

**Essential questions for seventh grade:**

- I. How do scientists support current theories?
- II. How does new information change our understanding and view of the world?
- III. How do scientists explore the world around us?

**Grade 7 Curriculum: Human Body**

Unit w/ Essential Questions	Learning Objectives	Activities	Assessment Strategies	Resources
<p><b>Human Body</b></p> <p>How are all living things alike?</p> <p>How is the Human Body organized to ensure good health?</p>	<p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>• Understand that all living things are made of one or more cells</li> <li>• Understand the basic organization of complex life forms (cells, tissues, organs, systems, organisms)</li> <li>• Understand the structure and function of the digestive, respiratory, circulatory, and muscular/skeletal systems</li> <li>• Understand the concept of homeostasis and how the human body works to maintain internal equilibrium despite external variations</li> </ul>	<ul style="list-style-type: none"> <li>• Notetaking</li> <li>• Cell Project</li> <li>• Dissection of a chicken wing</li> <li>• Dissection of pig's heart</li> <li>• Examination of bovine femur including compact bone, spongy bone, periosteum, and marrow cavity)</li> <li>• Student created Postcards from The (any body system)</li> <li>• Blood Pressure lab</li> <li>• Heart rate and Exercise Lab</li> <li>• Egg Osmosis Lab</li> <li>• Diffusion Lab</li> </ul>	<ul style="list-style-type: none"> <li>• Rubrics for each student/teacher generated project</li> <li>• Teacher observations</li> <li>• Unit Quizzes/tests</li> <li>• Homework</li> <li>• Performance assessment</li> <li>• Labs</li> <li>• Classwork / Homework</li> </ul>	<ul style="list-style-type: none"> <li>• Prentice Hall, <u>Human Body and Health</u> text</li> <li>• National Geographic video, <u>Cells</u></li> <li>• Nova video, <u>The Bionic Man</u></li> <li>• SciLinks web sites</li> <li>• Class set of stethoscopes</li> <li>• Blood pressure units</li> <li>• Human body models</li> <li>• Lung Model</li> </ul>

## Grade 7 Curriculum: Our Changing Earth

Unit w/ Essential Questions	Learning Objectives	Activities	Assessment Strategies	Resources
<b>Title: Our Changing Earth</b>	The Student will:			
<p>How has the Earth's surface changed over the past 4.5 billion years?</p> <p>How has life on Earth changed?</p> <p>What is the Evidence to support the Theory of Evolution?</p> <p>How does Evolution work?</p>	<ul style="list-style-type: none"> <li>• Understand that the Earth's surface has undergone many changes during its long history</li> <li>• Understand how life has changed from one celled organisms to the diversity of life found today</li> <li>• Understand that evidence for Evolution exists in many areas, such as: paleontology, molecular biology, and morphology</li> <li>• Understand the process of Natural Selection</li> <li>• Understand the process of Sexual Selection</li> <li>• Understand the process of Domestic Selection</li> </ul>	<ul style="list-style-type: none"> <li>• Web based Earth Timeline Activity</li> <li>• Bead Bug Lab</li> <li>• Protein sequence Activity</li> <li>• Sex and the Single Guppy Simulation</li> <li>• Coral Reef Connections Activity</li> <li>• How to make Darwin famous project</li> </ul>	<ul style="list-style-type: none"> <li>• Completed timelines graded</li> <li>• Darwin Projects</li> <li>• Evolution Test</li> </ul>	<ul style="list-style-type: none"> <li>• PBS Evolution website</li> <li>• National Geographic Article, <u>Was Darwin Wrong?</u></li> <li>• The Missing Link, video</li> <li>• PBS <u>The Triumph of Life</u> video</li> <li>• University of Michigan Evolution Curriculum</li> </ul>

<b>Unit w/ Essential Questions</b>	<b>Learning Objectives</b>			
<p>Who is Charles Darwin and how did he arrive at his theory of Evolution?</p>	<ul style="list-style-type: none"> <li>• Understand the vast scope of Geologic Time</li> <li>• Describe how Darwin arrived at Evolutionary Theory</li> <li>• Explain the significance of Darwin's work</li> </ul>			

## Grade 7 Curriculum Community First Aid and Safety

<b>Unit w/ Essential Questions</b>	<b>Learning Objectives</b>	<b>Activities</b>	<b>Assessment Strategies</b>	<b>Resources</b>
<p><b>Title: Community First Aid and Safety</b></p> <p>Essential Question/Goal</p> <p>How do you recognize a medical emergency and how will you respond?</p>	<p>The student will:</p> <ul style="list-style-type: none"> <li>• identify ways to prevent injury and illness.</li> <li>• recognize when an emergency has occurred.</li> <li>• follow three emergency action steps in any emergency.</li> <li>• provide basic care for injury and/or sudden illness until the victim can receive professional medical help.</li> </ul>	<p>With all objectives students will:</p> <ul style="list-style-type: none"> <li>• read information in manual.</li> <li>• view a series of video segments.</li> <li>• participate in a number of learning activities, (demonstrations) designed to increased their knowledge and skills.</li> </ul>	<ul style="list-style-type: none"> <li>• Perform specific skills competently and demonstrate the ability to make appropriate decisions for care.</li> <li>• Pass a final written exam with a score of 80% or higher.</li> </ul>	<ul style="list-style-type: none"> <li>• American Red Cross: <i>Community First Aid &amp; Safety</i></li> </ul>

## Grade 7 Curriculum: Space Exploration

Unit w/ Essential Questions/ Goals	Learning Objectives	Activities	Assessment Strategies	Resources
<p><b>Space Exploration:</b></p> <p>What are the current theories and information on the history of the universe?</p> <p>What are technological developments (past and present) related to space exploration?</p>	<p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>• understand the different theories with varying evidence of validity.</li> <li>• become aware of the history of the NASA space program.</li> <li>• identify different space instruments which gather data to further human knowledge of space.</li> <li>• Understand the impact space exploration has had on our daily lives.</li> </ul>	<ul style="list-style-type: none"> <li>• View videos and take notes.</li> <li>• Timeline: research dates and purposes of space missions/projects.</li> </ul> <p><b>Instruments:</b></p> <ul style="list-style-type: none"> <li>• View videos and take notes</li> <li>• Research information about the instruments:               <ul style="list-style-type: none"> <li>- Hubble Telescope</li> <li>- Radio Telescope</li> <li>- Spectroscope</li> <li>- Satellites</li> <li>- Probes/ Fly-bys</li> </ul> </li> <li>• Gather information using the Great Solar System Rescue</li> <li>• Student-created Database: on-line research on space technology.</li> </ul>	<ul style="list-style-type: none"> <li>• Rubric for each student/teacher generated project.</li> <li>• Teacher observation</li> <li>• Quizzes/Tests</li> <li>• Homework/classwork/presentations</li> <li>• Lab work</li> </ul>	<ul style="list-style-type: none"> <li>• Video: Cosmology</li> <li>• Video: The Expanding Universe</li> <li>• Video: The Universe</li> <li>• Video: Pulsars and Quasars</li> <li>• The Great Solar System Rescue</li> </ul>

## Grade 7 Curriculum: Space Exploration

Unit w/ Essential Questions	Learning Objectives	Activities	Assessment Strategies	Resources
<p><b>Space Exploration:</b></p> <p>How does the position of Earth in the solar system affect the conditions on our planet?</p> <p>How does space exploration help humans to solve problems on Earth?</p> <p>What conditions in outer space must be addressed for possible space exploration?</p> <p>What life support systems are essential for human habitation and exploration of space?</p>	<p><b>Students will:</b></p> <ul style="list-style-type: none"> <li>• Understand that gravity is the force that governs the motions of objects in our solar system</li> <li>• Explain how the movement of the Earth and Moon in relation to the Sun causes the phases of moon</li> <li>• Understand the basic human needs for survival.</li> </ul>	<ul style="list-style-type: none"> <li>• Research spin-offs/advances of space technology.</li> <li>• Discussion of the pros and cons of space exploration.</li> <li>• Microgravity Labs.</li> <li>• Density Labs</li> </ul> <p>Jason Project: All Systems Go: Unit 3</p> <ul style="list-style-type: none"> <li>• Code Red on the Red Planet Activity</li> <li>• On a Mission to Control the Environment</li> </ul>	<ul style="list-style-type: none"> <li>• Rubric for each student/teacher generated project.</li> <li>• Teacher observation</li> <li>• Quizzes/Tests</li> <li>• Homework/classwork/presentations</li> <li>• Lab work</li> </ul>	<ul style="list-style-type: none"> <li>• Internet</li> <li>• Electronic encyclopedias</li> <li>• Prentice Hall, Explorer: Astronomy textbook</li> <li>• Video: Space Age</li> <li>• NASA website</li> <li>• Jason Project activities</li> </ul>