

Course Title

Earth and Space Science



**INNOVATIVE**  
ARTS ACADEMY

Course Overview

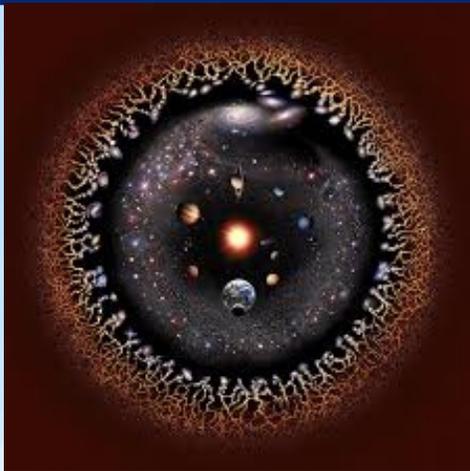
The 7th Grade Earth & Space Science course explores Earth's systems and its place in the universe. Aligned with Pennsylvania STEELS standards, this year-long program encourages students to investigate astronomy, Earth's dynamic systems, weather, climate, and resource sustainability through inquiry-based lessons, hands-on labs, simulations, and STEM challenges.

Unit Title

Earth's Place in the Universe

Time Frame

6 Weeks



Unit Title

Earth's Systems

Time Frame

7 Weeks



Unit Title

Weather and Climate

Time Frame

6 Weeks



Unit Title

Earth's Resources and Sustainability

Time Frame

5 Weeks



Focus of the Unit

- The Solar System
- Stars and Galaxies

Focus of the Unit

- Earth's Structure
- Plate Tectonics & Surface Processes

Focus of the Unit

- Atmospheric Dynamics
- Climate Systems

Focus of the Unit

- Natural Resources
- Human Impact & Sustainability

<b>Unit Title</b>	<b>Earth's Place in the Universe</b>
<b>Time Frame</b>	6 Weeks



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	<b>Essential Question(s)</b>
	<ul style="list-style-type: none"> <li>• What objects make up our solar system and how do they move?</li> <li>• How does gravity influence motion in space?</li> <li>• How do stars change over time?</li> <li>• What is our place in the universe?</li> </ul>

	<b>Focus of the Unit</b>
	Explore space systems, gravity, the life cycle of stars, and the scale of the universe.

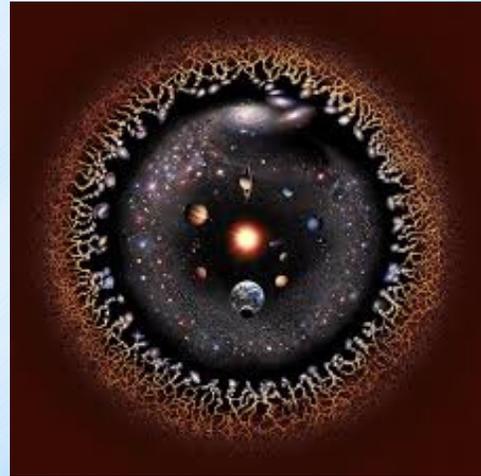
<b>Standards</b>	<b>3.3.6-8.B: Solar System &amp; Gravity</b> <b>3.3.6-8.C: Stars and Galaxies</b>
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<b>Learning Targets</b>
I can identify the planets and other objects in our solar system.

<b>Learning Targets</b>
I can describe how gravity affects motion in space.

<b>Learning Targets</b>
I can explain the life cycle of stars.

<b>Learning Targets</b>
I can compare different types of galaxies and explain our place in the universe.



<b>Resources</b>	McGraw Hill Inspire Science textbook, digital tools like Google Slides and Schoology, activities like solar system modeling, star charts, and simulations, and games like Kahoot for review.
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<b>Unit Title</b>	<b>Earth's Systems</b>
<b>Time Frame</b>	7 Weeks



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	<b>Essential Question(s)</b>
	<p>What are the layers of the Earth?          How do tectonic plates shape Earth's surface?          How do weathering, erosion, and soil formation change the landscape?          What can fossils tell us about Earth's history?</p>

	<b>Focus of the Unit</b>
	<p>Explore Earth's layers, tectonic movement, surface changes, and fossil evidence.</p>

<b>Standards</b>	<p>3.3.6-8.E: Earth's Interior &amp; Tectonics          3.3.6-8.F: Weathering, Erosion, and Soils          3.3.6-8.G: Fossils and Plate Movements</p>
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<b>Learning Targets</b>
I can model the layers of Earth.

<b>Learning Targets</b>
I can explain how tectonic plates move and what they cause.

<b>Learning Targets</b>
I can describe how weathering and erosion shape landforms.

<b>Learning Targets</b>
I can use fossils to understand Earth's history.



<b>Resources</b>	<p>McGraw Hill Inspire Science, Google Slides, interactive labs and models (like tectonic plate puzzles), fossil simulations, and games like Blooket or Kahoot.</p>
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<b>Unit Title</b>	<b>Weather and Climate</b>
<b>Time Frame</b>	6 Weeks



**INNOVATIVE**  
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	<b>Essential Question(s)</b>
	<p>What is the structure of Earth's atmosphere?          How do air masses and ocean currents influence weather and climate?          What causes severe weather?          How is Earth's climate changing?</p>

	<b>Focus of the Unit</b>
	<p>Investigate atmospheric processes, extreme weather, and climate change.</p>

<b>Standards</b>	<p>3.3.6-8.I: Atmosphere and Oceans          3.3.6-8.J: Weather Systems          3.3.6-8.K: Climate and Climate Change</p>
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<b>Learning Targets</b>
<p>I can describe the layers and gases in the atmosphere.</p>

<b>Learning Targets</b>
<p>I can analyze how air masses create weather patterns.</p>

<b>Learning Targets</b>
<p>I can explain the causes and effects of severe weather.</p>

<b>Learning Targets</b>
<p>I can interpret climate data and identify human impacts.</p>



<b>Resources</b>	<p>McGraw Hill Inspire Science, simulations of air masses and storms, real-world weather data, and creative review tools.</p>
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<b>Unit Title</b>	<b>Earth's Resources and Sustainability</b>
<b>Time Frame</b>	5 Weeks



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	<b>Essential Question(s)</b>
	<p>What are the types of natural resources?          How does resource extraction affect Earth's systems?          What actions support sustainability?          How do human choices impact Earth's future?</p>

	<b>Focus of the Unit</b>
	<p>Examine resource use, environmental impact, and sustainable solutions.</p>

<b>Standards</b>	3.3.6-8.K: Human Impact & Sustainability
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<b>Learning Targets</b>
I can classify renewable and nonrenewable resources.

<b>Learning Targets</b>
I can describe how extracting resources affects the environment.

<b>Learning Targets</b>
I can evaluate sustainable practices.

<b>Learning Targets</b>
I can propose solutions to reduce human impact.



<b>Resources</b>	McGraw Hill Inspire Science, environmental case studies, STEM projects, sustainability design challenges, and digital presentations.
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