

The Texas Puzzle

UNIT: The Texas Puzzle (MI/Technology)

Teacher: Karen Giesler

Grade Level: 7th

Subject: Science

Time Frame: 3+ weeks

GOALS	INTELLIGENCES	TECHNOLOGIES	NETS for students
<p>TEKS 7.1, 7.2, 7.3, 7.5B, 7.8B, 7.10B, 7.11, 7.12, 7.14C</p> <p>Students will meet these objectives through the understanding of the essential vocabulary and the study of the Texas natural regions. This task will be accomplished through a series of hands-on activities utilizing the multiple intelligences and incorporating technology equipment / skills.</p>	<p>VL LM MR NT VS BK IE IA EX</p>	<p>Web Word Excel Publisher PowerPoint Video DVD Camera</p>	<p>1. Basic operations 2. Social and human issues 3. Productivity tools 4. Communication tool 5. Research tools 6. Problem-solving tools</p>

MATERIALS	INTELLIGENCES
<p>Web Search (1 copy/student) Unit packet (1 copy/student) Ecology of the Greater Prairie Chicken (1 copy /student) Peppered Moth Survey (1 copy/student) Butcher paper (for group mind maps) Class Library for additional resources</p>	<p>VL, LM (based on student choices) VS, LM VS, LM VS, BK VL</p>

DAILY TASKS	INTELLIGENCES
Day 1 Research in Library	VL
Day 2 Computer Lab (Group research)	VL, IE
Day 3 Web Search– <u>Changes in History</u> timeline–comp lab	LM
Day 4 Discuss <u>adaptations</u> / individual adaptation project “Create A Critter” (Home based)	LM, NT, BK, VL, MR
Day 5 Ecology of the Greater Prairie Chicken <u>graphing</u> activity (In class project)	LM, VS
Day 6 Peppered Moth Survey – <u>graph interpretation</u> activity (In class project)	LM, VS
Day 7 <u>Cycles</u> – mind mapping notes	VS, LM
Day 8 Presentation of individual adaptation project (to include reading of story written by a pair of students. The drama should be the interaction between two critters – to include sound effects)	IE, MR, NT, VS
Day 9 Group prep (teams to work on puzzle piece, brochure or PowerPoint in class)	LM, NT
Day 10 Group prep (teams to work on puzzle piece, brochure or PowerPoint in class)	IE
Day 11 Group prep (teams to work on puzzle piece, brochure or PowerPoint in class)	IE
Day 12 Group prep (teams to work on puzzle piece, brochure or PowerPoint in class)	IE
Day 13 Final prep day (in class)!	IE, VL
Day 14 Group presentations of puzzle piece, brochure and PowerPoint to classmates	IE, VL
Day 15 Group presentations of puzzle piece, brochure	IE, VL

LESSON PLANS

Day 1	<ol style="list-style-type: none"> 1. Discuss unit on Texas ecosystems (students have studied the regions of Texas in their Texas History class and are eager to share what they know!) 2. Distribute Puzzle of Texas sheets 3. Allow groups to discuss the ecosystem they will investigate and sign-up on board 4. Proceed to library to begin research on the chosen ecosystem
Day 2	<ol style="list-style-type: none"> 1. Class meets in computer lab to continue the research for their project
Day 3	<ol style="list-style-type: none"> 1. Class meets in computer lab to research Changes in History. 2. HW: Create a timeline depicting changes with regard to Texas environment (Timeline due Day 5)
Day 4	<ol style="list-style-type: none"> 1. Discuss the vocabulary word "adaptations" with regard to ways the students have adapted to this classroom as compared to another classroom this year. 2. Discuss "Create A Critter" adaptation project 3. Remaining time is brainstorming/planning time with a partner! (Critter is due Day 8)
Day 5	<ol style="list-style-type: none"> 1. Class defines essential graphing techniques 2. Distribute "Greater Prairie Chicken" Survey. Students read data, create data chart, and prepare a graph to analyze what is happening to this animals population. Essential elements are graph title, axis titles/units, and accurate data recording.
Day 6	<ol style="list-style-type: none"> 1. Class meets in the computer lab. 2. Distribute Peppered Moth survey. Students will read the data and construct a data table using Microsoft Excel. This data will be graphed using this program. Students will attach a written analysis of the graph answering the questions posed in this survey.
Day 7	<ol style="list-style-type: none"> 1. Using the textbooks as resources, students will research the water cycle, Nitrogen cycle, and Oxygen cycle. Teams will mind map their research using a format to illustrate the relationship between these cycles within their ecosystem.
Day 8	<ol style="list-style-type: none"> 1. Presentations of Critters! To include: Students will read/present their interaction stories Classmates will visually (from their desks) search for each critter so entire class will be able to visualize the critters adaptation
Day 9	<ol style="list-style-type: none"> 1. Teams will work on their Texas Puzzle piece projects! Using the research from the beginning of the project, the teams will work on preparing storyboards prior to working on their PowerPoint presentations in the computer labs. Plans will be put in place for completion of all requirements of project. <ul style="list-style-type: none"> • With storyboards complete, group members will work in the computer lab. • Group members will work on the 3-D Texas puzzle piece • Group members will work on a travel brochure in the computer lab or with their own artistic abilities!
Day 10	
Day 11	
Day 12	
Day 13	
Day 14	<ol style="list-style-type: none"> 1. Presentations!
Day 15	
Day 16	<ol style="list-style-type: none"> 1. Prepare for Debate (Why should you ecosystem be selected as the model region in the outdoor classroom?)
Day 17	<ol style="list-style-type: none"> 1. Debate 2. Criteria for personal evaluation discussed.
Day 18	<ol style="list-style-type: none"> 1. Personal evaluation due!

ASSESSMENT	INTELLIGENCES
<p>QUEST: over critical vocabulary</p> <p>DEBATE: (one day team prep – in class) Teams will debate the following question: Why should your ecosystem be selected as the model region for the outdoor classroom?</p> <p>PERSONAL ASSESSMENT: (home based) Write a personal evaluation of your team’s performance. Be certain to include your exact participation in this activity. Format is up to you!</p>	<p>LM, VL</p> <p>IE, VL, VS, EX, NT, LM</p> <p>LM, IA</p>

ASSESSMENT RUBRICS: *(points shown are the greatest amount of points awarded in each category – teacher may award point totals between the categories!)*

ACTIVITY	EXCELLENT	AVERAGE	INCOMPLETE	POINTS
Research	15 Note cards contain accurate data of required information, sources cited	10 Most data present, but not connected to the main topic.	5 Basic data – no fluid movement within the context	example 13 missing 1 cite
Puzzle piece	25 Shape and size are consistent with surroundings. Required elements present. Creative and Neat!	20 Shape and size consistent, but materials do not represent the required elements well. Neatness needs work!	15 Shape and size of puzzle piece is not consistent with surrounding regions; creativity and neatness are barely in existence.	
Travel Brochure	25 Texas biome is well represented as a place to visit!	20 This biome is inviting, but not all project requirements are represented.	15 The biome is inviting, but only to a select group of travelers!	
PowerPoint Presentation	25 Excellent work – text is visible, graphics are appropriate, and transition between slides is an asset to the presentation!	20 Good work – text is visible, graphics are appropriate, but transition between slides is distracting to the presentation.	15 Good work overall, but visual presentation is weak due to font, color, and transitions.	
Group Presentation	10 Everyone involved with equal work! Is evident the group worked on speaking techniques and timing!	7 Everyone involved with equal work! Group needs to work on speaking techniques and	5 Total group involvement lacking. Speaking skills and timing need work!	

⇒ **Textbook Source:** Glencoe Science 7

TEKS:

- 7.1 Investigations and Safety - Scientific processes.
- 7.2 Scientific Inquiry – Scientific processes
- 7.3 Critical thinking and Scientific processes
- 7.4 Tools and Technology - Scientific procedures
- 7.5 Equilibrium may change systems
- 7.8 Matter and Energy
- 7.10 Heredity
- 7.11 Response of organisms - Ecology
- 7.12 Energy and the Environment
- 7.14 Earth Systems – Natural Events

NOTES:

- The “Create A Critter” project will be multi-faceted. Each student will create a critter that has adapted to life in the classroom. Therefore, the critter will be difficult to find. Students will place their critter in its natural habitat. During the creation time, a pair of students will have shared the specifics and written a story about the interaction of their critters. This story will be read by the students and will include appropriate sound effects. The class will then search for the students’ critters using the clues provided in the drama!
- Group projects will involve the construction of a piece of Texas in the shape of their ecosystem. This puzzle piece will be designed to show natural land formations, flora, fauna, natural resources, major cities, and other points of interest. As each group presents their 3-D part of the jigsaw, the state will be form before all eyes as it is attached to the class wall. Students will see how the ecosystems meld together and the part each ecosystem plays in the total picture of Texas.
- A webquest of this unit is under construction. The original idea presented to this author was simplistic. This step in the Texas Puzzle has been altered. The new title is Web Search and will be a simple search for knowledge using specific websites. The new research has opened a new world. There is much potential for excitement in the new organization – the resulting project will reformat this entire unit!