Curriculum Grid

	Next Generation Science Standards ● = addresses standard	ENERGY	Energy Transfer	Wind Energy	Solar Energy	Energy Efficiency	Electric Vehicles	FORCE AND MOTION	Gears	Inclined Plane	Friction	Velocity	Acceleration of Gravity	LIGHT	Light Intensity	HEAT AND TEMPERATURE	Freezing and Thermal Insulation	Heat Transfer	Convection
Practices																			
1	Asking questions		●	●	●	●	●		●	●	●	●	●		●		●	●	●
2	Developing and using models		●	●	●	●	●		●	●	●	●	●		●		●	●	●
3	Planning and carrying out investigations		●	●	●	●	●		●	●	●	●	●		●		●	●	●
4	Analyzing and interpreting data		●	●	●	●	●		●	●	●	●	●		●		●	●	●
5	Using mathematics, Informational and Computer Technology, and computational thinking		●	●	●	●	●		●	●	●	●	●		●		●	●	●
6	Constructing explanations and designing solutions		●	●	●	●	●		●	●	●	●	●		●		●	●	●
7	Engaging in argument from evidence		●	●	●	●	●		●	●	●	●	●		●		●	●	●
8	Obtaining, evaluating, and communicating information		●	●	●	●	●		●	●	●	●	●		●		●	●	●
Cross-cutting Concepts																			
1	Patterns		●	●	●	●	●		●	●	●	●			●		●	●	●
2	Cause and effect: Mechanism and explanation		●	●	●	●	●		●	●	●	●	●		●		●	●	●
3	Scale, proportion, and quantity		●	●	●	●	●		●	●	●	●	●		●		●	●	●
4	Systems and system models		●	●	●	●	●		●	●	●	●	●		●		●	●	●
5	Energy and matter: Flows, cycles, and conservation		●	●	●	●	●		●	●	●	●			●		●	●	●
6	Structure and function		●	●	●	●	●		●	●	●	●	●				●	●	●
7	Stability and change		●	●	●	●	●		●	●	●	●	●		●		●	●	●
Core Ideas: Physical Science																			
PS1	Structure and Properties of Matter																●		
PS2	Motion and stability: Forces and interactions		●	●		●	●		●	●	●	●	●						●
PS3	Energy		●	●	●	●	●		●	●	●				●		●	●	●
PS.4	Waves and their applications in technologies for information transfer				●										●			●	

STANDARD	GRADE	Common Core English Language Arts ● = addresses standard ◐ = partially addresses standard	ENERGY	Energy Transfer	Wind Energy	Solar Energy	Energy Efficiency	Electric Vehicles	FORCE AND MOTION	Gears	Inclined Plane	Friction	Velocity	Acceleration of Gravity	LIGHT	Light Intensity	HEAT AND TEMPERATURE	Freezing and Thermal Insulation	Heat Transfer	Convection
Speaking and Listening Standards - Presentation of Knowledge and Ideas																				
	6-8	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on topics, texts, and issues, building on others' ideas and expressing their own clearly.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
	6	Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
	7	Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
	8	Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
	6	Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
	7	Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
	8	Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
Reading Standards for Literacy in Science and Technical Subjects																				
1	6-8	Cite specific textual evidence to support analysis of science and technical texts.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
3	6-8	Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
4	6-8	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6–8 texts and topics.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
7	6-8	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).		●	●	●	●	●		●	●	●	●	●		●		●	●	●
9	6-8	Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
10	6-8	By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.		●	●	●	●	●		●	●	●	●	●		●		●	●	●

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Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6–12																				
1	6-8	"Write arguments focused on discipline-specific content."		●	●	●	●	●		●	●	●	●	●		●		●	●	●
2	6-8	Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
4	6-8	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
5	6-8	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
6	6-8	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
7	6-8	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐
10	6-8	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐

	Common Core Mathematics Standards ● = addresses standard ◐ = partially addresses standard	ENERGY	Energy Transfer	Wind Energy	Solar Energy	Energy Efficiency	Electric Vehicles	FORCE AND MOTION	Gears	Inclined Plane	Friction	Velocity	Acceleration of Gravity	LIGHT	Light Intensity	HEAT AND TEMPERATURE	Freezing and Thermal Insulation	Heat Transfer	Convection
Practices																			
1,1	Make sense of problems and persevere in solving them.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
1,2	Reason abstractly and quantitatively.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
1,3	Construct viable arguments and critique the reasoning of others.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
1,4	Model with mathematics.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
1,5	Use appropriate tools strategically.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
1,6	Attend to precision.		●	●	●	●	●		●	●	●	●	●		●		●	●	●
1,7	Look for and make use of structure.		●	●	●	●	●		●	●		●			●		●	●	●
1,8	Look for and express regularity in repeated reasoning.				◐		●		◐			●			●				
Ratios and Proportional Relationships																			
Grade 6	Understand ratio concepts and use ratio reasoning to solve problems		●				●		●	●		◐	◐						
Grade 7	Analyze proportional relationships and use them to solve real-world and mathematical problems.		◐			◐	●		◐			●	◐						
The Number System																			
Grade 6	Compute fluently with multi-digit numbers and find common factors and multiples		◐	◐	◐	◐	◐		◐	◐		◐	◐		◐		◐		
Grade 6	Apply and extend previous understandings of numbers to the system of rational numbers											◐					●		
Grade 7	Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.		◐	◐	◐	◐	◐			◐					◐				
Expressions and Equations																			
Grade 6	Apply and extend previous understandings of arithmetic to algebraic expressions											●	●						
Grade 6	Represent and analyze quantitative relationships between dependent and independent variables		●	●	●	●	●		●	●		●			●		●		
Grade 7	Solve real-life and mathematical problems using numerical and algebraic expressions and equations									◐	◐	●	●		◐				
Grade 8	Work with radicals and integer exponents											◐	●		◐				
Grade 8	Understand the connections between proportional relationships, lines, and linear equations		◐			◐	●								●				
Functions																			
Grade 8	Define, evaluate and compare functions.		◐	◐	◐	◐	◐			◐		●	◐		◐				
Grade 8	Use functions to model relationships between quantities		◐	◐	◐	◐	◐			◐		●	◐		◐				
Geometry																			
Grade 6	Solve real-world and mathematical problems involving area, surface area and volume.				◐	◐									◐				
Grade 7	Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.				●	●				●	●				◐				
Statistics and Probability																			
Grade 6	Develop understanding of statistical variability		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐		◐	◐	◐