

<b>Next Generation Science Standard</b>	<b>Correlation to Common Core Math Standard</b>	<b>iTEAMS Theme &amp; Connections to other NGSS</b>
<b>3<sup>rd</sup> Grade</b>		
3-ESS3-1 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics.	<b>Structures</b>  K.ESS3.B ; K.ETS1.A ; 4.ESS3.B; 4.ETS1.A ; MS.ESS3.B
<b>4<sup>th</sup> Grade</b>		
4-PS3-4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.*	4.OA.A.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	<b>Structures, Waterways, Transportation</b>  K.ETS1.A ; 2.ETS1.B ; 5.PS3.D ; 5.LS1.C ; MS.PS3.A ; MS.PS3.B; MS.ETS1.B ; MS.ETS1.C
4-PS4-3 Waves and Their Applications in Technologies for Information Transfer		<b>Waterways, Transportation</b>  K.ETS1.A ; 2.ETS1.B ; 2.ETS1.C; 3.PS2.A ; MS.PS4.C ; MS.ETS1.B
4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. 4.OA.A.1 Interpret a multiplication equation as a comparison, Represent verbal statements of multiplicative comparisons as multiplication equations.	<b>Structures, Waterways</b>  5.ESS3.C ; MS.PS3.D ; MS.ESS2.A ; MS.ESS3.A ; MS.ESS3.C ; MS.ESS3.D
4-ESS3-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. 4.OA.A.1 Interpret a multiplication equation as a comparison, Represent verbal statements of multiplicative comparisons as multiplication equations.	<b>Structures</b>  MS.ESS2.A ; MS.ESS3.B; MS.ETS1.B
<b>3<sup>rd</sup> – 5<sup>th</sup> Grade</b>		
3-5-ETS1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. 3- 5.OA Operations and Algebraic Thinking	<b>Structures, Waterways, Transportation</b>  4-PS3-4, K-2.ETS1.A ; MS.ETS1.A ; MS.ETS1.B
3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. 3- 5.OA Operations and Algebraic Thinking	<b>Structures, Waterways, Transportation</b>  3-5-ETS1.B, 4-ESS3-2, K-2.ETS1.A ; K-2.ETS1.B ; K-2.ETS1.C ; MS.ETS1.B ; MS.ETS1.C
<b>Middle School (6<sup>th</sup> – 8<sup>th</sup> Grade)</b>		
MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.		<b>Waterways, Transportation</b>  MS.LS2.A ; MS.LS4.D ; MS.ESS3.A ; MS.ESS3.C; HS.PS1.A ; HS.LS2.A ; HS.LS4.D; HS.ESS3.A

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MS-PS2-1. Apply Newton’s Third Law to design a solution to a problem involving the motion of two colliding objects.	MP.2 Reason abstractly and quantitatively. 6.NS.C.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values; use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. 6.EE.A.2 Write, read, and evaluate expressions in which letters stand for numbers. 7.EE.B.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form, using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. 7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	<b>Transportation</b>  MS.PS3.C; 3.PS2.A ; HS.PS2.A
MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.	MP.4 Model with mathematics. 6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems.	<b>Waterways</b> MS.ESS3.C; HS.LS2.A ; HS.LS2.C ; HS.LS4.D; HS.ESS3.A ; HS.ESS3.C ; HS.ESS3.D
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.	6.EE.B.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. 7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	<b>Structures, Waterways, Transportation</b> MS.PS1.A ; MS.PS1.B ; MS.ESS2.D 4.PS3.D ; 4.ESS3.A ; HS.PS3.B ; HS.LS1.C ; HS.ESS2.A ; HS.ESS2.B ; HS.ESS2.C ; HS.ESS3.A
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.	MP.2 Reason abstractly and quantitatively. 6.EE.B.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. 7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	<b>Structures, Waterways</b> MS.PS3.C; 3.ESS3.B ; 4.ESS3.B ; HS.ESS2.B ; HS.ESS2.D ; HS.ESS3.B ; HS.ESS3.D

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MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment	6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. 7.RP.A.1 Recognize and represent proportional relationships between quantities. 6.EE.B.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. 7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	<b>Structures, Waterways, Transportation</b>  MS.LS2.A ; MS.LS2.C , MS.LS4.D 3.LS2.C ; 3.LS4.D ; 5.ESS3.C ; HS.LS2.C ; HS.LS4.C ; HS.LS4.D ; HS.ESS2.C ; HS.ESS2.D ; HS.ESS2.E ; HS.ESS3.C ; HS.ESS3.D
MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.	6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. 7.RP.A.1 Recognize and represent proportional relationships between quantities. 6.EE.B.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. 7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	<b>Waterways, Transportation</b>  MS.LS2.A ; MS.LS4.D ; 3.LS2.C ; 3.LS4.D ; 5.ESS3.C ; HS.LS2.A ; HS.LS2.C ; HS.LS4.C ; HS.LS4.D ; HS.ESS2.E ; HS.ESS3.A ; HS.ESS3.C
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 principles and potential impacts on people and the natural environment that may limit possible solutions.	MP.2 Reason abstractly and quantitatively. 7.EE.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. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.	<b>Structures, Waterways, Transportation</b>  MS-ETS1.A: MS-PS3-3; 3-5.ETS1.A ; 3-5.ETS1.C ; HS.ETS1.A ; HS.ETS1.B