



Content Area: Science

Grade Level: 8

Course Name: Middle School Earth and Space Science

**Course Description:** Students explore middle school Earth and Space standards. The skills and concepts embedded into these units, as well as skills and concepts from previous grade levels, are tied to the New York State 8th Grade Science Assessment. The descriptions of the units listed below are not exhaustive for each unit, but are meant to provide limited examples of student investigations.

| Units Length of Time                   | Description   |
|--|---|
| Astronomy and Space Systems (12 weeks) | <p>Students explore various astronomical phenomena including, but not limited to gravity, cyclic motions of celestial bodies, rotation vs revolution, scale, angle of incidence, and solar and lunar systems. Throughout portions of this unit, students will answer the following essential questions:</p> <ul style="list-style-type: none"><li>- Where are we in the universe and what is Earth's place in it?</li><li>- What are the predictable patterns in our solar system?</li><li>- Why does the length of day change throughout the year?</li></ul> |
| Geologic History (8 weeks)             | <p>Students explore various phenomena including, but not limited to Earth History, rock and cycles, plate tectonics, and resource distribution. Throughout portions of this unit, students will answer the following essential questions:</p> <ul style="list-style-type: none"><li>- How do we reconstruct and date events in Earth's history?</li><li>- How do we understand the evolution of life and landforms on Earth?</li></ul>  |

| Units Length of Time   | Description  |
|--|--|
|  | <ul style="list-style-type: none"> <li>- How did Earth form?</li> <li>- Why do continents move and what processes cause earthquakes and volcanoes?</li> </ul>  |
| Earth's Systems (10 weeks)                                     | <p>Students explore various phenomena including, but not limited to the water cycle, energy transfer, gravity and its impact on surface features, and the importance of water in living things. Throughout portions of this unit, students will answer the following essential questions:</p> <ul style="list-style-type: none"> <li>- How and why is Earth constantly changing?</li> <li>- How do Earth systems interact with each other?</li> <li>- How do the properties of water shape the Earth's surface and affect its systems?</li> </ul>  |
| Weather, Climate and Human Relationships with Earth (10 weeks) | <p>Students explore various phenomena including, but not limited to the relationships between air masses and weather, ocean temperatures and current, differences in the distribution of solar energy, rotation effects, transfer of heat, natural hazards, climate change and human relationships with Earth. Throughout portions of this unit, students will answer the following essential questions:</p> <ul style="list-style-type: none"> <li>- What regulates weather and climate?</li> <li>- How do living organisms alter Earth's processes and structures?</li> <li>- How do the Earth's surface processes and human activities affect each other?</li> <li>- How do humans depend on Earth's resources?</li> <li>- How do natural hazards affect individuals and societies?</li> <li>- How do humans change the planet?</li> <li>- How do people model and predict the effects of human activities on Earth's climate?</li> </ul> |

| NYS Standard | Links   |
|--------------|---|
|              | Click <a href="#">here</a> to learn more about the New York State Science Learning Standards! |