

Curriculum Grid

Objective Number	Next Generation Science Standards ● = addresses standard ◐ = partially addresses standard	Make It Move					Make It Smarter					Make a System								
		Video	With Wheels	And Display Speed	Without Wheels	Up an Incline	In a Pattern	Video	With a Sensor	And Faster	And Adaptable	With Communication	And Healthier	Video	That Moves a Ball	That Picks and Places	That Manufactures	That Sorts Colors	That Communicates	
Practices																				
1	Asking questions	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2	Developing and using models	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3	Planning and carrying out investigations	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4	Analyzing and interpreting data	◐	◐	◐	◐	◐	●	◐	●	◐	◐	●	◐	◐	◐	◐	◐	◐	◐	◐
5	Using mathematics and computational thinking	●	●	●	◐	◐	◐	◐	●	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
6	Constructing explanations and designing solutions	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7	Engaging in argument from evidence	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
8	Obtaining, evaluating and communicating information	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Crosscutting 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	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐			
Physical Science																				
MS-PS1	Matter and its Interactions																			
MS-PS2	Motion and Stability: Forces and Interactions	●	●	●	●	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
MS-PS3	Energy	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
MS-PS4	Waves and Their Applications in Technologies for Information Transfer						◐	◐	◐	◐	◐									◐
Life Science																				
MS-LS1	From Molecules to Organisms																			
MS-LS2	Ecosystems								◐		◐	◐								
MS-LS3	Heredity																			
MS-LS4	Biological Evolution						◐	◐	◐											
Earth and Space Science																				
MS-ESS1	Earth's Place in the Universe																			
MS-ESS2	Earth's Systems													◐						
MS-ESS3	Earth and Human Activity																			
Engineering Design																				
MS-ETS1	Engineering Design	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Objective Number	Common Core Mathematics Standards ● = addresses standard ◐ = partially addresses standard	Make It Move					Make It Smarter					Make a System							
		Video	With Wheels	And Display Speed	Without Wheels	Up an Incline	In a Pattern	Video	With a Sensor	And Faster	And Adaptable	With Communication	And Healthier	Video	That Moves a Ball	That Picks and Places	That Manufactures	That Sorts Colors	That Communicates
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	Apply and extend previous understandings of multiplication and division to divide fractions by fractions		◐	◐															
Grade 6	Compute fluently with multidigit 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		●	●		●	●		●		●		●						
Grade 8	Understand that there are numbers that are not rational, and approximate them by rational numbers		●	●															
Expressions and Equations																			
Grade 6	Apply and extend previous understandings of arithmetic to algebraic expressions		●	●		●			●		●								
Grade 6	Reason about and solve one-variable equations and inequalities																		
Grade 6	Represent and analyze quantitative relationships between dependent and independent variables		●	●															
Grade 7	Use properties of operations to generate equivalent expressions																		
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									●									
Grade 8	Analyze and solve linear equations and pairs of simultaneous linear equations																		
Functions																			
Grade 8	Define, evaluate and compare functions																		
Grade 8	Use functions to model relationships between quantities																		

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Continued from previous page

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Geometry																		
Grade 6	Solve real-world and mathematical problems involving area, surface area and volume																	
Grade 7	Draw, construct and describe geometrical figures and the relationship between them						●									●		
Grade 7	Solve real-life and mathematical problems involving angle measure, area, surface area and volume															●	●	
Grade 8	Understand congruence and similarity using physical models, transparencies or geometry software	◐	◐	◐	◐	◐			◐	◐	◐	◐	◐		◐	◐	◐	◐
Grade 8	Understand the Pythagorean theorem						◐											
Grade 8	Solve real-world and mathematical problems involving volume of cylinders, cones and spheres																	
Statistics and Probability																		
Grade 6	Develop an understanding of statistical variability																	
Grade 6	Summarize and describe distributions																	
Grade 7	Use random sampling to draw inferences about a population																	
Grade 7	Investigate chance processes and develop, use and evaluate probability models																	
Grade 8	Investigate patterns of association in bivariate data																	

Standard	ITEEA Standards for Technological Literacy	Make It Move					Make It Smarter					Make a System						
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The Nature of Technology																		
1	Students will develop an understanding of the characteristics and scope of technology	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀
2	Students will develop an understanding of the core concepts of technology	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀
3	Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀	◀
Technology and Society																		
4	Students will develop an understanding of the cultural, social, economic and political effects of technology	◀						◀						◀				
5	Students will develop an understanding of the effects of technology on the environment	◀						◀						◀				
6	Students will develop an understanding of the role of society in the development and use of technology	◀						◀						◀				
7	Students will develop an understanding of the influence of technology on history	◀						◀						◀				
Design																		
8	Students will develop an understanding of the attributes of design		◀	◀	◀	◀	◀		◀	◀	◀	◀	◀		◀	◀	◀	◀
9	Students will develop an understanding of engineering design		◀	◀	◀	◀	◀		◀	◀	◀	◀	◀		◀	◀	◀	◀
10	Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving		◀	◀	◀	◀	◀		◀	◀	◀	◀	◀		◀	◀	◀	◀
Abilities for a Technological World																		
11	Students will develop abilities to apply the design process		◀	◀	◀	◀	◀		◀	◀	◀	◀	◀		◀	◀	◀	◀
12	Students will develop abilities to use and maintain technological products and systems	◀	◀	◀	◀	◀	◀		◀	◀	◀	◀	◀		◀	◀	◀	◀
13	Students will develop abilities to assess the impact of products and systems		◀	◀	◀	◀	◀		◀	◀	◀	◀	◀		◀	◀	◀	◀
The Designed World																		
14	Students will develop an understanding of and be able to select and use medical technologies								◀						◀			
15	Students will develop an understanding of and be able to select and use agricultural and related biotechnologies								◀						◀			
16	Students will develop an understanding of and be able to select and use energy and power technologies	◀	◀	◀	◀	◀	◀		◀	◀	◀	◀	◀		◀	◀	◀	◀
17	Students will develop an understanding of and be able to select and use information and communication technologies								◀			◀			◀			◀
18	Students will develop an understanding of and be able to select and use transportation technologies	◀	◀	◀	◀	◀	◀								◀		◀	◀
19	Students will develop an understanding of and be able to select and use manufacturing technologies														◀		◀	
20	Students will develop an understanding of and be able to select and use construction technologies																	

Standard	ISTE National Education Technology Standards	Make It Move					Make It Smarter					Make a System						
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1. Creativity and Innovation																		
Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.																		
a	Apply existing knowledge to generate new ideas, products or processes		●	●	●	●	●		●	●	●	●	●		●	●	●	●
b	Create original works as a means of personal or group expression		●	●	●	●	●		●	●	●	●	●		●	●	●	●
c	Use models and simulations to explore complex systems and issues		●	●	●	●	●		●	●	●	●	●		●	●	●	●
d	Identify trends and forecast possibilities	◐						◐						◐				
2. Communication and Collaboration																		
Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.																		
a	Interact, collaborate and publish with peers, experts or others employing a variety of digital environments and media																	
b	Communicate information and ideas effectively to multiple audiences using a variety of media and formats		●	●	●	●	●		●	●	●	●	●		●	●	●	●
c	Develop cultural understanding and global awareness by engaging with learners of other cultures																	
d	Contribute to project teams to produce original works or solve problems		●	●	●	●	●		●	●	●	●	●		●	●	●	●
3. Research and Information Fluency																		
Students apply digital tools to gather, evaluate and use information.																		
a	Plan strategies to guide inquiry		●	●	●	●	●		●	●	●	●	●		●	●	●	●
b	Locate, organize, analyze, evaluate, synthesize and ethically use information from a variety of sources and media	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
c	Evaluate and select information sources and digital tools based on the appropriateness to specific tasks		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐
d	Process data and report results		●	●	●	●	●		●	●	●	●	●		●	●	●	●
4. Critical Thinking, Problem Solving and Decision Making																		
Students use critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.																		
a	Identify and define authentic problems and significant questions for investigation		●	●	●	●	●		●	●	●	●	●		●	●	●	●
b	Plan and manage activities to develop a solution or complete a project		●	●	●	●	●		●	●	●	●	●		●	●	●	●
c	Collect and analyze data to identify solutions and/or make informed decisions		●	●	●	●	●		●	●	●	●	●		●	●	●	●
d	Use multiple processes and diverse perspectives to explore alternative solutions		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐
5. Digital Citizenship																		
Students understand human, cultural and societal issues related to technology and practice legal and ethical behavior.																		
a	Advocate and practice safe, legal, and responsible use of information and technology																	
b	Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐
c	Demonstrate personal responsibility for lifelong learning																	
d	Exhibit leadership for digital citizenship																	
6. Technology Operations and Concepts																		
Students demonstrate a sound understanding of technology concepts, systems and operations.																		
a	Understand and use technology systems		●	●	●	●	●		●	●	●	●	●		●	●	●	●
b	Select and use applications effectively and productively		◐	◐	◐	◐	◐		◐	◐	◐	◐	◐		◐	◐	◐	◐
c	Troubleshoot systems and applications		●	●	●	●	●		●	●	●	●	●		●	●	●	●
d	Transfer current knowledge to learning of new technologies		●	●	●	●	●		●	●	●	●	●		●	●	●	●