

# SCIENCE CURRICULUM FRAMEWORK



EIGHTH GRADE

2005-2006

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# Brownsville Independent School District

## MISSION STATEMENT

The mission of the Brownsville Independent School District, an international community respected for its rich cultural heritage is to produce responsible, well-rounded graduates

who

- have the ability to pursue a post-secondary education and/or career
- possess a capability for independent learning and thinking with a competitive edge in a multi-cultural, multi-lingual world

by

- identifying and maximizing physical, financial, and human resources and
- unifying community and school commitment to excellence in education and equal educational opportunity.

# Brownsville Independent School District

## BELIEF STATEMENT

- Excellence is our common goal.
- Parental responsibility is an integral factor in student success.
- Belief in self is fundamental to success.
- Everyone deserves respect as a human being.
- Perseverance and hard work are essential for success.
- Change creates opportunities for growth.
- Truthfulness is important for effective communication.
- Public schools are an extension of the community.
- Sensitivity is essential for understanding the needs of others.
- Great achievements follow high expectations.
- Cooperation is necessary to get things done.
- Active listening is essential for effective communication.
- Successful students are active participants in the learning process.

# Acknowledgment

The Brownsville Independent School District gratefully acknowledges the contributions given by the Science teachers who participated in the development of this secondary Science curriculum framework. Science teachers from the following campuses assisted in the development of the framework:

- ❖ Besteiro Middle School
- ❖ Cummings Middle School
- ❖ Faulk Middle School
- ❖ Lucio Middle School
- ❖ Oliveira Middle School
- ❖ Perkins Middle School
- ❖ Stillman (Central) Middle School
- ❖ Stell Middle School
- ❖ Vela Middle School
- ❖ BUSP Secondary Science Mentors
- ❖ Secondary Science Curriculum Specialist

# Introduction

Texas Legislation requires that all Texas school districts develop, implement, and evaluate a comprehensive educational program aimed at student mastery of the Texas Essential Knowledge and Skills as defined in Chapter 112.

The purpose of this Secondary Science Curriculum Framework is to match learning experiences to the Texas Essential Knowledge and Skills and provide a sequence of objectives and lab activities that are also aligned, including the 40% lab requirement for all High School Science courses. Brownsville ISD also requires the 40% lab minimum curriculum requirement for all Middle School Science courses.

In addition, this document includes sample activities and **required “EXEMPLAR” labs** to be taught in each course. EXEMPLAR labs are not intended to be the only labs taught in each course, but are provided to ensure consistency in high-quality instruction throughout the district. They should further serve to avoid overemphasis in one area while neglecting another, and thus, focus on student needs.

**Pre-AP** accommodations are indicated throughout the document, either as additional TEKS added to the course to meet the needs of the Pre-AP course sequence, or emphasized TEKS that need to be taught with added depth to the Pre-AP student in order to prepare them for the AP or Dual Enrollment course. Adaptations for other special populations will be made as needed, but the basic curriculum is the same for all students.

The textbook provided by the state is a resource for teaching the course, not the curriculum. Although the textbook “covers” all TEKS for the course, it does not necessarily provide instructional support for teaching the TEKS to the level of depth necessary to fulfill the TEKS intention. Therefore, it is highly recommended that teachers use a variety of additional resources from multiple sources in order to meet the TEKS requirements. Some of these resources may include, but are not limited to required Exemplar Labs, FOSS kits (which should be taught in their entirety as a unit), TEXTEAMS activities, Calculator Based Labs, Snapshot Activities and Vistas provided through the Charles A. Dana Center Science Toolkit.

This curriculum framework is primarily a working document that prescribes what is to be taught in a given subject or area of study. It gives both structure and direction to the educational program. As a formal document, it is an official statement of the curriculum and a teacher’s guide to instruction.

## Student Participation in TEKS-Based Inquiry and the BISD Science Fairs

Research, inquiry and invention are essential skills successful students must develop as they grow academically. Students must be able to discuss and evaluate social, technological and scientific issues evident today and trends influencing the future. A challenge for educators is to exploit the natural curiosity all students possess. Allowing time, opportunity and support during school hours for student-based inquiry permits learners to expose their misconceptions and pursue the “why” questions they have. Students should plan investigations and conduct research that can help them test their ideas, interpret differing points of view and justify consequent discoveries. Students are much more likely to internalize and remember concepts learned if they are actively involved with them, rather than passively observing them take place.

TEKS-based investigations enable students to effectively learn and use content-area concepts and skills. Through these types of direct investigations students are able to “maximize their ability to make sense of the world and to learn more about it.” (*Science for All Americans*) Therefore, it is a BISD requirement that all students participate in a research-based inquiry project at the sixth, eighth, and ninth grades. Participation at other grades or courses is highly recommended since successful research projects take two to four years. When students are engaged in research-based inquiry, they are involved in using a rich variety of primary and secondary source materials and the Science Process Skills as required by law in the Science TEKS.

A successful classroom science investigation may be developed into a research-based inquiry project and entered in the **Science Fair**. Students who choose to enter the fair will be able to create investigations from among fifteen different categories. The Science Fair will be held annually in the fall, allowing teachers and students to prepare for one science competition per year following the rules of the Intel International Science and Engineering Fair, ([www.sciserv.org/iseef](http://www.sciserv.org/iseef)). All students will have the opportunity to complete an original investigation. Individual campuses, teachers and students will be able to choose which projects to enter in the Science and Engineering Fair.

## SECONDARY SCIENCE EIGHTH GRADE SCOPE AND SEQUENCE

<b>Six-Weeks Unit Themes</b>	<b>Concepts TEKS (Chapters)</b>	<b>Processes TEKS</b>	<b>Exemplar Lab(s)* and Unit Concepts</b>
<b>1<sup>st</sup> Six Weeks</b>  Properties, Patterns and Models	<b>8.8 A, B</b> <b>8.9 A, B, C, D</b> <b>8.10 A, C</b>  Ch.1 & 3	<b>1 A, B</b> <b>2 A, B, C, D, E</b> <b>3 A, B, C, D, E</b> <b>4 A, B</b> <b>5 A, B</b>	<b>“Recognizing Laboratory Safety”, and “Missing Alien”</b> <b>Recommended: “It’s in the Bag”, and “Group Reactions”</b> <i>Earth/Environmental Sci and Physical Sci:</i> Chemical Interactions, Properties of Materials, Science Project
<b>2<sup>nd</sup> Six Weeks</b>  Systems, Constancy and Change	<b>8.7 A, B</b> <b>8.13 A, B, C</b>  Ch. 3, 4, 5, 6, 7 & 8	<b>1 A, B</b> <b>2 A, B, C, D, E</b> <b>3 A, B, C, D, E</b> <b>4 A, B</b> <b>5 A, B</b>	<b>“The Indy 100 (Inquiry) or Indy 35B (Cookbook) “Tuning Forks”</b> <i>Physical Science:</i> Motion & Waves, Electromagnetic Spectrum, Light, Characteristics of the Universe, Science Project
<b>3<sup>rd</sup> Six Weeks</b>  Systems, Constancy & Change	<b>8.14A</b> <b>8.12A</b>  Ch. 9, 10 & 11	<b>1 A, B</b> <b>2 A, B, C, D, E</b> <b>3 A, B, C, D, E</b> <b>4 A, B</b> <b>5 A, B</b>	<b>“History From Rocks”, “Minute Rice Lab”, and “Rock Cycle Lab”</b> <b>Recommended: “Foss Kit: Earth History”</b> <i>Earth Science:</i> Plate Tectonics, Minerals, Rocks, Science Project
<b>4<sup>th</sup> Six Weeks</b>  Systems, Properties, Patterns and Models	<b>8.10B</b> <b>8.12B, C</b> <b>8.14 A, C</b>  Ch.12,13,14 & 15	<b>1 A, B</b> <b>2 A, B, C, D, E</b> <b>3 A, B, C, D, E</b> <b>4 A, B</b> <b>5 A, B</b>	<b>“Water Quality” Recommendations</b> <b>“Foss Kit: Weather &amp; Water”</b> <i>Earth/Environmental Science:</i> Resources, Oceans, Climate, Science Project
<b>5<sup>th</sup> Six Weeks</b>  Systems, Properties, Patterns & Models	<b>8.6 A, B</b> <b>8.11 A, B, C</b>  Ch. 16, 17 & 19	<b>1 A, B</b> <b>2 A, B, C, D, E</b> <b>3 A, B, C, D, E</b> <b>4 A, B</b> <b>5 A, B</b>	<b>“Chromosomes and Inheritance”</b> <i>Life Science:</i> Heredity, Genetics
<b>6<sup>th</sup> Six Weeks</b>  Systems, Constancy & Change	<b>8.6C</b> <b>8.14B</b>  Ch. 18 & 19	<b>1 A, B</b> <b>2 A, B, C, D, E</b> <b>3 A, B, C, D, E</b> <b>4 A, B</b> <b>5 A, B</b>	<b>“Adaptation of Birds”</b> <b>Additional Recommendations: “Rat Dissection” &amp; “Owl Pellets”</b> Change Over Time, Living Systems

\*Required Lab as part of 40% TEKS Lab Requirement

# Science--Eighth Grade

**Time Frame: 1<sup>st</sup> Six Weeks (page 1 of 6)**

<b>Unit Concepts:</b>	<b>Unit Themes:</b>	<b>Prentice Hall Chapters:</b>
Earth/Environmental Science and Physical Science: Chemical Interactions, Properties of Materials Science Project	<i>Properties, Patterns, and Models</i>	Ch. 1 & 3

<b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.8 A,B</b> <b>8.9 A,B,C,D</b> <b>8.10 A,C</b> <b>8.1 – 8.5</b>	<b>Required Exemplar Labs, “Recognizing Laboratory Safety”, “Missing Alien” and Recommended: “It’s in the Bag”, and “Group Reactions” Science Project and Suggested Instructional Activities Integrating Concepts &amp; Processes</b>	<b>Suggested Resources</b> (Use of additional & various resources from multiple sources is necessary to meet the TEKS)
<p><b>(8.8)</b> Science concepts. The student knows that matter is composed of atoms. The student is expected to:</p> <p>(A) describe the structure and parts of an atom; and</p> <p>(B) identify the properties of an atom including mass and electrical charge.</p>	<p><b>Activity:</b> The student will describe the structure and properties of an atom including mass and electrical charge:</p> <ul style="list-style-type: none"> <li>• Create a model of the atomic structure of an atom and labeling its parts.</li> <li>• Communicate valid conclusions of an atom’s electrical charge through the use of model</li> </ul>	<p>Vista, “Systems: Natural Patterns Matter” <a href="http://www.tenet.edu/teks/science/instruction/vistas/index.html?md">http://www.tenet.edu/teks/science/instruction/vistas/index.html?md</a></p> <p>Graphs, Charts and Tables Activities <a href="http://www.tenet.edu/teks/science/instruction/tutorial.html">http://www.tenet.edu/teks/science/instruction/tutorial.html</a></p> <p>“Recognizing Laboratory Safety” Grade 8 Prentice Hall Lab Manual. p. ix – xii.</p> <p>ISEF Science Fair: <a href="http://www.sciserve.org/isef/teachers/index.asp">http://www.sciserve.org/isef/teachers/index.asp</a></p>

*1<sup>st</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

**Time Frame: 1<sup>st</sup> Six Weeks (page 2 of 6)**

<p><b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.8 A,B</b> <b>8.9 A,B,C,D</b> <b>8.10 A,C</b> <b>8.1 – 8.5</b></p>	<p><b>Required Exemplar Labs, “Recognizing Laboratory Safety”, “Missing Alien” and Recommended: “It’s in the Bag”, and “Group Reactions” Science Project and Suggested Instructional Activities Integrating Concepts &amp; Processes</b></p>	<p><b>Suggested Resources</b> (Use of additional &amp; various resources from multiple sources is necessary to meet the TEKS)</p>
<p><b>8.9)</b> Science concepts. The student knows that substances have chemical and physical properties. The student is expected to:</p> <p>(A) demonstrate that substances may react chemically to form new substances;</p> <p>(B) interpret information on the periodic table to understand that physical properties are used to group elements;</p> <p>(C) recognize the importance of formulas and equations to express what happens in a chemical reaction; and</p> <p>(D) identify that physical and chemical properties influence the development and application of everyday materials such as cooking surfaces, insulation, adhesives, and plastics.</p>	<p><b>Activity:</b> The student will demonstrate that substances may react chemically to form new substances:</p> <ul style="list-style-type: none"> <li>Use the scientific method to demonstrate that substances may react chemically to form new substances while using safe laboratory practices and making wise choices in the use and disposal of materials.</li> </ul> <p><b>Activity:</b> The student will interpret information on the periodic table to understand that physical properties are used to group elements:</p> <ul style="list-style-type: none"> <li>Organize, analyze, and predict trends from direct and indirect evidence using such activities as “<u>The Missing Alien</u>”.</li> <li>Communicate valid conclusions about elements based on their arrangement in the Periodic Table.</li> </ul> <p><b>Activity:</b> The student will recognize the importance of formulas and equations to express what happens in a chemical reaction:</p> <ul style="list-style-type: none"> <li>Predict trends from indirect and direct evidence using cards with such activities as “<u>Group Reactions</u>” .</li> </ul>	

**STUDENT PRODUCTS** may include (but are not limited to):~ Journals/Notebooks/Reports ~ Projects ~Labs ~Presentations

Copy of Exemplar Labs, “Missing Alien” and “Laboratory Safety” located in Appendix

*1<sup>st</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

**Time Frame: 1st Six Weeks (page 3 of 6)**

<p><b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.8 A,B</b> <b>8.9 A,B,C,D</b> <b>8.10 A,C</b> <b>8.1 – 8.5</b></p>	<p><b>Required Exemplar Labs,</b> “Recognizing Laboratory Safety”, “Missing Alien” <b>and</b> <b>Recommended: “It’s in the Bag”,</b> <b>and “Group Reactions”</b> <i>Science Project</i> <b>and</b> <b>Suggested Instructional Activities</b> <b>Integrating Concepts &amp; Processes</b></p>	<p><b>Suggested Resources</b> (Use of additional &amp; various resources from multiple sources is necessary to meet the TEKS)</p>
<p><b>(8.10)</b> Science concepts. The student knows that complex interactions occur between matter and energy. The student is expected to:</p> <p>(A) illustrate interactions between matter and energy including specific heat;</p> <p>(C) identify and demonstrate that loss or gain of heat energy occurs during exothermic and endothermic chemical reactions.</p>	<p><b>Activity:</b> The student will identify that physical and chemical properties influence the development and application of everyday materials such as cooking surfaces, insulation, adhesives, and plastics:</p>	<p><u>Vernier Middle School Science with Calculators</u></p> <p>Physical Science Series: Atomic Structure and the Periodic Table. United Learning. 1998. unitedstreaming. 15 August 2005 <a href="http://www.unitedstreaming.com/">http://www.unitedstreaming.com/</a></p> <p>Discovering the Elements. United Learning. 1996. unitedstreaming. 15 August 2005 <a href="http://www.unitedstreaming.com/">http://www.unitedstreaming.com/</a></p> <p>Physical Science Series: Properties of Matter. United Learning. 1998. unitedstreaming. 15 August 2005 <a href="http://www.unitedstreaming.com/">http://www.unitedstreaming.com/</a></p>

**STUDENT PRODUCTS** may include (but are not limited to):~ Journals/Notebooks/Reports ~ Projects ~Labs ~Presentations

# Science--Eighth Grade

**Time Frame: 1st Six Weeks (page 4 of 6)**

<p><b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.8 A,B</b> <b>8.9 A,B,C,D</b> <b>8.10 A,C</b> <b>8.1 – 8.5</b></p>	<p><b>Required Exemplar Labs, “Recognizing Laboratory Safety”, “Missing Alien” and Recommended: “It’s in the Bag”, and “Group Reactions” Science Project and Suggested Instructional Activities Integrating Concepts &amp; Processes</b></p>	<p><b>Suggested Resources</b> (Use of additional &amp; various resources from multiple sources is necessary to meet the TEKS)</p>
<p><b>Scientific Processes</b> <b>8.1, 8.2, 8.3, 8.4, 8.5</b> (40% Course Requirement minimum) Ongoing / Integrated with Concepts throughout unit.</p>	<p><b>Science Project:</b> (required at 8<sup>th</sup> grade)</p> <ul style="list-style-type: none"> <li>• Choose a limited subject, ask a question; identify or originate/define a problem to study.</li> <li>• Review published materials related to problem or question.</li> <li>• Evaluate possible solutions and make hypothesis.</li> </ul>	<p>ISEF Science Fair: <a href="http://www.sciserve.org/isef/teachers/index.asp">http://www.sciserve.org/isef/teachers/index.asp</a></p>

**STUDENT PRODUCTS** may include (but are not limited to):~ Journals/Notebooks/Reports ~ Projects ~Labs ~Presentations

## Science--Eighth Grade Alignment and Correlations Charts

Time Frame: 1<sup>st</sup> Six Weeks (page 5 of 6)

### TEKS/TAKS Correlations\*

8 <sup>th</sup> Gr. TEKS	8 <sup>th</sup> Grade TAKS Correlation	5 <sup>th</sup> Grade TAKS Correlation	Prior Knowledge TEKS	Subsequent Knowledge TEKS	Exit level TAKS Correlation
8.8 a,b 8.9 a,b,c,d 8.10 a,c	Objective 3 Objective 3 Objective 3		7.7 b 7.7 a,b,c 7.8 a,b, 7.12b	IPC 7 d IPC 7 d,e, 8 a,c Bio 9 d, IPC 6a	Objectives 3,4,5
Processes: 8.1 a, b 8.2 a, b, c, d, e 8.3 a, b, c, d, e 8.4 a, b 8.5 a, b, c		Objective 1	7.1 a, b 7.2 a, b, c, d, e 7.3 a, b 7.3 c, d, e 7.4 a, b	Biology: 1-3 IPC: 1-3	Objective 1

*\*Refer to Appendix for complete TEKS and TAKS objectives.*

### Pre-AP Course Curricular Requirements\*\*

*\*\*See Appendix for Pre-AP/AP Alignment Chart*

# Science--Eighth Grade

## Alignment and Correlations Charts (Continued)

Time Frame: 1<sup>st</sup> Six Weeks (page 6 of 6)

### TEKS/National Science Education Standards Correlations\*\*\* Math Correlations

TEKS	National Science Education Standards	Math Correlations
8.7 a, b	Physical Science Standard B	8.14, 8.15, 8.4, 8.10, 8.1, 8.2, 8.3, 8.5, 8.16, 8.6, 8.7
8.14 a	Earth & Space Science Standard D	
8.9 a	Physical Science Standard B	
8.10 a	Physical Science Standard B Earth and Space Science Standard D	
8.12 a	Earth and Space Science Standard D	8.1D, 8.2, 8.3, 8.4, 8.5, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.14, 8.15, 8.16
Processes:		
8.1 a, b	Science as Inquiry Standard A Science in Personal and Social Perspectives Standard F	
8.2 a, b, c, d, e	Science as Inquiry Standard A Science and Technology Standard E	
8.3 a	Science as Inquiry Standard A History and Nature of Science Standard G	
8.3 b, c	Science as Inquiry Standard A	
8.3 d, e	Science as Inquiry Standard A History and Nature of Science Standard G	
8.4 a, b	Science as Inquiry Standard A Science and Technology Standard E	
8.5 a, b, c	Science as Inquiry Standard A	

\*\*\*Refer to Appendix for complete TEKS Objectives and National Science Education Standards

# Science--Eighth Grade

**Time Frame: 2nd Six Weeks (page 1 of 5)**

<b>Unit Concepts:</b>	<b>Unit Themes:</b>	<b>Prentice Hall Chapters:</b>
<i>Physical Science:</i> Motion & Waves, Electromagnetic Spectrum, Light, Characteristics of the Universe, Science Project	Systems Constancy & Change	<b>Ch. 3,4,5,6,7,&amp;8</b>

<b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.7 A,B</b> <b>8.13 A,B,C</b> <b>8.1 – 8.5</b>	<b>Required Exemplar Labs, “The Indy 100 (Inquiry) or Indy 35B (Cookbook), “Tuning Fork”, Science Project and</b> <b>Suggested Instructional Activities Integrating Concepts &amp; Processes</b>	<b>Suggested Resources</b> (Use of additional & various resources from multiple sources is necessary to meet the TEKS)
<p><b>(8.7)</b> Science concepts. The student knows that there is a relationship between force and motion. The student is expected to:</p> <p>(A) demonstrate how unbalanced forces cause changes in the speed or direction of an object's motion; and</p> <p>(B) recognize that waves are generated and can travel through different media.</p>	<p>“Tuning Forks”—understand that sound is a disturbance that travels through a medium as a longitudinal wave.</p> <p><u>Vernier Middle School Science with Calculators “Indy 100”</u></p>	<p>ISEF Science Fair: <a href="http://www.sciserve.org/isef/teachers/index.asp">http://www.sciserve.org/isef/teachers/index.asp</a></p> <p>Snapshot Activities 8.7 A, 8.7 B <a href="http://www.tenet.edu/teks/science/teks/snapshots/index.html?8th">http://www.tenet.edu/teks/science/teks/snapshots/index.html?8th</a></p> <p>TEXTEAMS Activities</p> <p>“Tuning Forks”: Grade 8 Prentice Hall Lab Manual Lab 5, p. 23 – 26.</p> <p>Graphs, Charts and Tables Activities, <a href="http://www.tenet.edu/teks/science/instruction/tutorial.html">http://www.tenet.edu/teks/science/instruction/tutorial.html</a></p>

*2<sup>nd</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

**Time Frame: 2nd Six Weeks (page 2 of 5)**

<p><b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.7 A,B</b> <b>8.13 A,B,C</b> <b>8.1 – 8.5</b></p>	<p><b>Required Exemplar Labs, “The Indy 100 (Inquiry) or Indy 35B (Cookbook), “Tuning Fork”, Science Project and Suggested Instructional Activities Integrating Concepts &amp; Processes</b></p>	<p><b>Suggested Resources</b> (Use of additional &amp; various resources from multiple sources is necessary to meet the TEKS)</p>
<p><b>(8.13)</b> Science concepts. The student knows characteristics of the universe. The student is expected to:</p> <p>(A) describe characteristics of the universe such as stars and galaxies;</p> <p>(B) explain the use of light years to describe distances in the universe; and</p> <p>(C) research and describe historical scientific theories of the origin of the universe.</p> <p><b>Scientific Processes</b> <b>8.1, 8.2, 8.3, 8.4, 8.5</b> (40% Course Requirement minimum) Ongoing / Integrated with Concepts throughout unit.</p>	<p><b>Activity:</b> The student describes characteristics stars:</p> <ul style="list-style-type: none"> <li>• use internet data to analyze light coming from stars.</li> </ul> <p><b>Activity:</b> The student will define light years to describe distances in the universe:</p> <ul style="list-style-type: none"> <li>• Analyze and interpret information on light years such as star distances and magnitudes.</li> </ul> <p><b>Activity:</b> The student will critique historical scientific theories of the origin of the universe:</p> <ul style="list-style-type: none"> <li>• Research and critique theories of the origin of the universe and the scientists who developed them.</li> </ul>	<p>TEXTEAMS Activities</p> <p><b>Hands On Astrophysics</b></p> <p><a href="http://www.aavso.org">http://www.aavso.org</a></p> <p><b>Search for Sites:</b></p> <p>Variable stars</p> <p>Chandra, Hubble telescope</p> <p>Exploring Space: The Universe. United Learning. 1995. unitedstreaming. 15 August 2005 <a href="http://www.unitedstreaming.com/">http://www.unitedstreaming.com/</a></p>

*2<sup>nd</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

**Time Frame: 2nd Six Weeks (page 3 of 5)**

<p><b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.7 A,B</b> <b>8.13 A,B,C</b> <b>8.1 – 8.5</b></p>	<p><b>Required Exemplar Labs, “The Indy 100 (Inquiry) or Indy 35B (Cookbook), “Tuning Fork”, Science Project</b> <b>and</b> <b>Suggested Instructional Activities Integrating Concepts &amp; Processes</b></p>	<p><b>Suggested Resources</b> (Use of additional &amp; various resources from multiple sources is necessary to meet the TEKS)</p>
<p><b>Scientific Processes</b> <b>8.1, 8.2, 8.3, 8.4, 8.5</b> (40% Course Requirement minimum) Ongoing / Integrated with Concepts throughout unit.</p>	<p><b>Science Project:</b> (continued from 1<sup>st</sup> 6 weeks)</p> <ul style="list-style-type: none"> <li>• Create a plan for an experiment.</li> <li>• Complete ISEF Required paperwork before beginning experimentation; consult with project sponsors.</li> <li>• Challenge and test hypothesis through experimentation (data collection) and analysis.</li> <li>• Evaluate the results of experiment and reach conclusions based on data.</li> </ul>	

**STUDENT PRODUCTS** may include (but are not limited to):~ Journals/Notebooks/Reports ~ Projects ~Labs ~Presentations

*2<sup>nd</sup> Six Weeks Unit continued on next page*

## Science--Eighth Grade Alignment and Correlations Charts

Time Frame: 2<sup>nd</sup> Six Weeks (page 4 of 5)

### TEKS/TAKS Correlations\*

8 <sup>th</sup> Gr. TEKS	8 <sup>th</sup> Grade TAKS Correlation	5 <sup>th</sup> Grade TAKS Correlation	Prior Knowledge TEKS	Subsequent Knowledge TEKS	Exit level TAKS Correlation
8.7 a,b 8.13 a,b,c	Objective 4 Objective 5	Objectives 3,4	7.6 a,b	IPC 5 a,d	Objective 5
Processes: 8.1 a, b 8.2 a, b, c, d, e 8.3 a, b, c, d, e 8.4 a, b 8.5 a, b, c		Objective 1	7.1 a, b 7.2 a, b, c, d, e 7.3 a, b 7.3 c, d, e 7.4 a, b	Biology: 1-3 IPC: 1-3	Objective 1

*\*Refer to Appendix for complete TEKS and TAKS objectives.*

### Pre-AP Course Curricular Requirements\*\*

*\*\*See Appendix for Pre-AP/AP Alignment Chart*

*2<sup>nd</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

## Alignment and Correlations Charts (continued)

Time Frame: 2<sup>nd</sup> Six Weeks (page 5 of 5)

### TEKS/National Science Education Standards Correlations\*\*\* Math Correlations

TEKS	National Science Education Standards	Math Correlations
8.12 a, b 8.12 c	Earth and Space Science Standard D Earth and Space Science Standard D	8.3, 8.6, 8.7, 8.10, 8.14, 8.15
8.14 a 8.14 c	Science in Personal and Social Perspectives Standard F Earth and Space Science Standard D Earth and Space Science Standard D	8.4, 8.10, 8.14
8.6 c	Science in Personal and Social Perspectives Standard F Science in Personal and Social Perspectives Standard F Life Science Standard C	8.1B, 8.2, 8.3, 8.9, 8.10, 8.14, 8.15, 8.16
Processes: 8.1 a, b	Science as Inquiry Standard A Science in Personal and Social Perspectives Standard F Science as Inquiry Standard A	8.1D, 8.2, 8.3, 8.4, 8.5, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.14, 8.15, 8.16
8.2 a, b, c, d, e	Science and Technology Standard E Science as Inquiry Standard A	
8.3 a	History and Nature of Science Standard G Science as Inquiry Standard A	
8.3 b, c	Science as Inquiry Standard A	
8.3 d, e	History and Nature of Science Standard G Science as Inquiry Standard A	
8.4 a, b	Science and Technology Standard E Science as Inquiry Standard A	
8.5 a, b, c	Science as Inquiry Standard A	

\*\*\*Refer to Appendix for complete TEKS Objectives and National Science Education Standards

# Science--Eighth Grade

**Time Frame: 3rd Six Weeks (page 1 of 4)**

<b>Unit Concepts:</b> <i>Earth Science:</i> Plate Tectonics, Minerals, Rocks, Science Project	<b>Unit Themes:</b> Systems, Constancy & Change	<b>Prentice Hall Chapters:</b> <b>Ch. 9, 10, 11</b>
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<b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.14 A</b> <b>8.12 A</b> <b>8.1 -8.5</b>	<b>Required Exemplar Labs,</b> “History From Rocks”, “Minute Rice Lab”, and Rock Cycle Lab, <b>and</b> <b>Suggested Instructional Activities</b> <b>Integrating Concepts &amp; Processes</b>	<b>Suggested Resources</b> (Use of additional & various resources from multiple sources is necessary to meet the TEKS)
<p><b>(8.14)</b> Science concepts. The student knows that natural events and human activities can alter Earth systems. The student is expected to:</p> <p>(A) predict land features resulting from gradual changes such as mountain building, beach erosion, land subsidence, and continental drift;</p>	<p>“History From Rocks”, Grand 8 Prentice Hall Lab Manual. Lab 11, p. 51 – 54.</p>	<p>FOSS: “Earth History”</p> <p>Snapshot Activities: 8.12 A, 8.14 A <a href="http://www.tenet.edu/teks/science/teks/snapshots/index.html?8th">http://www.tenet.edu/teks/science/teks/snapshots/index.html?8th</a></p> <p>Why Are the Mountains So High?: An Introduction to Mountains and Mountain Building. Rainbow Educational Media. 1995. unitedstreaming. 15 August 2005 <a href="http://www.unitedstreaming.com/">http://www.unitedstreaming.com/</a></p>

*3<sup>rd</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

**Time Frame: 3rd Six Weeks (page 2 of 4)**

<p><b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.14 A</b> <b>8.12 A</b> <b>8.1 -8.5</b></p>	<p><b>Required Exemplar Labs,</b> “History From Rocks”, “Minute Rice Lab”, and Rock Cycle Lab <b>and</b> <b>Suggested Instructional Activities Integrating Concepts &amp; Processes</b></p>	<p><b>Suggested Resources</b> (Use of additional &amp; various resources from multiple sources is necessary to meet the TEKS)</p>
<p><b>(8.12)</b> Science concepts. The student knows that cycles exist in Earth systems. The student is expected to:</p> <p>(A) analyze and predict the sequence of events in the lunar and rock cycles;</p> <p><b>Scientific Processes</b> <b>8.1, 8.2, 8.3, 8.4, 8.5</b> (40% Course Requirement minimum)</p> <p>Ongoing / Integrated with Concepts throughout unit.</p>	<p><b>Activity:</b> The student will demonstrate an understanding of types of cycles in Earth systems:</p> <ul style="list-style-type: none"> <li>• Evaluate the impact of man’s modification of Earth systems;</li> <li>• STARLAB activity, model hurricanes, “sail” to distant shores;</li> <li>• STARLAB activity: Model lunar cycle and phases.;</li> <li>• STARLAB Galaxy Cylinder; and</li> </ul> <p>GEMS activity: Earth, Moon &amp; Stars</p> <p><b>Science Project:</b> (continued)</p> <ul style="list-style-type: none"> <li>• Prepare report and exhibit.</li> </ul>	<p><b>FOSS:</b> “Earth History” <b>FOSS:</b> “Planetary Science” Investigation # 9</p> <p>Vista, “Rock Cycle”: <a href="http://www.tenet.edu/teks/science/instruction/vistas/index.html?md">http://www.tenet.edu/teks/science/instruction/vistas/index.html?md</a></p> <p>TEXTTEAMS Activities</p> <p>ISEF Science Fair: <a href="http://www.sciserve.org/isef/teachers/index.asp">http://www.sciserve.org/isef/teachers/index.asp</a></p>

*3<sup>rd</sup> Six Weeks Unit continued on next page*

## Science--Eighth Grade Alignment and Correlations Charts

Time Frame: 3<sup>rd</sup> Six Weeks (page 3 of 4)

### TEKS/TAKS Correlations\*

8 <sup>th</sup> Gr. TEKS	8 <sup>th</sup> Grade TAKS Correlation	5 <sup>th</sup> Grade TAKS Correlation	Prior Knowledge TEKS	Subsequent Knowledge TEKS	Exit level TAKS Correlation
8.12 A 8.14 A	Objective 5 Objective 5	Objective 4		Bio: 12 IPC 9 b, 5 a, 6 b, d	
Processes: 8.1 a, b 8.2 a, b, c, d, e 8.3 a, b, c, d, e 8.4 a, b 8.5 a, b, c		Objective 1	7.1 a, b 7.2 a, b, c, d, e 7.3 a, b 7.3 c, d, e 7.4 a, b	Biology: 1-3  IPC: 1-3	Objective 1

*\*Refer to Appendix for complete TEKS and TAKS objectives.*

### Pre-AP Course Curricular Requirements\*\*

*\*\*See Appendix for Pre-AP/AP Alignment Chart*

*3rd Six Weeks Unit continued on next page*

# Science--Eighth Grade

## Alignment and Correlations Charts (continued)

Time Frame: 3<sup>rd</sup> Six Weeks (page 4 of 4)

### TEKS/National Science Education Standards Correlations\*\*\* Math Correlations

TEKS	National Science Education Standards	Math Correlations
8.10 b	Physical Science Standard B Earth and Space Science Standard D	8.1B, 8.2, 8.3, 8.4, 8.5, 8.10, 8.14, 8.15, 8.16
8.10 c	Physical Science Standard B	
8.12 b	Earth and Space Science Standard D	8.3, 8.6, 8.7, 8.10, 8.14,
8.12 c	Earth and Space Science Standard D	8.15
	Science in Personal and Social Perspectives Standard F	
8.14 c	Earth and Space Science Standard D	8.4, 8.10, 8.14
	Science in Personal and Social Perspectives Standard F	
8.8 a, b	Physical Science Standard B	8.2, 8.15
8.9 a, b, c, d	Physical Science Standard B	8.1, 8.2, 8.3, 8.14, 8.15
Processes:	Science as Inquiry Standard A	8.1D, 8.2, 8.3, 8.4, 8.5, 8.7,
8.1 a, b	Science in Personal and Social Perspectives Standard F	8.8, 8.9, 8.10, 8.11, 8.12,
	Science as Inquiry Standard A	8.14, 8.15, 8.16
8.2 a, b, c, d, e	Science and Technology Standard E	
	Science as Inquiry Standard A	
	History and Nature of Science Standard G	
8.3 a	Science as Inquiry Standard A	
	Science as Inquiry Standard A	
8.3 b, c	History and Nature of Science Standard G	
8.3 d, e	Science as Inquiry Standard A	
	Science and Technology Standard E	
8.4 a, b	Science as Inquiry Standard A	
8.5 a, b, c	Science as Inquiry Standard A	

\*\*\*Refer to Appendix for complete TEKS Objectives and National Science Education Standards

# Science--Eighth Grade

**Time Frame: 4th Six Weeks (page 1 of 5)**

<b>Unit Concepts:</b> <i>Earth/Environmental Science:</i> Resources, Oceans, Climate Science Project	<b>Unit Themes:</b> Systems Properties, Patterns and Models	<b>Prentice Hall Chapters:</b> <b>Ch. 12, 13, 14, &amp;15</b>
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<b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.10 B</b> <b>8.12 B,C</b> <b>8.14 A,C</b> <b>8.1 – 8.5</b>	<b>Required Exemplar Lab,</b> <b>“Water Quality”</b> <b>Recommendations: “Foss Kit: Weather</b> <b>&amp; Water”</b> <b>and</b> <b>Suggested Instructional Activities</b> <b>Integrating Concepts &amp; Processes</b>	<b>Suggested Resources</b> (Use of additional & various resources from multiple sources is necessary to meet the TEKS)
<p><b>(8.10)</b> Science concepts. The student knows that complex interactions occur between matter and energy. The student is expected to:</p> <p>(B) describe interactions among solar, weather, and ocean systems</p>	<p><b>Activity:</b> The student will demonstrate an understanding of types of cycles in Earth systems:</p> <ul style="list-style-type: none"> <li>• Evaluate the impact of man’s modification of Earth systems;</li> <li>• STARLAB activity, “<u>Patterns of Ocean Currents</u>”;</li> <li>• STARLAB activity, model hurricanes, “sail” to distant shores;</li> </ul>	<p>FOSS: “Weather and Water”</p> <p>Snapshot Activities: 8.14 C <a href="http://www.tenet.edu/teks/science/teks/snapshots/index.html?8th">http://www.tenet.edu/teks/science/teks/snapshots/index.html?8th</a></p> <p>Graphs, Charts and Tables Activities, <a href="http://www.tenet.edu/teks/science/instruction/tutorial.html">http://www.tenet.edu/teks/science/instruction/tutorial.html</a></p>

*4<sup>th</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

**Time Frame: 4th Six Weeks (page 2 of 5)**

<b>Unit Concepts:</b> <i>Earth/Environmental Science:</i> Resources, Oceans, Climate Science Project	<b>Unit Themes:</b> Systems Properties, Patterns and Models	<b>Prentice Hall Chapters:</b> <b>Ch. 12, 13, 14, &amp;15</b>
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<b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.10 B</b> <b>8.12 B,C</b> <b>8.14 A,C</b> <b>8.1 – 8.5</b>	<b>Required Exemplar Lab,</b> “Water Quality” <b>Recommendations:</b> “Foss Kit: Weather & Water” <b>and</b> <b>Suggested Instructional Activities</b> <b>Integrating Concepts &amp; Processes</b>	<b>Suggested Resources</b> (Use of additional & various resources from multiple sources is necessary to meet the TEKS)
<p><b>(8.12)</b> Science concepts. The student knows that cycles exist in Earth systems. The student is expected to:</p> <p style="padding-left: 40px;">(B) relate the role of oceans to climatic changes; and</p> <p style="padding-left: 40px;">(C) predict the results of modifying the Earth's nitrogen, water, and carbon cycles.</p>	<p><b>Activity:</b> The student will relate the role of ocean to climatic changes:</p> <ul style="list-style-type: none"> <li>• Model the water cycle.</li> <li>• Analyze, review and critique strengths/weaknesses of scientific explanations pertaining to ocean/climate issues, including hypotheses and theories, using scientific evidence and information.</li> <li>• Use data from NASA satellites measuring the height/depth of ocean movements.</li> </ul>	<p>FOSS: “Weather and Water”</p> <p>Snapshot Activities: 8.14 C <a href="http://www.tenet.edu/teks/science/teks/snapshots/index.html?8th">http://www.tenet.edu/teks/science/teks/snapshots/index.html?8th</a></p> <p>Graphs, Charts and Tables Activities, <a href="http://www.tenet.edu/teks/science/instruction/tutorial.html">http://www.tenet.edu/teks/science/instruction/tutorial.html</a></p> <p>Cycle Series, The: The Water Cycle. United Learning. 1993. unitedstreaming. 15 August 2005 <a href="http://www.unitedstreaming.com/">http://www.unitedstreaming.com/</a></p>

*4<sup>th</sup> Six Weeks Unit continued on next page*

# Science—Eighth Grade

**Time Frame: 4th Six Weeks (page3 of 5)**

<p><b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.10 B</b> <b>8.12 B,C</b> <b>8.14 A,C</b> <b>8.1 – 8.5</b></p>	<p><b>Required Exemplar Lab,</b> “Water Quality” <b>Recommendations: “Foss Kit: Weather &amp; Water”</b> <b>and</b> <b>Suggested Instructional Activities Integrating Concepts &amp; Processes</b></p>	<p><b>Suggested Resources</b> (Use of additional &amp; various resources from multiple sources is necessary to meet the TEKS)</p>
<p><b>(8.14)</b> Science concepts. The student knows that natural events and human activities can alter Earth systems. The student is expected to:</p> <p>(A) predict land features resulting from gradual changes such as mountain building, beach erosion, land subsidence, and continental drift;</p> <p>(C) describe how human activities have modified soil, water, and air quality.</p> <p><b>Scientific Processes</b> <b>8.1, 8.2, 8.3, 8.4, 8.5</b> (40% Course Requirement minimum) Ongoing / Integrated with Concepts throughout unit.</p>	<p><b>Exemplar Lab(s):</b> “Water Quality”—understand the meaning and effect of pH and the factors that affect pH.</p>	<p>TEXTEAMS Activities “Water Quality” <u>Explorations: Activities for Middle Grades Science with the CBL2 and the TI-73.</u> Texas Instruments. ©2001. Activity15, p. 134-140.</p>

**STUDENT PRODUCTS** may include (but are not limited to):~ Journals/Notebooks/Reports ~ Projects ~Labs ~Presentations

**Copy of Exemplar Lab, “Water Quality” located in Appendix.**

*4<sup>th</sup> Six Weeks Unit continued on next page*

## Science--Eighth Grade Alignment and Correlations Charts

Time Frame: 4<sup>th</sup> Six Weeks (page 4 of 5)

### TEKS/TAKS Correlations\*

8 <sup>th</sup> Gr. TEKS	8 <sup>th</sup> Grade TAKS Correlation	5 <sup>th</sup> Grade TAKS Correlation	Prior Knowledge TEKS	Subsequent Knowledge TEKS	Exit level TAKS Correlation
8.10 b 8.12 b,c 8.14 a,c	Objective 2 Objective 5 Objective 5	Objectives 2,3,4 Objective 3 Objective 2,4	7.8 a,b, 7.12 b  7.12 b	Bio: 9d IPC 6a  Bio: 12 d	Objs. 3,4,5
Processes: 8.1 a, b 8.2 a, b, c, d, e 8.3 a, b, c, d, e 8.4 a, b 8.5 a, b, c		Objective 1	7.1 a, b 7.2 a, b, c, d, e 7.3 a, b 7.3 c, d, e 7.4 a, b	Biology: 1-3  IPC: 1-3	Objective 1

*\*Refer to Appendix for complete TEKS and TAKS objectives.*

### Pre-AP Course Curricular Requirements\*\*

*\*\*See Appendix for Pre-AP/AP Alignment Chart*

## Science--Eighth Grade

### Alignment and Correlations Charts (continued)

**Time Frame: 4<sup>th</sup> Six Weeks (page 5 of 5)**

#### TEKS/National Science Education Standards Correlations\*\*\*

##### Math Correlations

TEKS	National Science Education Standards	Math Correlations
8.6 a	Life Science Standard C	8.1B, 8.2, 8.3, 8.9, 8.10,
8.7 a, b	Physical Science Standard B	8.14, 8.15, 8.16
8.10 a	Physical Science Standard B Earth and Space Science Standard D	8.1B, 8.2, 8.3, 8.4, 8.5, 8.10, 8.14, 8.15, 8.16
Processes:	Science as Inquiry Standard A	8.1D, 8.2, 8.3, 8.4, 8.5, 8.7,
8.1 a, b	Science in Personal and Social Perspectives Standard F Science as Inquiry Standard A	8.8, 8.9, 8.10, 8.11, 8.12, 8.14, 8.15, 8.16
8.2 a, b, c, d, e	Science and Technology Standard E Science as Inquiry Standard A History and Nature of Science Standard G	
8.3 a	Science as Inquiry Standard A Science as Inquiry Standard A	
8.3 b, c	History and Nature of Science Standard G	
8.3 d, e	Science as Inquiry Standard A Science and Technology Standard E	
8.4 a, b	Science as Inquiry Standard A	
8.5 a, b, c	Science as Inquiry Standard A	

**\*\*\*Refer to Appendix for complete TEKS Objectives and National Science Education Standards**

# Science--Eighth Grade

**Time Frame: 5th Six Weeks (page 1 of 4)**

<b>Unit Concepts:</b>	<b>Unit Themes:</b>	<b>Prentice Hall Chapters:</b>
<i>Life Science:</i> Heredity Genetics	Systems Properties, Patterns and Models	<b>Ch. 16, 17, &amp; 19</b>

<b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.6 A,B</b> <b>8.11 A,B,C</b> <b>8.1 – 8.5</b>	<b>Required Exemplar Lab,</b> <b>“Chromosomes and Inheritance”</b> <b>and</b> <b>Suggested Instructional Activities</b> <b>Integrating Concepts &amp; Processes</b>	<b>Suggested Resources</b> (Use of additional & various resources from multiple sources is necessary to meet the TEKS)
<p><b>(8.6)</b> Science concepts. The student knows that interdependence occurs among living systems. The student is expected to:</p> <ul style="list-style-type: none"> <li>(A) describe interactions among systems in the human organism.</li> <li>(B) identify feedback mechanisms that maintain equilibrium of systems such as body temperature, turgor pressure, and chemical reactions</li> </ul>		<p>“Chromosomes and Inheritance”: Grade 8 Prentice Hall Lab Manual. Lab 16, p. 73 – 76.</p>

*5<sup>th</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

**Time Frame: 5th Six Weeks (page 2 of 4)**

<b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.6 A,B</b> <b>8.11 A,B,C</b> <b>8.1 – 8.5</b>	<b>Required Exemplar Lab,</b> <b>“Chromosomes and Inheritance”</b> <b>and</b> <b>Suggested Instructional Activities</b> <b>Integrating Concepts &amp; Processes</b>	<b>Suggested Resources</b> (Use of additional & various resources from multiple sources is necessary to meet the TEKS)
<p><b>(8.11)</b> Science concepts. The student knows that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organisms. The student is expected to :</p> <ul style="list-style-type: none"> <li>(A) identify that change in environmental conditions can affect the survival of individuals and of species;</li> <li>(B) distinguish between inherited traits and other characteristics that can result from interactions with the environment; and</li> <li>(C) make predictions about possible outcomes of various genetic combinations of inherited characteristics.</li> </ul> <p><b>Scientific Processes</b>  <b>8.1, 8.2, 8.3, 8.4, 8.5</b>                      (40% Course Requirement minimum)</p> <p>Ongoing / Integrated with Concepts throughout unit.</p>		<p>Snapshot Activities 8.11 C, 8.11 B, 8.11 A,  <a href="http://www.tenet.edu/teks/snapshots/index.html?8th">http://www.tenet.edu/teks/snapshots/index.html?8th</a></p> <p>TEXTEAMS Activities</p> <p>“Variation In a Population”:                      Grade 8 Prentice Hall Lab Manual. Lab 18, p. 83 – 86.</p> <p>Genes, Genetics, and DNA.                      Rainbow Educational Media. 2003.                      unitedstreaming. 15 August 2005  <a href="http://www.unitedstreaming.com/">http://www.unitedstreaming.com/</a></p>

STUDENT PRODUCTS may include (but are not limited to):~ Journals/Notebooks/Reports ~ Projects ~Labs ~Presentations

*5th Six Weeks Unit continued on next page*

## Science--Eighth Grade Alignment and Correlations Charts

Time Frame: 5<sup>th</sup> Six Weeks (page 3 of 4)

### TEKS/TAKS Correlations\*

8 <sup>th</sup> Gr. TEKS	8 <sup>th</sup> Grade TAKS Correlation	5 <sup>th</sup> Grade TAKS Correlation	Prior Knowledge TEKS	Subsequent Knowledge TEKS	Exit level TAKS Correlation
8.6 a,b	Objective 2	Objective 2	7.5 a,b 7.9 a,b, 7.11 b, 7.12 b,c	Bio: 4 b,c,d 10 a, 12 b,c 13 a	Objs. 2,3,4
8.11 a,b,c	Objective 2				
Processes: 8.1 a, b 8.2 a, b, c, d, e 8.3 a, b, c, d, e 8.4 a, b 8.5 a, b, c		Objective 1	7.1 a, b 7.2 a, b, c, d, e 7.3 a, b 7.3 c, d, e 7.4 a, b	Biology: 1-3  IPC: 1-3	Objective 1

*\*Refer to Appendix for complete TEKS and TAKS objectives.*

### Pre-AP Course Curricular Requirements\*\*

*\*\*See Appendix for Pre-AP/AP Alignment Chart*

*5<sup>th</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

## Alignment and Correlations Charts (continued)

Time Frame: 5<sup>th</sup> Six Weeks (page 4 of 4)

### TEKS/National Science Education Standards Correlations\*\*\* Math Correlations

TEKS	National Science Education Standards	Math Correlations
8.6 a	Life Science Standard C	8.1B, 8.2, 8.3, 8.9, 8.10,
8.7 b	Physical Science Standard B	8.14, 8.15, 8.16
8.10 a	Physical Science Standard B	8.1B, 8.2, 8.3, 8.4, 8.5,
	Earth and Space Science Standard D	8.10, 8.14, 8.15, 8.16
8.13 a, b, c	Earth and Space Science Standard D	8.1, 8.3, 8.6, 8.14
Processes:	Science as Inquiry Standard A	8.1D, 8.2, 8.3, 8.4, 8.5, 8.7,
8.1 a, b	Science in Personal and Social Perspectives Standard F	8.8, 8.9, 8.10, 8.11, 8.12,
	Science as Inquiry Standard A	8.14, 8.15, 8.16
8.2 a, b, c, d, e	Science and Technology Standard E	
	Science as Inquiry Standard A	
	History and Nature of Science Standard G	
8.3 a	Science as Inquiry Standard A	
	Science as Inquiry Standard A	
8.3 b, c	History and Nature of Science Standard G	
8.3 d, e	Science as Inquiry Standard A	
	Science and Technology Standard E	
8.4 a, b	Science as Inquiry Standard A	
8.5 a, b, c	Science as Inquiry Standard A	

\*\*\*Refer to Appendix for complete TEKS Objectives and National Science Education Standards

# Science—Eighth Grade

**Time Frame: 6th Six Weeks (page 1 of 4)**

<b>Unit Concepts:</b> <i>Life Science:</i> Change Over Time Living Systems	<b>Unit Themes:</b> Systems Constancy & Change	<b>Prentice Hall Chapters:</b> <b>Ch. 18 &amp; 19</b>
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<b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.6 B, C</b> <b>8.14 B</b> <b>8.1 – 8.5</b>	<b>Required Exemplar Labs,</b> “Adaptations of Birds” <b>Additional Recommendations:</b> “Rat Dissection” & “Owl Pellets” <b>and</b> <b>Suggested Instructional Activities</b> <b>Integrating Concepts &amp; Processes</b>	<b>Suggested Resources</b> (Use of additional & various resources from multiple sources is necessary to meet the TEKS)
<p><b>(8.6)</b> Science concepts. The student knows that interdependence occurs among living systems. The student is expected to:</p> <p style="padding-left: 40px;">(C) describe interactions within ecosystems.</p>	<p><b>Activity:</b> The student will identify that change in environmental conditions can affect the survival of individuals and species:</p> <ul style="list-style-type: none"> <li>• Review and analyze information of endangered and/or extinct species.</li> </ul> <p>Research and evaluate the impact of man’s contribution to the changing conditions of the environment and how it affects survival of individuals and species.</p>	<p>Snapshot Activities 8.11 C, 8.11 B, 8.11 A, 8.14 B, 8.6 A, B, C:  <a href="http://www.tenet.edu/teks/snapshots/index.html?8th">http://www.tenet.edu/teks/snapshots/index.html?8th</a></p> <p>Vista “Constancy and Change: Be Constant and Change”:  <a href="http://www.tenet.edu/teks/science/instruction/vistas/index.html?md">http://www.tenet.edu/teks/science/instruction/vistas/index.html?md</a></p> <p>Biology: The Science of Life:                      Ecology: Organisms in Their Environment. United Learning. 2003. unitedstreaming. 15 August 2005                      &lt;<a href="http://www.unitedstreaming.com/">http://www.unitedstreaming.com/</a>&gt;</p>

*6th Six Weeks Unit continued on next page*

# Science--Eighth Grade

**Time Frame: 6th Six Weeks (page 2 of 4)**

<p><b>Concept and Process TEKS</b> (reinforced TEKS in parentheses) <b>8.6 B, C</b> <b>8.14 B</b> <b>8.1 – 8.5</b></p>	<p><b>Required Exemplar Labs,</b> “Adaptations of Birds” <b>Additional Recommendations:</b> “Rat Dissection” &amp; “Owl Pellets” <b>and</b> <b>Suggested Instructional Activities</b> <b>Integrating Concepts &amp; Processes</b></p>	<p><b>Suggested Resources</b> (Use of additional &amp; various resources from multiple sources is necessary to meet the TEKS)</p>
<p><b>(8.14)</b> Science concepts. The student knows that natural events and human activities can alter Earth systems. The student is expected to:</p> <p style="padding-left: 40px;">(B) analyze how natural or human events may have contributed to the extinction of some species.</p> <p><b>Scientific Processes</b> <b>8.1, 8.2, 8.3, 8.4, 8.5</b> (40% Course Requirement minimum). Ongoing / Integrated with Concepts throughout unit.</p>	<p><b>Activity:</b> The student will distinguish between inherited traits and other characteristics that result from interactions with the environment:</p> <ul style="list-style-type: none"> <li>• Research different animals and their habitats and analyze the animal’s traits that enable it to live in that particular environment.</li> <li>• Analyze structures of similar species living in different environments.</li> </ul> <p><b>Activity:</b> Student will identify a problem and propose a solution for a given species or situation:</p> <ul style="list-style-type: none"> <li>• extinction of endangered species due to environmental encroachment.</li> </ul>	

**STUDENT PRODUCTS** may include (but are not limited to):~ Journals/Notebooks/Reports ~ Projects ~Labs ~Presentations

**Copy of Exemplar Labs, “Adaptation of Birds”” located in Appendix.**

*6<sup>th</sup> Six Weeks Unit continued on next page*

## Science--Eighth Grade Alignment and Correlations Charts

Time Frame: 6<sup>th</sup> Six Weeks (page 3 of 4)

### TEKS/TAKS Correlations\*

8 <sup>th</sup> Gr. TEKS	8 <sup>th</sup> Grade TAKS Correlation	5 <sup>th</sup> Grade TAKS Correlation	Prior Knowledge TEKS	Subsequent Knowledge TEKS	Exit level TAKS Correlation
8.6 c 8.14 b	Objective 2 Objective 5	Objectives 2,4	7.7 a 7.10 a, b, c 7.12 b, c	IPC: 8a Bio: 12 b, e IPC: 9b	Objs. 3,4,5
Processes: 8.1 a, b 8.2 a, b, c, d, e 8.3 a, b, c, d, e 8.4 a, b 8.5 a, b, c		Objective 1	7.1 a, b 7.2 a, b, c, d, e 7.3 a, b 7.3 c, d, e 7.4 a, b	Biology: 1-3  IPC: 1-3	Objective 1

*\*Refer to Appendix for complete TEKS and TAKS objectives.*

### Pre-AP Course Curricular Requirements\*\*

*\*\*See Appendix for Pre-AP/AP Alignment Chart*

*6<sup>th</sup> Six Weeks Unit continued on next page*

# Science--Eighth Grade

## Alignment and Correlations Charts (continued)

**Time Frame: 6<sup>th</sup> Six Weeks (page 4 of 4)**

### TEKS/National Science Education Standards Correlations\*\*\* Math Correlations

TEKS	National Science Education Standards	Math Correlations
8.6 a, b 8.6 c	Life Science Standard C	8.1B, 8.2, 8.3, 8.9, 8.10, 8.14, 8.15, 8.16
8.11 a	Science in Personal and Social Perspectives Standard F Life Science Standard C	8.4, 8.5, 8.10, 8.12, 8.13, 8.14, 8.15, 8.16
8.11 b, c 8.14 b	Science in Personal and Social Perspectives Standard F Life Science Standard C Earth and Space Science Standard D Science in Personal and Social Perspectives Standard F	8.4, 8.10, 8.14
Processes: 8.1 a, b	Science as Inquiry Standard A Science in Personal and Social Perspectives Standard F Science as Inquiry Standard A	8.1D, 8.2, 8.3, 8.4, 8.5, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, 8.14, 8.15, 8.16
8.2 a, b, c, d, e	Science and Technology Standard E Science as Inquiry Standard A History and Nature of Science Standard G	
8.3 a	Science as Inquiry Standard A Science as Inquiry Standard A	
8.3 b, c 8.3 d, e	History and Nature of Science Standard G Science as Inquiry Standard A Science and Technology Standard E	
8.4 a, b 8.5 a, b, c	Science as Inquiry Standard A Science as Inquiry Standard A	

\*\*\*Refer to Appendix for complete TEKS Objectives and National Science Education Standards

# APPENDIX

## **Texas Essential Knowledge and Skills**

- Fifth Grade Science
- Sixth Grade Science
- Seventh Grade Science
- Eighth Grade Science
- Integrated Physics and Chemistry
- Biology
- Eighth Grade Math

## **Texas Assessment of Knowledge and Skills Objectives**

- Fifth Grade
- Tenth Grade and Exit Level (10<sup>th</sup> and 11<sup>th</sup> Grade)

## **National Science Education Standards**

### **Science TEKS Toolkit Excerpts**

- Materials and Safety Equipment List
- Checklist for Science Field Investigations
- Science Facility Safety Checklist
- Laboratory Safety Survey
- Assessment Methods
- Web-Based Resources

## **Texas Environmental Education Advisory Committee Contact Information**

### **Pre-AP and AP Science Scope and Sequence Grades 6-12**

### **Required Exemplar Labs (with teacher notes)**

- “Recognizing Laboratory Safety”
- “History From Rocks”
- “Water Quality”
- “The Law of Definite Proportions”
- “Shedding Light on Chemical Bonds”
- “Tuning Forks”
- “Variation In a Population”
- “Chromosomes and Inheritance”

## Eighth Grade Exemplar Labs

Number	TEKS	Exemplar Lab	Source
1.	8.1A	“Recognizing Laboratory Safety”	Grade 8 Prentice Hall Lab Manual. p. ix – xii.
2.	8.12A	“History From Rocks”	Grade 8 Prentice Hall Lab Manual. Lab 11, p. 51-54.
3.	8.14C	“Water Quality”	Explorations: Activities for Middle Grades Science with the CBL2 and the TI-73. Texas Instruments. © 2001. Activity 15, p. 134-140.
4.		“Indy 100”	Vernier Middle School Science with Calculators
5.			
6.	8.7B	“Tuning Forks”	Grade 8 Prentice Hall Lab Manual. Lab 5, p. 23-26.
7.	8.11B	“Variation in a Population”	Grade 8 Prentice Hall Lab Manual. Lab 18, p. 83-86.
8.	8.11C	“Chromosomes and Inheritance”	Grade 8 Prentice Hall Lab Manual. Lab 16, p. 73-76.

**Note:** Although directions may be given for the TI-73 graphing calculator, the activity will work using the TI-83 model with minor modifications. These labs are provided in “cookbook” format. They may be modified by the teacher to be inquiry formatted as appropriate. It is the responsibility of the campus to provide the probeware, calculators, and other equipment required for by the labs for all students. This may require campus departments to plan ahead and share resources, and may require departments to make wise decisions when purchasing instructional supplies and equipment.

# National Science Education Content Standards For Grades 5-8

<b>Content Standard</b>	
A: Science As Inquiry	Abilities to do scientific inquiry Understandings about scientific inquiry
B: Physical Science	Properties and changes of properties in matter Motions and forces Transfer of energy
C: Life Science	Structure and function in living systems Reproduction and heredity Regulation and Behavior Populations and ecosystems Diversity and adaptations of organisms
D: Earth and Space Science	Structure of the earth system Earth's history Earth in the solar system
E: Science and Technology	Abilities of technological design Understandings about science and technology
F: Science in Personal and Social Perspectives	Personal health Populations, resources, and environments Natural hazards Risks and benefits Science and technology in society
G: History and Nature of Science	Science as a human endeavor Nature of science History of science