

EYES ON STEAM IN THE REAL WORLD

English Language Arts Common Core State Standards

Math Common Core State Standards*

Next Generation Science Standards**

GRADES 6-8

ENGLISH LANGUAGE ARTS STANDARDS*				
GRADE 6	Activity 1	Activity 2	Activity 3	Bonus Activity
SPEAKING & LISTENING				
Comprehension and Collaboration				
CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.	✓	✓	✓	✓
CCSS.ELA-LITERACY.SL.6.2 Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it relates to a topic, text, or issue under study.	✓	✓	✓	✓
Presentation of Knowledge and Ideas				
CCSS.ELA-LITERACY.SL.6.4 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.	✓		✓	✓
READING: INFORMATIONAL TEXT				
Key Ideas and Details				
CCSS.ELA-LITERACY.RI.6.2 Determine a central idea of a text, and how it is conveyed through particular details; provide a summary of the text distinct from personal opinion or judgment.	✓			
Craft and Structure				
CCSS.ELA-LITERACY.RI.6.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.	✓	✓	✓	✓
Integration of Knowledge and Ideas				
CCSS.ELA-LITERACY.RI.6.7 Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.	✓	✓	✓	✓
WRITING				
Text Types and Purposes				
CCSS.ELA-LITERACY.W.6.1 Write arguments to support claims with clear reasons and relevant evidence.			✓	
Production and Distribution of Writing				
CCSS.ELA-LITERACY.W.6.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.			✓	

ENGLISH LANGUAGE ARTS STANDARDS*				
GRADE 6 (continued)	Activity 1	Activity 2	Activity 3	Bonus Activity
Research to Build and Present Knowledge				
CCSS.ELA-LITERACY.W.6.8 Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.	✓		✓	
CCSS.ELA-LITERACY.W.6.9 Draw evidence from literary or informational text to support analysis, reflection, and research.	✓		✓	✓
LANGUAGE				
Conventions of Standard English				
CCSS.ELA-LITERACY.L.6.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	✓	✓	✓	✓
CCSS.ELA-LITERACY.L.6.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	✓		✓	
Knowledge of Language				
CCSS.ELA.LITERACY.6.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.	✓	✓	✓	✓

MATH STANDARDS*				
GRADE 6	Activity 1	Activity 2	Activity 3	Bonus Activity
RATIOS AND PROPORTIONAL RELATIONSHIPS				
Understand ratio concepts and use ratio reasoning to solve problems.				
CCSS.Math.Content.6.RPA.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.		✓		
CCSS.Math.Content.6.RPA.3 Use rate and rate reasoning to solve real world and mathematical problems, e.g. by reasoning tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.		✓		
THE NUMBER SYSTEM				
Apply and extend previous understandings of multiplication and division to divide fractions by fractions.				
CCSS.Math.Content.6.NS.A.1 Interpret and compute quotients of fractions and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.		✓		
Compute fluently with multi-digit numbers and find common factors and multiples.				
CCSS.Math.Content.6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.		✓		
Apply and extend previous understanding of numbers to the system of rational numbers.				
CCSS.Math.Content.6.NS.C.5 Understand that positive and negative numbers are used together to describe quantities having opposite direction or values; use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of zero in each situation.		✓		

ENGLISH LANGUAGE ARTS STANDARDS*				
GRADE 7	Activity 1	Activity 2	Activity 3	Bonus Activity
SPEAKING & LISTENING				
Comprehension and Collaboration				
CCSS.ELA-LITERACY.SL.7.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.	✓	✓	✓	✓
CCSS.ELA-LITERACY.SL.7.2 Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.	✓	✓	✓	✓
Presentation of Knowledge and Ideas				
CCSS.ELA-LITERACY.SL.7.4 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.	✓		✓	✓
READING: INFORMATIONAL TEXT				
Key Ideas and Details				
CCSS.ELA-LITERACY.RI.7.2 Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.	✓			
Craft and Structure				
CCSS.ELA-LITERACY.RI.7.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning or tone.	✓	✓	✓	✓
WRITING				
Text Types and Purposes				
CCSS.ELA-LITERACY.W.7.1 Write arguments to support claims with clear reasons and relevant evidence.			✓	
Production and Distribution of Writing				
CCSS.ELA-LITERACY.W.7.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.			✓	
Research to Build and Present Knowledge				
CCSS.ELA-LITERACY.W.7.7 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.	✓		✓	
CCSS.ELA-LITERACY.W.7.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	✓		✓	
CCSS.ELA-LITERACY.W.7.9 Draw evidence from literary or informational text to support analysis, reflection, and research.	✓		✓	✓

ENGLISH LANGUAGE ARTS STANDARDS*				
GRADE 7 (continued)	Activity 1	Activity 2	Activity 3	Bonus Activity
LANGUAGE				
Conventions of Standard English				
CCSS.ELA-LITERACY.L.7.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	✓	✓	✓	✓
CCSS.ELA-LITERACY.L.7.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	✓		✓	
Knowledge of Language				
CCSS.ELA.LITERACY.7.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.	✓	✓	✓	✓

MATH STANDARDS*				
GRADE 7	Activity 1	Activity 2	Activity 3	Bonus Activity
RATIOS AND PROPORTIONAL RELATIONSHIPS				
Analyze proportional relationships and use them to solve real-world and mathematical problems.				
CCSS.Math.Content.7.RPA.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.		✓		
CCSS.Math.Content.7.RPA.2 Recognize and represent proportional relationships between quantities.		✓		
CCSS.Math.Content.7.RPA.3 Use proportional relationships to solve multi-step ratio and percent problems.		✓		
THE NUMBER SYSTEM				
Apply and extend previous understandings of operations with fractions.				
CCSS.Math.Content.7.NS.A.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical line diagram.		✓		
CCSS.Math.Content.7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.		✓		
CCSS.Math.Content.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.		✓		
EXPRESSIONS AND EQUATIONS				
Solve real-life and mathematical problems using numerical and algebraic expressions and equations.				
CCSS.Math.Content.7.EE.B.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically.		✓		

ENGLISH LANGUAGE ARTS STANDARDS*				
GRADE 8	Activity 1	Activity 2	Activity 3	Bonus Activity
SPEAKING & LISTENING				
Comprehension and Collaboration				
CCSS.ELA-LITERACY.SL.8.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.	✓	✓	✓	✓
CCSS.ELA-LITERACY.SL.8.2 Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives behind its presentation.	✓	✓	✓	✓
Presentation of Knowledge and Idea				
CCSS.ELA-LITERACY.SL.8.4 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.	✓		✓	✓
READING: INFORMATIONAL TEXT				
Key Ideas and Details				
CCSS.ELA-LITERACY.RI.8.2 Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.	✓			
Craft and Structure:				
CCSS.ELA-LITERACY.RI.8.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.	✓	✓	✓	✓
WRITING				
Text Types and Purposes				
CCSS.ELA-LITERACY.W.8.1 Write arguments to support claims with clear reasons and relevant evidence.			✓	
Production and Distribution of Writing				
CCSS.ELA-LITERACY.W.8.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.			✓	
Research to Build and Present Knowledge				
CCSS.ELA-LITERACY.W.8.7 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.	✓		✓	
CCSS.ELA-LITERACY.W.8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	✓		✓	
CCSS.ELA-LITERACY.W.8.9 Draw evidence from literary or informational text to support analysis, reflection, and research.	✓		✓	✓

ENGLISH LANGUAGE ARTS STANDARDS*				
GRADE 8 (continued)	Activity 1	Activity 2	Activity 3	Bonus Activity
LANGUAGE				
Conventions of Standard English				
CCSS.ELA-LITERACY.L.8.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	✓	✓	✓	✓
CCSS.ELA-LITERACY.L.8.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	✓		✓	
Knowledge of Language				
CCSS.ELA.LITERACY.8.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.	✓	✓	✓	✓

MATH STANDARDS*				
GRADE 8	Activity 1	Activity 2	Activity 3	Bonus Activity
THE NUMBER SYSTEM				
Know that there are numbers that are not rational, and approximate them by rational numbers.				
CCSS.Math.Content.8.NS.A.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.		✓		

NEXT GENERATION SCIENCE STANDARDS**				
Middle School (Grades 6-8)	Activity 1	Activity 2	Activity 3	Bonus Activity
MS-PS-4-2 Waves and Their Applications in Technologies for Information Transfer				
Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.	✓			✓
MS-LS-1-2 From Molecules to Organisms: Structures and Processes				
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-LS-1-3 From Molecules to Organisms: Structures and Processes				
Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	✓			
MS-LS-1-8 From Molecules to Organisms: Structures and Processes				
Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.	✓			
MS-ETS1-1 Engineering Design				
Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.				✓

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** NGSS Lead States. 2013. Next Generation Science Standards: For States, By States. Washington, DC: The National Academies Press.