p. 47-52, LS 2 p. 103-108, LS 3 p. 167-174, p. 197-202	LS 1 p. 6-25, LS 2 p. 26-38, LS 3 p. 67-78, p. 90-101, p. 106-123	LS 1 p. 21-27, LS 3 p. 121-132	LS 1 p. 52-54, LS 2 p. 83-85, LS 3 p. 92-95	What's the Big Question p. 3- 10, LS 2 p. 91-96, LS 3 p. 102-106, p. 142-155	LS 1 p. 35-41, LS 2 p. 56-59, LS 3 p. 114-119, p. 140-148	What's the Big Challenge p. 3-8, LS 1 p. 21-35, p. 59-60, LS 2 p. 122-126, LS 3 p. 166-168	LS 2 p. 40-44, p. 66-70, Back to the Big Challenge p. 88-92, p. 219-233	LS 1 p. 11-17, LS 2 p. 47-54, p. 73-76, LS 4 p. 137-149	What's the Big Challenge p. 15, Back to the Big Challenge p. 37, p. 81-84, p. 202-204, p. 254-256, LS 6 p. 309-315	Big Question p. 171-176, LS 4	What's the Big Question p. 3- 11, Back to the Big Question p. 35-37, p. 62-65, p. 94-95, LS 4 p. 96-97, p. 107-114	
MS-ETS1-3. Analyze data from tests to determine similarities and difference among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.	LS 1 p. 19-20, p. 23-24, p. 27-28, p. 30-33, p. 47-52, p. 60-62, p. 88-89, LS 2 p. 103-108, p. 136-141, LS 3 p. 161-174, p. 197-202	LS 1 p. 6-25, LS 2 p. 26-38, LS 3 p. 67-78, p. 90-101, p. 106-123	LS 1 p. 20-27, LS 3 p. 122-132		What's the Big Question p. 3- 10, LS 2 p. 91-96, LS 3 p. 102-106, p. 142-155	LS 2 p. 56-59, LS 3 p. 113-119, p. 122-126, p. 140-148		LS 2 p. 71-74, Back to the Big Challenge p. 88-92, p. 219-233	LS 1 p. 11-17, LS 2 p. 47-54, p. 73-76, LS 3 p. 120-123, LS 4 p. 137-142	LS 2 p. 64-69, Back to the Big Challenge p. 81-84, p. 139-141, p. 202-204, p. 254-256 LS 6 p. 309-315	Back to the Big Question p. 171-176, LS 4 p. 215-230, p. 247-252, LS 5 p. 299-306	What's the Big Question p. 3- 11, Back to the Big Question p. 35-37, p. 62-65, p. 94-95, LS 4 p. 96-97, p. 107-114	LS 1 p. 4-24, LS 2 p. 25-34, LS 3 p. 35-68, LS 4 p. 69-103
MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.	LS 1 p. 19-20, p. 23-24, p. 47-62, p. 83-87, p. 88, LS 2 p. 104-109, p. 136-141	LS 1 p. 6-25, LS 2 p. 26-38, LS 3 p. 67-78, p. 90-101, p. 106-123			What's the Big Question p. 3-10, LS 3 p. 142-155	LS 1 p. 17-20, p. 23-27, p. 33-41, LS 3 p. 114-119, p. 122-126		LS 2 p. 66-70, Back to / Address / Answer the Big Challenge p. 219-233	LS 1 p. 11-17, LS 2 p. 47-54, p. 73-76, LS 3 p. 105-109, LS 4 p. 137-142	LS 2 p. 64-69, Back to the Big Challenge p. 81-84, p. 139-141, p. 254-256, LS 6 p. 309-315	Back to the Big Question p. 171-176, LS 4 p. 247-252, LS 5 p. 299-306	What's the Big Question p. 3- 11, Back to the Big Question p. 35-37, p. 62-65, p. 94-95, LS 4 p. 96-97, p. 107-114	LS 1 p. 4-24, LS 2 p. 25-34, LS 3 p. 35-68, LS 4 p. 69-103

PBIS Units							
Abbreviation	Title						
VIM	Vehicles In Motion	8th	1x				
DIG	Digging In	Intro 6th,	1x				
AST	Astronomy	8th	1x				
ECE	Ever-Changing Earth	7th->8th-= 6th					
AIA	Animals In Action	Intro 7th	1x				
LIV	Living Together	7th=6th					
ww	Weather Watch	7th->6th					
GEN	Genetics	8th->7th->6th					
GFG	Good Friends and Germs 6 th ?						
ENG	Energy	8th> 7th=6th					
AQ	Air Quality	7 th	1x				
MBT	Moving Big Things	8 th	1x				
DIV	Diving Into Science	Intro 8 th	1x				