

Course: Pre-AP Seventh Grade			Designated Six Weeks: 6th Six Weeks		
Unit: Functions of the Human Body on Earth and Beyond			Days to teach: 30 Days (6 days for each TEKS)		
TEKS/Prerequisites	Guiding Questions/ Specificity	Sample Assessment	Vocabulary	Instructional Strategies/ELPS	Resources/ Weblinks
<p>7.12b--identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous and endocrine systems. <i>(Supporting Standard)</i></p> <p>7.13a-- investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight; and</p>	<p><u>Guiding Question:</u> What are the primary functions of the human body systems?</p> <p><u>Teacher Note:</u> - From this unit students should gain an understanding of what type of work each system performs, not just the anatomical names of the systems, organs, and parts.</p> <p><u>Specificity</u> Emphasize response to stimuli when teaching the nervous system.</p>	<p>Two systems that work closely to maintain overall homeostasis in the body are the _</p> <p>A. circulatory and endocrine B. respiratory and excretory C. excretory and endocrine D. nervous and endocrine Answer. D</p>	<p>Function System Human organism</p> <p>Circulatory system Respiratory system Skeletal system</p> <p>Muscular system Digestive system Excretory system</p> <p>Reproductive system Integumentary system</p> <p>Nervous system Endocrine system Fight or flight</p> <p>Homeostasis Stimulus Response</p>	<p><u>Required Lab:</u> Frog dissection</p> <p>Heart Beat Lab</p> <p>Laying the Foundation: Running the Stairs</p> <p><u>Other suggested activities:</u></p> <ul style="list-style-type: none"> - Order of the Digestive System - Human Body Systems Review - Life Process Notes and Body Systems - Bones, Bones, Everywhere Lab - Muscle Action Lab - How Does Your Heart Rate Lab? - Muscles, Muscles, Everywhere Lab - Reaction Time Lab - Mystery Bones <p><u>ELPS SE/Strategies:</u> http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html</p> <p>4C: Word Knowledge 2E: Writing Process</p>	<p>Textbook: <u>Science Explorer, grade 7</u>, Prentice Hall, 2002.</p> <p>Laying the Foundation https://www.ltfraining.org/</p> <p><u>Teacher Notes:</u> Simple Science Solutions Unit Information – located on Safari Montage Grade 7 Playlist</p> <p>Body System Labs http://www.harcourtschool.com/activity/bodyintro_34/index.html</p> <p>Body Review Chart http://www.science-class.net/Lessons/Anatomy/General/body_Review_chart.pdf</p> <p>Virtual Frog Dissection http://www.mhhe.com/biosci/genbio/virtual_labs/BL_16/BL_16.html</p> <p>Bones http://biologycorner.com/quests/bones/index.html</p>

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7.7a-- contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still <i>(Supporting Standard)</i>	<p><u>Guiding Question:</u> How does the human body perform work?</p> <p>What happens when work is done with different amounts of force?</p> <p><u>Teacher Note:</u> - The human body as a whole system exerts force on other objects to explore “external work”. - Teachers will naturally begin with the functions of each system and all systems functioning together to enable the human body as a whole to perform work. (Emphasis on muscular and skeletal) - Students come from 6th grade with a basic understanding of potential and kinetic energy, inclined planes and pulleys (6.8A,E)</p>	<p>Which of the following is an example of work being done on an object?</p> <p>A. A box rests on the floor B. A man pushes a couch across the room. C. A prism scatters ultraviolet light into visible light. D. Water in a pot changes into steam.</p> <p>Answer: B</p> <p>If a force of 100 Newtons was exerted on an object and no work was done, the object must have:</p> <p>A. Accelerated rapidly B. Remained motionless C. decreased its velocity D. gained momentum</p> <p>Answer: B</p>	<p>Work (W)</p> <p>$W = F \times d$</p> <p>Force</p> <p>$F = m \times a$</p> <p>Inclined plane</p> <p>Joule</p> <p>Newton</p> <p>Motion</p> <p>Balanced Force</p> <p>Unbalanced Force</p> <p>Acceleration (a)</p>	<p><u>Other suggested activities:</u></p> <ul style="list-style-type: none"> - Muscle Fatigue Lab - Ramp it Up Lab - Working Hard or Hardly Working? - My Cup Runneth Over <p><u>ELPS SE/Strategies:</u> Link: http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html</p> <p>4C: Word Knowledge 2E: Writing Process</p>	<p>Muscle Fatigue Lab http://www.science-class.net/Lessons/Anatomy/Support/Muscle%20Fatigue.pdf</p>

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	- This SE emphasizes that students should contrast situations with different amounts of force (change in energy) rather than a calculation using the formula for work. $W = F \times d$				

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7.9a-- Analyze the characteristics of objects in our solar system that allow life to exist such as the proximity of the Sun, presence of water, and composition of the atmosphere	<p>Guiding question What conditions allow Earth to support and maintain life?</p> <p>Teacher Note: - Also includes temperate weather, chemical composition of our atmosphere, (SPONCH): Sulfur, Phosphorus, Oxygen, Nitrogen, Carbon and Hydrogen, proximity to the Sun, and presence of water as characteristics of Earth that enable life.</p>	<p>Ozone molecules protect Earth from the harmful effects of the sun by ____ .</p> <p>A. insulating the temperature at the poles B. condensing water particles in clouds C. regulating the heat from the sun D. absorbing ultraviolet radiation</p> <p>Answer: D</p>	<p>Characteristic</p> <p>Solar System</p> <p>Proximity</p> <p>Composition</p> <p>Atmosphere</p> <p>Exploration</p>	<p>Other Suggested Activities: Is There Life Beyond Earth? WS</p> <p>Walk the Solar System</p>	<p>Life on Mars http://mars.jpl.nasa.gov/science/life/</p> <p>Exploratur http://www.nasa.gov/audience/forstudents/postsecondary/features/mars_life_feature_1015.html</p> <p>Conditions for Supporting Life http://www.sciencedaily.com/releases/2011/02/110224091735.htm</p>
7.9b-- Identify the accommodations, considering the characteristics of our solar system, that enabled manned space exploration	<p>What conditions are necessary to support life outside of Earth?</p> <p>Teacher Note: - What is necessary for life in space; air supply, fresh water supply, food supply, waste - management, insulation from heat and UV radiation, antigravity adaptations and communication</p>	<p>Which features of the solar system helped humans to master the process of landing on a solid object in outer space and then returning safely to Earth?</p> <p>A. The distant existence of a large' gaseous planet B. The nearby existence of a</p>	<p>Accommodation</p> <p>Characteristic</p> <p>Solar System</p> <p>Enable</p> <p>Manned space exploration</p> <p>Terrestrial</p>	<p>Design and Construct a Space Station</p> <p>Meeting Basic Needs in Space</p>	<p>Design and Construct a Space Station http://www.lpi.usra.edu/education/explore/stations/activity_glance.shtml</p>

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		large, terrestrial moon C. The nearby existence of a small, terrestrial planet D. The nearby existence of large, rock asteroids Answer: B			
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