

Earth and Space Science (Earth's Atmosphere)

Grade 7 Science Grade 7 Science

Start Date: December 02, 2013

End Date : December 20, 2013

<p>Unit Overview Atmospheric properties</p>	<p>Content Elaborations</p> <p>The atmosphere has different properties at different elevations and contains a mixture of gases that cycle through the lithosphere, biosphere, hydrosphere and atmosphere.</p> <p>The properties and composition of the layers of Earth's atmosphere are studied, as they are essential in understanding atmospheric current, climate and biogeochemical cycles.</p>	<p>Unit Resources</p>
<p>Unit Vocabulary atmosphere air pressure composition water vapor physical state altitude solar energy</p>	<p>Enduring Understandings (Big Ideas)</p> <p>The atmosphere is held to the Earth by the force of gravity. There are defined layers of the atmosphere that have specific properties, such as temperature, chemical composition and physical characteristics. Gases in the atmosphere include nitrogen, oxygen, water</p>	<p>Connections</p>

Earth and Space Science (Earth's Atmosphere)

Grade 7 Science Grade 7 Science

Start Date: December 02, 2013

End Date : December 20, 2013

<p>absorb Ozone layer Thermosphere Mesosphere Stratosphere Troposphere ultraviolet radiation nitrogen oxygen ions ionosphere auroras AM radio waves radiation electromagnetic waves convection currents circulation thermal conduction greenhouse effect short wave energy long wave energy carbon dioxide reradiated radiation balance global warming fossil fuels deforestation global climate patterns wind convection cells</p>	<p>vapor, carbon dioxide and other trace gases. Biogeochemical cycles illustrate the movement of specific elements or molecules (such as carbon or nitrogen) through the lithosphere, biosphere, hydrosphere and atmosphere.</p>	
---	--	--

Earth and Space Science (Earth's Atmosphere)

Grade 7 Science Grade 7 Science

Start Date: December 02, 2013

End Date : December 20, 2013

<p>pressure belts Coriolis effect Global winds jet streams local winds sea breeze land breeze mountain breeze valley breeze meteorologists air pollution primary pollutants secondary pollutants ozone smog industrial plants ventilation chemical solvents carbon monoxide formaldehyde nitrogen oxides Acid precipitation sulfur dioxide acidification acid shock ozone hole ultraviolet rays (UV) Chlorofluorocarbons (CFC) asthma short term health effects</p>		
---	--	--

Earth and Space Science (Earth's Atmosphere)

Grade 7 Science Grade 7 Science

Start Date: December 02, 2013

End Date : December 20, 2013

long term health effects The Clean Air Act 1990 Environmental Protection Agency (EPA) Scrubber coal-burning power plants pollution control devices clean coal technology The Allowance Trading System more-efficient engines Hybrid cars emissions carpool catalytic converters vehicle exhaust fumes burning plastics Air Quality Index		
--	--	--

Standards

OH Academic Content Standards - Science (2011) - Grade 7

Strand ESS Earth and Space Science

Topic ESS.1 This topic focuses on Earth's hydrologic cycle, patterns that exist in atmospheric and oceanic currents, the relationship between thermal energy and the currents, and the relative position and movement of the Earth, sun and moon.

Content Statement ESS.1.3 The atmosphere has different properties at different elevations and contains a mixture of gases that cycle through the lithosphere, biosphere, hydrosphere and atmosphere.

ESS.1.3.a The atmosphere is held to the Earth by the force of gravity. There are defined layers of the atmosphere that have specific properties, such as temperature, chemical composition and physical characteristics. Gases in the atmosphere include nitrogen, oxygen, water vapor, carbon dioxide and other trace gases. Biogeochemical cycles illustrate the movement of specific elements or molecules (such as carbon or nitrogen) through the lithosphere, biosphere, hydrosphere and atmosphere.

Student Assessment Chapter Tests	Unit Reflection
-------------------------------------	-----------------

Earth and Space Science (Earth's Atmosphere)

Grade 7 Science Grade 7 Science

Start Date: December 02, 2013

End Date : December 20, 2013

Study island	
--------------	--

Atmospheric properties

Content	Skills	Assessment
A. Atmospheric properties	A. Atmospheric properties <ol style="list-style-type: none">1. Describe the composition of Earth's atmosphere.2. Explain why air pressure changes with altitude.3. Explain how air temperature changes with atmospheric composition.4. Describe the layers of the atmosphere.5. Describe what happens to solar energy that reaches Earth.6. Summarize the process of radiation, conduction, and convection.7. Describe the greenhouse effect8. Describe global warming9. Explain the relationship between the greenhouse effect and global warming.10. Describe primary pollutants.11. Describe secondary pollutants.12. Compare primary and secondary pollutants.13. Identify the major sources of air pollution that is human caused.14. Explain the effects of the ozone hole.15. Identify ways to reduce air pollution.16. Explain the role of the Environmental Protection Agency in the United States.17. Investigate new technology and laws that are used to improve air quality.18. Investigate how to read the Air Quality Index which tells you how clean or polluted the air is.19. List five effects of air pollution on the human body.20.	