

Sixth Grade Science Curriculum Bundle # 3

Title	Suggested Dates
Introduction to Life	Oct. 4-Oct. 22 (14 days)

Big Idea/Enduring Understanding	Guiding Questions
<p>All organisms are made of cells. All organisms have similarities and differences. Organisms interact with their environment.</p>	<p>How does the cell theory help us determine if things are living or nonliving? Why do scientists classify living things? What happens to the organism, population, community, ecosystem, and/or biosphere if natural processes are interrupted? How does an organism react with its environment?</p>

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	Specificity & Examples	Suggested Resources (Read the note above)
To access additional resources, go to: S:\!PISD Public\Science Curriculum Resources\6th Grade Resource Activities		
<p>6.12 Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:</p> <p>6.12A Understand that all organisms are composed of one or more cells</p>	<p style="color: red;">Including: ---Cell Theory</p>	<p style="color: red;">Vocabulary: cell, nucleus, Cell Theory, prokaryotic, eukaryotic, unicellular, multicellular, biotic, abiotic, asexual/sexual reproduction, Kingdom, Domain, autotrophic, heterotrophic, organism, population, community and ecosystem</p> <p>Uncovering Student Ideas in Science, Keeley, Vol 3, #15, Cells and Size http://burtonbiology.com/cells/celloverview.pdf Cell Overview</p> <p>-Technology: PRE-AP Cell Theory Webquest www.schools.manatee.k12.fl.us/072JOCONNOR/cellhistory/#Task</p> <p>http://www.worldofteaching.com/powerpoints/biology/Theme%20Cell%20Theory.ppt Cell Theory PPT</p>

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<p>6.12Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:</p> <p>6.12B Recognize that the presence of a nucleus determines whether a cell is prokaryotic or eukaryotic</p>	<p>Including: ---Defining a nucleus</p>	<p>CORE ACTIVITY-Microscope Lab (shared folder) PRE-AP: Picturing Life Making a biological diagram; LTF-Life and Earth, page 246</p> <p>http://sciencespot.net/Media/micromanianet.pdf</p> <p>Gateway Book Microscope and Cells TE pages 109-117 SE 164-178</p> <p>www.brainpop.com ; Search Microscope</p>
<p>6.12 Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:</p> <p>6.12C Recognize that the broadest taxonomic classification of living organisms is divided into currently recognized Domains;</p>	<p>Including: ---Classify organisms into Domains and Kingdoms Taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem.</p>	<p>http://www.cals.ncsu.edu/course/zo150/mozley/domkingd.html Domain and Kingdom Resource page</p> <p>http://science-class.net/Biology/Classification.htm Resource Page</p> <p>http://sciencespot.net/Pages/classbio.html#invert Science Spot Resource Page</p> <p>http://glencoe.com/sites/common_assets/science/active_folder_inserts/06-874108.pdf</p>
<p>6.12 Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:</p> <p>6.12D Identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized Kingdoms</p>	<p>including examples of: prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized Kingdom</p>	<p>http://www.cellsalive.com/</p> <p>http://library.thinkquest.org/12413/karyotes.html</p> <p>http://glencoe.com/sites/common_assets/science/active_folder_inserts/06-874108.pdf</p>
<p>6.12 Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:</p> <p>6.12E Describe biotic and abiotic parts of an ecosystem in which organisms interact</p>	<p>Know terms living/nonliving from 5th grade; stress biotic and abiotic</p>	<p>http://www.mesquiteisd.org/academy/documents/Ecology.ppt#290</p> <p>PPT on Biotic and Abiotic</p> <p>http://www2.ccsd.ws/sbfaculty/team8e/jecole/Science/abiotic_vs_.htm Comparing Biotic and Abiotic</p>

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		Poster: Using magazines, cut out pictures representing biotic and abiotic parts for poster/journal
<p>6.12 Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:</p> <p>6.12F Diagram the levels of organization within an ecosystem, including organism, population, community, and ecosystem.</p>	<p>Know that there is a level of organization in any environment</p>	<p>Create a graphic organizer or foldable with levels of organization of living things</p> <p>http://members.cox.net/pvsciteach/foldinst.pdf</p> <p>http://www.mysciencebox.org/ecoorg Ecosystem Organization</p> <p>http://www.biology.ualberta.ca/facilities/multimedia/uploads/alberta/Ecosystem.swf ecosystem animation</p>
<p>6.1 The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices.</p> <p>6.1A demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standard</p>	<p>Including:</p> <ul style="list-style-type: none"> ---Chemical use and disposal ---Electrical and heat safety ---Safe practices with lab equipment ---Implement District safety Contract ---Operate in accordance with the Texas Safety Standards <p><u>Teacher Note:</u> Safety skills and process TEKS should be embedded and reinforced throughout the year.</p>	<p>Texas Safety Standards</p>
<p>6.1 The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices.</p> <p>6.1B practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials</p>	<p>---Recycle lab material</p>	
<p>6.2 The student uses scientific inquiry methods during laboratory and field investigations.</p> <p>6.2A plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;</p>	<p>Including:</p> <ul style="list-style-type: none"> ---observe notable differences between animal and plant cells ---observe differences between eukaryotic and prokaryotic cells ---use of microscope and equipment safely and properly 	<p>Microscope Lab</p>

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<p>6.2 The student uses scientific inquiry methods during laboratory and field investigations.</p> <p>6.2B design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;</p>	<p>Including:</p> <ul style="list-style-type: none"> ---observe notable differences between animal and plant cells ---observe differences between eukaryotic and prokaryotic cells ---use of microscope and equipment safely and properly 	<p>Microscope Lab</p>
<p>6.2 The student uses scientific inquiry methods during laboratory and field investigations.</p> <p>6.2C collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;</p>	<p>Including:</p> <ul style="list-style-type: none"> ---Labeling the cells and their required parts ---Venn Diagram to compare Eukaryotes and Prokaryotes ---Foldables 	<p>http://members.cox.net/pvsciteach/foldinst.pdf</p> <p>AVID Activity: Writing in Science pages 26-28 “Observation Narrative”</p> <p>AVID Activity: Reading in Science pages 111-132 “Additional Active Reading Graphic Organizers”</p>
<p>6.2 The student uses scientific inquiry methods during laboratory and field investigations.</p> <p>6.2E analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.</p>	<p>Including:</p> <ul style="list-style-type: none"> ---observe notable differences between animal and plant cells ---observe differences between eukaryotic and prokaryotic cells 	
<p>6.3 The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists.</p> <p>6.3B use models to represent aspects of the natural world such as a model of Earth's layers;</p>	<p>Such as:</p> <ul style="list-style-type: none"> --- Conceptual <ul style="list-style-type: none"> • Cell Theory • Scientific Method --- Physical <ul style="list-style-type: none"> • Eukaryotic/Prokaryotic Cells (use models to demonstrate/discuss cell theory, do not create models as an activity) • Diagram levels of organization of the Ecosystem 	
<p>6.3 The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists.</p> <p>6.3C identify advantages and limitations of models such as size, scale, properties, and materials;</p>	<p>Such as:</p> <ul style="list-style-type: none"> • Differentiate between microscope cells vs macroscopic models • Draw the levels of organization within an ecosystem 	

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<p>6.3 The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists.</p> <p>6.3D relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content</p>	<p>Such as: ---Hooke ---Leeuwenhoek ---Current events relating to Cell Theory and or Ecosystem</p>	<p>Resources website: S:\!PISD Public\Science Curriculum Resources\MS Curriculum Writing\6th Grade Bundles 10-11\bundle 3 life</p> <p><u>AVID Activity:</u> Writing in Science page 24 “Brief Autobiography.”</p>
<p>6.4 The student knows how to use a variety of tools and safety equipment to conduct science inquiry.</p> <p>6.4A use appropriate tools to collect, record, and analyze information, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum;</p>	<p>Including: ---Journals/notebooks ---Microscope</p>	
<p>6.4 The student knows how to use a variety of tools and safety equipment to conduct science inquiry.</p> <p>6.4B use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.</p>	<p>Including: ---Microscope Safety ---MSDS on Iodine needed ---Goggles</p>	