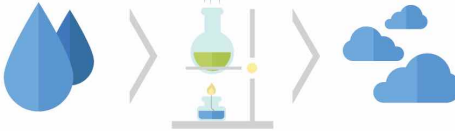





# 7th Grade NGSS Integrated Course Sequence

Start the year off with a strong foundation. Begin with a unit on **Design Thinking** or **Scientific Method**.

<p><b>Design Thinking</b></p> 	<p><i>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</i></p> <p><i>MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</i></p>	<p><b>Scientific Method</b></p> 	<p><i>MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</i></p>
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Disciplinary Core Ideas	<p><b>Matter and its Interactions</b></p> <p>9-12 weeks</p>	<p><b>From Molecules to Organisms</b></p> <p>2-3 weeks</p>	<p><b>Ecosystems</b></p> <p>6-8 weeks</p>	<p><b>Earth's Systems and Human Activity</b></p> <p>6-9 weeks</p>
				

**Performance Expectations**

**MS-PS1-1.** Develop models to describe the atomic composition of simple molecules and extended structures.

**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.

**MS-PS1-3.** Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

**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.

**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.

*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.*

**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.

**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.

**MS-LS2-3.** Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

**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.

**MS-LS2-2.** Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

**MS-LS2-4.** Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

**MS-LS2-5.** Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

*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.*

*MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.*











**MS-ESS2-1.** Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

**MS-ESS2-2.** Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

**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.

**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.

**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.

Mosa Mack Units	<p>Atoms &amp; Molecules</p> 	<p>States of Matter</p> 	<p>Physical vs. Chemical Changes</p> 	<p>Photosynthesis</p> 	<p>Interaction of Organisms</p> 	<p>Biodiversity</p> 	<p>Rock Cycle</p> 	<p>Plate Tectonics</p> 	<p>Earthquakes and Volcanoes</p> 	<p>Renewable Resources</p> 
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