

6th Grade General Science - Westmont Junior High



School

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Course Description

The 6th grade science curriculum follows the Next Generation Science Standards (NGSS). Students will engage in observing phenomena, asking questions, carrying out investigations, designing solutions to problems, and analyzing data to determine answers to scientific questions.

Next Generation Science Standards (NGSS)

The NGSS are internationally-benchmarked standards that provide a vision for K-12 science and engineering education and set the stage for a significant shift in how those subjects may be viewed and taught in Illinois and across the nation. To learn more about the NGSS, visit www.nextgenscience.org.

Course Scope and Sequence:

Introduction to Science

Students will engage in scientific processes to construct explanations about everyday phenomena.



Life Science - Ecosystems & Cells

Students will investigate how populations in ecosystems change and adapt due to environmental factors. Students will investigate the structures and functions of plant, animal, and bacterial cells.

Physical Science - Atoms, Molecules, Changes in States of Matter

Students will understand how matter behaves in its different states. They will create and use models to demonstrate how atoms and molecules create the visible world around us.

Earth Science - The Rock Cycle and The Geologic Time Scale

Students will understand the cycling of Earth's materials from the crystallization of minerals to the changes that occur in rocks through natural Earth processes. Students will investigate how the geologic time scale can provide clues to the history of our Earth.

Space & Technology - Earth, Sun, & Moon

Students will understand how the Earth, Sun, & Moon create night sky observations through gravitational movement. Students will use models to investigate varying scales and quantities within the solar system. Students will investigate design solutions for survival outside of our Earth.

Engineering Basics

Students will define criteria and constraints of design challenges, design and create possible solutions for problems, and evaluate the performance of differing solutions.

Class Supplies

-Agenda -CHARGED Chromebook -Headphones/earbuds -Writing utensil -Notebook (to be kept in classroom)

Essential Standards (NGSS): By the end of **Sixth Grade Science**, students who demonstrate understanding can...

<p>Quarter 1: Classroom & Community Science Processes & Skills Life Science (Cells, Ecosystems)</p>	<p>MS-LS1-1: Conduct an investigation to provide evidence that living things are made of cells</p> <p>MS-LS1-2: Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.</p> <p>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.</p>	
<p>Quarter 2: Physical Science (Matter)</p>	<p>MS-PS1-1: Develop models to describe the atomic composition of simple molecules and extended structures.</p> <p>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.</p> <p>MS-ESS2-4 Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity</p>	
<p>Quarter 3: Earth Science -Geologic Time Scale -Rock Cycle</p>	<p>MS-ESS1-4: Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.</p> <p>MS-ESS2-2: Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.</p> <p>MS-LS4-1: Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth.</p> <p>MS-ESS2-1: Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.</p>	
<p>Quarter 4: Space & Technology Earth, Sun, Moon System</p> <p>Mini-Engineering Projects</p>	<p>MS-ESS1-1: Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.</p> <p>MS-ESS1-3: Analyze and interpret data to determine scale properties of objects in the solar system.</p> <p>MS-ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution</p> <p>MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p> <p>MS-ETS1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.</p> <p>MS-ETS1-4: Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.</p>	

Grading Policy:

Assessments (Tests & Projects)	50%
Classwork	50%

Classroom and Community:

Students are expected to follow the WJHS student behavioral matrix which includes three pillars of expectations (be respectful, be responsible, and be safe). If a student does not follow these expectations and requirements, I will conference with the student to problem solve. If expectations are still not met after the conference, parents will be contacted. Students may be referred to administration if behaviors persist.

Parents:

Parents/Guardians are a key component to student success. It is required that each student review the syllabus with their parents/guardians. It is also expected that parents check Otus weekly for updates on grades. Please feel free to contact me at any time with your questions and/or concerns.