

Developing Teacher Capacity to Implement GIS in the Geography Curriculum

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Abstract

GIS Education is making headways into the K-12 classroom through career/technology and magnet programs. However, Texas has mandated Geography teachers to use "GIS" in the Texas Essential Knowledge and Skills (TEKS) Standards without providing support, resources, and lessons for the Geography Curriculum. In association with Dr. Steve Brown at the University of Texas at San Antonio, North East Independent School District with 7 high schools and 11 middle schools has begun to meet the challenge of the state standards for using GIS in the Geography classroom. North East is developing teacher awareness, along with knowledge and training in GIS as a teaching tool, by implementing workshops and follow-ups during the school year using *Mapping Our World: GIS Lessons for Educators*.

Paper

Although there have been numerous research articles detailing the difficulty in implementing Geographical Information Systems (GIS) into the secondary classroom, there has been a fundamental shift towards standards-based learning in which educators are now being held accountable for learning standards by the respective state's department of education on standardize testing and No Child Left Behind (NCLB). This shift brings an additional set of issues in the implementation of GIS, but it also paves the way for the adoption of this technology into the secondary curriculum and classroom by the use of these standards. In North East Independent School District, we have used the Texas Essential Knowledge and Skills (TEKS) to develop a training model utilizing *Mapping Our World: GIS Lessons for Educators* to start the process of educating geography teachers in the use of GIS and spatial inquiry in their curriculum.

In the process of researching implementation models and discussing with teachers at other school districts their implementation of GIS in the

Geography curriculum, we wanted our focus to be a little different from the typical implementations we found across Texas. We found that GIS is typically implemented in one of two different scenarios in most districts. One scenario is GIS being used in a career and technology and/or magnet school program. In these classes students learn how to use GIS to solve a problem as in scientific research or to learn GIS skills for use in the job market. Although these programs are definitely needed and can serve a purpose in getting GIS in a school district, there are some issues that exist in such situations. In San Antonio, Roosevelt High School (North East) started a GIS program two years ago in the Engineering and Technologies Academy. This program is currently being funded by federal money and is prohibited from being spent anywhere else but career and technology courses. This limits the amount of sharing of GIS software, knowledge, and support and often reinforces turf wars between career and technology and the regular academic teachers in the implementation of GIS in the academic curriculum.

The second scenario is one of the "lone ranger" teachers who have the foresight to learn how to use GIS in the classroom (Kerski 2003). They usually are early adopters of technology and are usually using other technology at the practitioner/expert level in the classroom (NEISD Innovation Configuration, see Appendix). The problems that most of these teachers face in the implementation are ultimately the lack of support from the district technology and curriculum departments. One of the first hurdles for teachers at the campus level is convincing the district's network personnel to install ArcView/ArcGIS on the school computers. Even if the software is installed, it is a common frustration and viewpoint that GIS is not being supported by instructional technology and curriculum specialists at the district level. Thus, it makes it harder to get GIS integrated into the curriculum across the district due to the lack of "GIS awareness" from

district personnel who focus on the more traditional teaching methods and other uses of technology that need to be taught.

Given the scenarios that we researched and discussed with other teachers from their respective districts, our model needed to provide support from the district level down to the teacher level while developing teachers' ability to teach with GIS and learn spatial inquiry. The following model was developed to deal with the support issues from the district level down to our GIS Summer Institutes that were used to develop teacher capacity. Thus, teachers are able to teach with GIS in the classroom.

The Model

Keeping in mind the support issues from technology and curriculum departments within our school district, we wanted to develop a framework of support structures as a united front from these departments before any training was to happen for teachers. Our first attempts at promoting GIS to Instructional and Technology Coordinators were brushed off due to the lack of awareness of how GIS can support instruction. In order to develop this awareness of GIS, we demonstrated where and when GIS can support the TEKS. Geography was targeted specifically due to the wording in TEKS 21, 22, and 23 (Social Studies Skills) of the World Geography Standards. The following are the World Geography TEKS from the Texas Education Agency with emphasis added to support GIS in the classroom.

(21) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology. The student is expected to:

(A) Use historical, geographic, and statistical information from a variety of sources such as databases, field interviews, media services, and questionnaires to answer geographic questions and infer geographic relationships;

(B) analyze and evaluate the validity and utility of multiple sources of geographic information such as primary and secondary sources, aerial photographs, and maps;

(C) construct and interpret maps to answer geographic questions, infer geographic relationships, and analyze geographic change;

(D) apply basic statistical concepts and analytical methods such as computer-based spreadsheets and statistical software to analyze geographic data; and

(E) use a series of maps, including a computer-based geographic information system, to obtain and analyze data needed to solve geographic and locational problems.

(22) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:

(A) design and draw appropriate maps and other graphics such as sketch maps, diagrams, tables, and graphs to present geographic information including geographic features, geographic distributions, and geographic relationships;

(B) apply appropriate vocabulary, geographic models, generalizations, theories, and skills to present geographic information;

(23) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings. The student is expected to:

(A) plan, organize, and complete a group research project that involves asking geographic questions; acquiring, organizing, and analyzing geographic information; answering geographic questions; and communicating results;

(B) use case studies and geographic information systems to identify contemporary geographic problems and issues and to apply geographic knowledge and skills to answer real-world questions;

(C) use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and

(D) use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.

By demonstrating an instructionally sound lesson that supports the Geography TEKS, the awareness and view of GIS by Instructional and Technology Coordinators changed once they saw how to use the “GIS” TEKS (Social Studies Skills) to teach the Knowledge and Skills TEKS (Content) for World Geography. To also bolster GIS as an instructional tool, the lesson using GIS demonstrated integration of the Texas’ Technology Application

Standards for Students (K-12) for technology use in the classroom. The GIS lesson provides the integration of technology standards such as basic computer operations, peripherals, spreadsheets, databases, internet research and data collection, collaboration, desktop publishing, and student portfolios into the content area.

At the same time, we also recognized that our own training in GIS was not enough to support teachers in the classroom from an instructional technology standpoint. Training experiences for us up to this point, like most teachers, came in a one or two day workshop such as GeoTECH or a Texas Alliance for Geographic Education (TAGE) Conference. While these are great opportunities for exposure to GIS and learning the potential it has to increase student's critical thinking skills, there was little time to really learn ArcView in order to be an instructional leader with this software. Through contacts and a friendship with Dr. Steve Brown at the University of Texas at San Antonio, Dr. Brown encouraged us to start the GIS Certificate Program at UTSA in the fall of 2003.

Although not necessary for implementation in our district, it did provide a structured environment to learn ArcView 3.x. The focus of the beginning ArcView 3.x class was learning the mechanics of the software through *Getting to Know ArcView 3.x* (ESRI) and its application to "real-world" problems. The focus on these "real-world" problems provides a unique look at how the rest of the world outside of education is using GIS. It is common to have conversations with teachers that automatically want to conduct "real-world" lessons upon seeing GIS in action. The realities of the classroom show a majority of teachers are not ready for Project-Based GIS use nor do they feel that they have time to implement these types of lessons. Dr. Joseph Kerski and others have documented the pitfalls and hurdles that teachers face in using GIS in this manner (i.e. lack of GIS skills, data, etc.)(Kerski 2003).

With Dr. Brown's guidance and experiences in using GIS in the K-12 classroom and our own personal knowledge gained from this class, it has been easier to help teachers through the hurdles and keep them on an instructional focus for teaching their TEKS **with** GIS. For those teachers who want to implement a Project-Based GIS lesson and go beyond using GIS as an instructional tool, they will now be able to get needed support.

By the summer of 2004, we were ready to start developing teacher capacity to use GIS in the classroom. ESRI's white paper, *GIS in K-12 Education* (1998), discusses some of the challenges and hurdles teachers face in implementing GIS. Being aware of these, we wanted to specifically address the following issues in our training (1998):

- Lack of time to "learn" GIS
- Lack of usable data about the desired focus topic
- Insufficient basic computer expertise on the part of teachers
- Insufficient GIS skills on the part of teachers
- Lack of a specific, relevant curriculum engaging GIS
- Pedagogical style not conducive to using GIS, especially as an exploratory tool
- Lack of support with technology and software usage

GIS Summer Institute I 2004

In the summer of 2004, 25 - 6th grade World Cultures and 9th grade World geography teachers attended the first GIS Summer Institute at the North East Educational Center. The focus of this workshop was introducing GIS lessons that support the Geography TEKS. This was paramount for teachers to see where GIS can support the content standards. This was first and foremost our main priority. Besides GIS having a "cool", "gee-whiz" factor that most teachers see immediately, the focus on the using GIS to teach their TEKS brings legitimacy in using the software as an instructional tool despite the issues teachers face in implementing it with their curriculum. The second priority that we focused on was to develop teaching strategies for implementation. By developing these teaching strategies in the

workshop, we hoped that this would improve integration across the Geography curriculum for the following school year.

In order to address these main priorities and at the same time deal with the issues of implementation (ESRI 1998), we developed a “ramped” approach to our four-day training. By providing a “ramped” format, we could customize the workshop to individual teacher’s technology ability while at the same providing lessons with data to support the lesson and TEKS. The following agenda was used for GIS Summer Institute I

Day 1: Web-Based GIS Lessons

Day 2: Introduction to ArcVoyager and Lessons

Day 3: Using Mapping Our World: GIS Lessons for Educators

Day 4: Using Mapping Our World: GIS Lessons for Educators

The Results of GIS Summer Institute I

From evaluations, follow-up emails and discussions with the participants, they felt that the four days of training in the various forms of GIS were beneficial and were of some use in their classroom, but overall implementation of GIS in the classrooms remained at a low level.

Three of the teachers had used several of the web-based GIS lessons. They indicated that these lessons were easy enough for their students and made using GIS easier to make connections with their curriculum. When asked if they would do a module from *Mapping Our World*, the teachers tended to be hesitant due to their lack of computer and GIS skills and doubted if students would be ready for such as a lesson as well.

One teacher at a high school level did four modules from *Mapping Our World*. Although he requested help and support from us during the computer lab portion, the use of GIS through *Mapping Our World* was by use of the student activity only. The teacher had the students turn in the student activity worksheets and some connections to the curriculum were made.

While working with this teacher, we queried the students while they worked on the student activities of the modules. Feedback ranged from “its okay” to “much better than coloring paper maps”. One student liked the fact that she could manipulate the data through the map and could use the tools to identify countries and other map features she didn’t know.

There was only one teacher from this workshop who had his students go beyond the student activity and do an assessment piece found at the end of the modules in *Mapping Our World*. Although the teacher was hesitant, he requested help to plan implementation of GIS into his lesson on China. We chose Module 1: The Basics from *Mapping Our World*. Since Part 1 focuses on the basics of ArcView, we demonstrated a brief introduction of ArcView and how to use the instructions for the student activity for Part 1. The layout, instructions, and teaching format of *Mapping Our World* made it easy for this teacher to use GIS. Despite a few computer glitches due to Windows 98[®], ZenWorks[®] and Deepfreeze[®], the teacher was very surprised at how easy it was for him to focus on helping students accomplish the end product and not focus on the “GIS” part. The only issue with ArcView that most students had trouble with was the understanding of an active theme and a visible theme.

For Part 2 of Module 1 of *Mapping Our World*, the students answered the question from the Geographic Inquiry Model (Mapping Our World 2002):

Do the number of phone lines in a country increase proportionately with the number of people in the country?

The assessment piece directed the students at the end of Part 2 to select a country. In order to tie this module into the scope and sequence, we had the students select China. Since China was next in the scope and sequence, we wanted the students to begin to draw inferences and conclusions about China before the teacher started the actual unit of instruction. The student product to be turned in was a map layout with two views showing the

number of phone lines per person and the number of cell phones per person. From the layout, the students had to answer the following questions:

Write a proposal to your boss at your telecommunications company to describe the following:

Use the information in the table to describe the current phone line and cell phone situation in China? How many phones per person? Cell phones per person?

Where would you put your cell phone towers and your telephone poles?

Where would you predict would be the greatest growth for both telecommunications and the economy?

List three concerns you have about increasing the number of phones in China?

Give specific cities and/or locations in China.

The goal of this exercise was for the students to begin to understand the geographic, population and economic centers of China as well as to make connections to the changes that China is experiencing economically, environmentally, and culturally.

The overall experience for this teacher was a positive one. The teacher has indicated that he will go on next year to integrate more GIS through the use of Mapping Our World because of the structure and layout to support the use of GIS in his class.

Conclusions Drawn from GIS Summer Institute I

Upon analyzing the implementation rates from this first group of teachers, it became apparent that while GIS holds promise for many teachers to get students to think critically, it is a hard transition to make for many of them. Again, time was the biggest factor for many. Most lessons were not applicable right away for teachers to use. Once school gets started, if GIS is not a priority, then most teachers don't take the time to integrate it even if they want to do so. Also, given the typical teacher's computer skills and GIS experience, most teachers want GIS lessons to be simple fill in the answers worksheets.

Analysis of the workshop showed that we need to re-evaluate how to help teachers integrate GIS more effectively.

GIS Summer Institute II 2005

In preparation for this Institute, the focus was shifted towards using *Mapping Our World* and how this book could support the TEKS and also address teacher's computer and GIS abilities. The issue of time would be addressed in the workshop schedule. It has become apparent that strong support structures needed to be implemented first. The support structures that we wanted to build with this Institute included the following:

- Provide a Scope and Sequence that shows where GIS and *Mapping Our World* can support the units of instruction for Geography
- Provide time for teachers to work together and analyze how they can teach the TEKS with GIS
- Reinforce the idea that the teachers are the content experts and focus on using the *Mapping Our World* lesson for utilizing GIS in the classroom
- Have teachers work on the Student Assessment pieces from modules in *Mapping Our World* to understand what a student generated piece of work should look like after using *Mapping Our World* and GIS

GIS Summer Institute II 2005 ran from May 31st-June 3rd. We had 20 teachers sign up for the four day workshop with 13- 9th grade World Geography, 4- Middle and High School Science teachers, 2 – Special Education co-teach teachers and 1-Other attend. Although the agenda (see Appendix) for the four days was long, we were able to bring Anita and Roger Palmer down for leading two of the four days. The schedule was packed to maximize the use of Anita and Roger's expertise. We wanted the teachers to see how *Mapping Our World* could be integrated into the classroom and gain from Anita and Roger's experience in using this in the classroom.

Overall, initial feedback and evaluations have been very positive from the attending teachers. Previous teachers that attended last year's GIS Summer Institute I were more motivated to integrate GIS into their

teaching. We learned that while we wanted the teachers to develop a student product for an assigned module, the teachers quickly worked on those to turn in so that they can explore other modules in *Mapping Our World* and other lessons provided. This was not what we expected, but the teacher's excitement in learning GIS and to see what other lessons were like was the driving force.

In this workshop, one of the most important resources provided to the teachers was time to work on the *Mapping Our World* modules and how to develop teaching strategies to implement the modules. In the evaluations, several of the teachers indicated that the time for implementation was very valuable. In addition to the resources of time, the time for the teachers to get together and really analyze how they teach was important. Although the completed student products weren't really what we expected, we did find that the dialogues that occurred while working on them were much better than were shown on the student product. It forced them to make connections with the content and to discuss those connections through GIS.

In conclusion, the teachers indicated that this was one of the best workshops they have attended. For most of the teachers learning GIS for the first time, they indicated a need for help in the classroom not only for the GIS but for the teaching portion as well.

Conclusion

In the past two years we have learned a lot about the use and integration of GIS into the Geography curriculum. While the debates go on about the effectiveness of GIS in the classroom, current technology use by the typical geography teacher is nothing more than doing Internet research, making a PowerPoint presentation or a Microsoft Publisher pamphlet for the current topic of study. Since Geography standards, especially in Texas, call for the use of GIS, teachers are just beginning to take hold of this technology and are beginning to go through a widespread growth process in

learning about GIS and how to implement it into the classroom effectively. Though researchers are questioning the use and impact GIS has on the learning process (Bednarz 2004), the same case could be made about the use of probes and probeware technology in the science classroom. Science has gone through a revolution in how science labs are being taught. Five years ago in our district, most science teachers would not have conducted a lab with probes. Now probes and probeware are being used to challenge students to think critically about science concepts and take ownership of their learning in a different and sometimes better way than with traditional methods that most science teachers have used in laboratory investigations. What has changed for us in our district is the expectation to use the technology (probes), a scope and sequence to show where and when to conduct labs and use technology to support those labs, and support and training from instructional and technology specialists in the classroom. Teachers are more willing to change and to adopt technology to challenge students with high-order thinking skills and problems.

In order for GIS to be used throughout our district, we need to implement these expectations as science has done. Provide the expectation that appropriate use of GIS is to be used to support instruction. Provide a scope and sequence showing where and when GIS is to be used (see Appendix). Provide support from instructional and technology specialists in the classroom. In order to address the additional issues that teachers face such as computer abilities, appropriate data and lessons, and teaching strategies, we should build upon *Mapping Our World* as a model for integrating GIS into the curriculum. Once these support structures are in place, this is the only way that most teachers will use GIS as an instructional tool within the classroom. As we continue to build a bigger teacher base using GIS and address the issues they face doing so, only then can we effectively analyze the impact of GIS upon the curriculum.

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Eric McGarrah, Social Studies Coordinator, North East Independent School district for partnering with Educational Technology to bring GIS to the schools in North East and providing the resources to purchase Mapping Our World for the GIS Summer Institutes.

Appendix

1. North East Technology Innovation Configuration
2. GIS Summer Institute II 2005 Agenda
3. World Geography Scope and Sequence
3. World Geography Rough Draft of Scope and Sequence using GIS

NEISD Technology Innovation Configuration

	Innovation (Expert)	Appropriation (Practitioner)	Adaptation (Apprentice)	Entry/Adoption (Novice)
Technology Application Standards & Curriculum Planning	Technology standards are well known and communicated to students. Teacher creates an environment where technology is used effortlessly as a teaching and learning tool. Instruction drives technology.	Technology standards are known and woven into instruction. Teacher begins implementing appropriate technology skills into the classroom curriculum.	Technology standards are taught in isolation, without a connection to classroom curriculum. Technology drives instruction.	Technology standards are unknown or vaguely understood. Teacher uses scope and sequence skills in isolation when known.
Teacher Role	Teacher is more of a guide/facilitator, less direct instruction. Balance of delivery of content and student exploration. Teacher uses technology seamlessly.	Direct instruction by teacher is still primary mode. Some transition toward teacher as a guide/facilitator is occurring.	Teacher-directed instruction. Most of the classroom time is spent on delivery of content by teacher. Teacher uses technology in isolation (rewards).	Technology is taught by someone other than the classroom teacher.
Student Role	Students working at different tasks. Projects are student-developed, designed, and created. Students regularly use technology as a tool throughout the day.	Student role is defined by teacher. Assignments may be independent or collaborative projects, little extension or construction of knowledge.	Student use of technology is limited to teacher-directed assignments that are uniform for all.	Student does not have access to classroom technology. Teacher uses it only as an organizational/presentation tool (i.e. "teacher computer").
Tools/Materials (Learning Context)	Students have the freedom to choose technology tools appropriate to the learning objective or task.	Teacher provides tools (possibly beyond their comfort level) that best meet learning objective. Access is less structured and more seamless.	Teacher uses basic productivity and resource tools. Students use productivity and resource tools as assigned by the teacher. Students and teacher both share access.	Teacher uses technology for email, basic word processing, and "bannermania" type tools. Computer is on teacher's desk, facing teacher. Students use technology for games, CDs, Accelerated Reader, etc.
Communication/Networking	The teacher uses network resources transparently as an integral part of everyday teaching and decision-making. He/she uses multiple communication technologies at an advanced level.	Teacher uses email to communicate across the network and navigates network environment comfortably. He/she uses a variety of network communication and resource functions to address instructional decisions.	Teacher uses technology for correspondence (i.e. letters, progress reports, etc.). He/she makes limited use of email and other communication technologies.	Teacher use of technology is limited to district mandates (i.e. mainframe, GradeSpeed)

NEISD Educational Technology DRAFT (11/19/02)

	Innovation (Expert)	Appropriation (Practitioner)	Adaptation (Apprentice)	Entry/Adoption (Novice)
Tasks (Process Products)	Technology is being used to do things that could not have been done without it (on-spot data analysis, data collection tools, contacting distant experts).	Technology is used for curriculum activities that include teacher-designed planning sheets, storyboards, etc. Students use teacher-designed templates.	Student uses technology to replicate assignments previously completed in the regular classroom (make a graph using paper and pencil and then recreate same graph on the computer).	Student uses technology for drill and practice. No process products are created using technology by teacher or student.
Tasks (Final Products)	Class projects reflect higher order thinking, collaboration, and problem solving in a real-world context. They are complex, multi-faceted, and student-designed. Curriculum is integrated.	Students have freedom within a certain application to create final products that meet specific criteria related to the software/hardware application (i.e. include 6 slides, clipart, etc).	Some class or student assignments such as slide shows are teacher-designed. Curriculum connection is single faceted and similar to non-technology final products.	Teacher products are worksheets, tests, delivery presentations, etc. Student products may be limited to typed final drafts.
Assessment	Teacher employs a variety of assessment methods. Rubrics are standard, including performance assessment and peer/self assessments.	Teacher employs a variety of assessment methods including tests, quizzes, and technology products. May begin to use performance assessment.	Teacher relies only on software-driven assessments (Accelerated Reader, STAR, Math Problem Solver).	Teacher views technology as an "add on" and does not include it in assessments.
Grouping (Interactions)	Students collaborate with other schools, contacting distant experts and sharing data over the Internet. Open-ended assignments tend to be authentic problems to solve.	Students work in collaborative groups within their campus. Student tasks may vary within outlined objectives.	Students work in collaborative groups within their own classroom. All students are assigned the same task.	Student use of technology is in isolation on a specific task.

Adapted from:

- Cyber Connection Project (ACOT Research)
<http://www.newbraunfels.txed.net/CyberConnection/ProPhaseIII/Rubrics/SnpshtRub.pdf>
- Classroom Best Practices Assessment Rubric
<http://www.tcet.unt.edu/START/clarify/bestprac/classrub.htm>

Summer Institute II 2005 Agenda

May 31st

- Introductions
- Materials, Handouts and other Goodies
- Purpose of GIS Summer Institute
- Hands on Intro to mapping exercises (transparency lessons)
- What is GISday?
- **Module 2 Global: The Earth Moves**
- Break
- **Module 2 Regional: The Ring of Fire**
- Discussion on ways you want to teach with GIS

Lunch

- **Module 3 Global: Running Hot and Cold**
- Break
- **Geography: Module 4 Global: March of Time**
- **Science: Module 3: Ecosystems, Climate, and Vegetation**
- Other Cool Ways to Use GIS
 - Internet-based GIS
 - Fun Find Info Treasure Hunt

Option: Introduction to GPS after lunch

June 1st

- Review of day 1, overview of day 2
- **Geography: Module 6 Global: The Wealth of Nations**
- **Science: Module 3 Advanced: Sibling Rivalry**
- Break (GPS finding saved spots)
- **Geography: Module 4 Regional: Growing Pains**
- **Science: Module 2 Advanced: Getting Data from the Internet**
 - Tsunami data
 - Tsunami project

Lunch

- **Downloading and using local data (Tiger Files for local block groups and roads)**
- **Geography: Module 4 Advanced: Generation Gaps**
- **Science: Module 7: Choose Regional: Water World or Advanced: In the Eye of the Storm**
- Break (GPS finding saved spots)
- **Wrap up and conclusion**

June 2nd

- Review previous day
- Fun Activities with ArcVoyager
- Discussion: Developing the Lessons to Match the Scope and Sequence
- **Module 1: The Basics**
- Development Time: Using the Assessment/Extensions to teach your lesson (Split into teams to work on Modules for Scope and Sequence)

Lunch

- Development Time: Using the Assessment/Extensions to teach your lesson (Split into teams to work on Modules for Scope and Sequence)
- **Wrap Up and Conclusion**

June 3rd

- Review previous day
- Fun Activities with ArcExplorer
- **ArcView Lesson: A House Divided: Palestine**
- Discussion: Developing the Lessons to Match the Scope and Sequence

Lunch

- Development Time: Using the Assessment/Extensions to teach your lesson (Split into teams to work on Modules for Scope and Sequence)
- Share Session – What you learned? What's next? Lesson implementation
- **Wrap Up and Conclusion**

**NORTHEAST INDEPENDENT SCHOOL DISTRICT
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY 4120
PRE AP WORLD GEOGRAPHY 4121**

SCOPE AND SEQUENCE



WORLD GEOGRAPHY SCOPE AND SEQUENCE

TEXAS EDUCATION AGENCY COURSE DESCRIPTION

In World Geography Studies, students examine people, places, and environments at local, regional, national, and international scales from the spatial and ecological perspectives of geography. Students describe the influence of geography on events of the past and present. A significant portion of the course centers around the physical processes that shape patterns in the physical environment; the characteristics of major land forms, climates, and ecosystems and their interrelationships; the political, economic, and social processes that shape cultural patterns of regions; types and patterns of settlement; the distribution and movement of world population; relationships among people, places, and environments; and the concept of region. Students analyze how location affects economic activities in different economic systems throughout the world. Students identify the processes that influence political divisions of the planet and analyze how different points of view affect the development of public policies. Students compare how components of culture shape the characteristics of regions and analyze the impact of technology and human modifications on the physical environment. Students use problem-solving and decision-making skills to ask and answer geographic questions.

To support the teaching of the essential knowledge and skills, the use of a variety of rich primary and secondary source material such as contemporary and historic maps of various types, satellite-produced images, photographs, graphs, sketches, and diagrams is encouraged.

The eight strands of the essential knowledge and skills for social studies are intended to be integrated for instructional purposes. Skills listed in the geography and social studies skills strands in subsection (c) of this section should be incorporated into the teaching of all essential knowledge and skills for social studies. A greater depth of understanding of complex content material can be attained when integrated social studies content from the various disciplines and critical-thinking skills are taught together.

Throughout social studies in Kindergarten-Grade 12, students build a foundation in history; geography; economics; government; citizenship; culture; science, technology, and society; and social studies skills. The content, as appropriate for the grade level or course, enables students to understand the importance of patriotism, function in a free enterprise society, and appreciate the basic democratic values of our state and nation as referenced in the Texas Education Code.

**NORTHEAST ISD
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY SCOPE AND SEQUENCE**

COURSE TIMELINE

QTR	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9
1st	Introduce study of geography: (what, why, and how) 5 Themes	Review geography skills: Tools of the Geographer	Map skills	Earth/Sun Relationships	Weather and Climate	Landforms, Water, and Natural Resources			
2nd							Human Geography and Human Systems		
3rd	Regional studies: United States and Canada			Regional studies: Latin America			Regional Studies: Europe		
	Europe (continued)								
4th	Regional studies: Africa (continued)	Regional studies: Russia			Regional studies: SW Asia			Regional studies: Africa	
	Regional studies: Asia						Regional studies: Pacific Region		

**NORTHEAST ISD
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY SCOPE AND SEQUENCE**

VOCABULARY: 1st QUARTER

STUDYING GEOGRAPHY	EARTH IN SPACE	WEATHER AND CLIMATE
<p>Absolute location Atlas Cardinal directions Cartographer Continents Compass rose Elevation Equator Geography Great circle route Grid system Human-Env. Interaction Intermediate directions Latitude Legend Longitude Map Map projection Map scale Movement Place Population pyramid Prime Meridian Region Relative location</p>	<p>Atmosphere Axis Biosphere Environment Equinox Hydrosphere Lithosphere Middle Latitudes Planet Polar regions Revolution Rotation Satellite Solar energy Solar system Solstice Tropics</p>	<p>Arid Boreal forest Chaparral Climate Coniferous forest Cyclone Deciduous forest Doldrums Ecosystem Front Global warming Greenhouse effect Humidity Leeward Mixed forest Monsoon Natural vegetation Orographic Ozone layer Permafrost Prairie Precipitation Prevailing winds Rain forest Rain shadow</p> <p>Savanna Smog Steppe Timberline Tundra Weather Windward</p>
<p>LANDFORMS AND NATURAL RESOURCES</p> <p>Acid rain Alluvial soil</p>	<p>CULTURE</p> <p>Command economy Commercial agriculture Culture</p>	<p>HUMAN SYSTEMS</p> <p>Animist Capitalism Command economy</p>

Aquifer	Rift valley	Cultural trait	Communism
Continental drift	Sediment	Cultural icon	Culture region
Continental shelf	Watershed [drainage basin]	Demographics	Emigration
Contour plowing		Developed nation	Free enterprise
Core	Water table	Developing country	Fundamentalism
Deforestation	Weathering	Dialect	GDP
Delta		Diffusion	GNP
Desalinization		Ethnicity	Growth rate
Erosion		Globalization	Immigration
Estuary		Infrastructure	Lingua franca
Fault		Innovation	Literacy rate
Fold		Market Economy	Market economy
Fossil fuels		Migration	Monotheism
Fossil water		Nationalism	Polytheism
Glaciers		Population Density	Push-Pull factors
Groundwater		Race	Refugee
Hydroelectric		Standard of living	Traditionalism
Hydrologic cycle		Subsistence agriculture	
Geothermal		Urbanization	
Irrigation			
Magma			
Mantle			
Mineral			
Nonrenewable resource			

**NORTHEAST ISD
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY SCOPE AND SEQUENCE**

TAKS/TEKS/SE's: 1st QUARTER

PHYSICAL GEOGRAPHY: WEEK 1

The student will:

1. List and explain the Five Themes of Geography. [Location, relative location, absolute location, Place, Human-Environment Interaction, Movement, and Region] [World in Spatial terms, Places and Regions, Physical Systems, Human Systems, Environment and Society, Uses of Geography]
2. Identify the differences among formal, functional, and perceptual regions. [TEKS WG 9B]

WEEK 2 - 3

3. Describe the physical environment of regions and the physical processes that affect these regions such as weather, tectonic forces, wave action, freezing and thawing, gravity, and soil-building processes. [atmosphere, lithosphere, biosphere, and hydrosphere] [TEKS WG 3B]

WEEK 4

4. Attribute occurrences of weather phenomena and climate to annual changes in Earth-Sun relationships. [revolution, axis, axial tilt, rotation, gravitational pull, equinox, solstice, orbit, seasons] [TEKS WG 3A]

WEEK 5

5. Explain the distribution of plants and animals in different regions of the world using the relationship among climate, vegetation, soil, and geology. [ecosystems] [TEKS WG 4C]
6. Explain the distribution of different types of climate in terms of patterns of temperature, wind, and precipitation and the factors that influence climate regions such as elevation, latitude, location near warm and cold ocean currents, position on a continent, and mountain barriers. [orographic precipitation] [TEKS WG 4A]
7. Identify physical factors that constitute a region [desert, tundra, forests, grasslands] such as soils, climate, vegetation, and river systems. [TEKS WG 9A]

WEEK 6

8. Describe the physical environment of regions and the physical processes that affect these regions such as weather, tectonic forces, wave action, freezing and thawing, gravity, and soil-building processes. [atmosphere, lithosphere, biosphere, and hydrosphere]
9. Relate the physical processes [plate tectonics, weathering, erosion] to the development of distinctive landforms. [TEKS WG 4B]
10. Understand the economic importance of, and issues related to, the location and management of key natural resources. [TEKS WG 12A, WG 12B, WG 12C]

11. Evaluate the significance of major technological innovation that occurred at different times in history, including fire, steam power, diesel machinery, and electricity that have been used to modify the physical environment. [TEKS WG 19A] [TAKS 2]

WEEK 7

12. Analyze political, economic, social, and demographic data to determine the level of development and standard of living in nations. [TEKS WG 5B] [TAKS 3]

13. Understand the growth, distribution, movement, and characteristics of world population. [TEKS WG 7A & WG 7B]

13. Identify human factors that constitute a region such as language, trade network and religion. [TEKS WG 9A]

14. Compare the ways people satisfy their basic needs through the production of goods and services such as subsistence agriculture versus market-oriented agriculture or cottage industries versus commercial industries. [TEKS WG 10C] [TAKS 3]

15. Describe the impact of general processes such as migration, war, trade, independent inventions, and diffusion of ideas and motivations on cultural change. [TEKS WG 18A] [TAKS 3]

16. Understand the ways in which cultures change and maintain continuity. [TEKS WG 18A, WG 18B, WG 18C] [TAKS 3]

17. Understand the types and patterns of settlement, the factors that affect where people settle, and processes of settlement development over time. [cities to grow such as location along transportation routes, availability of resources that have attracted settlers and economic activities, and continued access to other cities and resources] [TEKS WG 6B]

WEEK 8

18. Understand how geographic context [the geography of places in the past] and processes of spatial exchange [diffusion, cultural convergence, cultural divergence] influenced events in the past and helped to shape the present. [TEKS WG 1A, WG 1B] [TAKS 2]

19. Analyze political, economic, social, and demographic data to determine the level of development and standard of living in nations. [TEKS WG 5B] [TAKS 3]

20. Identify human factors that constitute a region such as language, trade network and religion. [TEKS WG 9A]

21. Compare the ways people satisfy their basic needs through the production of goods and services such as subsistence agriculture versus market-oriented agriculture or cottage industries versus commercial industries. [TEKS WG 10C] [TAKS 3]

22. Describe the impact of general processes such as migration, war, trade, independent inventions, and diffusion of ideas and motivations on cultural change. [TEKS WG 18A] [TAKS 3]
23. Understand the ways in which cultures change and maintain continuity. [TEKS WG 18A, WG 18B, WG 18C] [TAKS 3]
24. Understand the types and patterns of settlement, the factors that affect where people settle, and processes of settlement development over time. [cities to grow such as location along transportation routes, availability of resources that have attracted settlers and economic activities, and continued access to other cities and resources] [TEKS WG 6B]
25. Explain how citizenship practices, public policies, and decision-making may be influenced by cultural beliefs. [TEKS WG 15B]

WEEK 9

26. Understand how geographic context [the geography of places in the past] and processes of spatial exchange [diffusion, cultural convergence, cultural divergence] influenced events in the past and helped to shape the present. [TEKS WG 1A, WG 1B] [TAKS 2]
27. Analyze political, economic, social, and demographic data to determine the level of development and standard of living in nations. [TEKS WG 5B] [TAKS 3]
28. Identify human factors that constitute a region such as language, trade network and religion. [TEKS WG 9A]
29. Describe the characteristics of traditional, command, and market economies and explain how they operate in specific countries. [TEKS WG 10A]
30. Compare the ways people satisfy their basic needs through the production of goods and services such as subsistence agriculture versus market-oriented agriculture or cottage industries versus commercial industries. [TEKS WG 10C] [TAKS 3]
31. Describe the impact of general processes such as migration, war, trade, independent inventions, and diffusion of ideas and motivations on cultural change. [TEKS WG 18A] [TAKS 3]
32. Understand the ways in which cultures change and maintain continuity. [TEKS WG 18A, WG 18B, WG 18C] [TAKS 3]

**NORTHEAST ISD
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY SCOPE AND SEQUENCE**

VOCABULARY: 2ND QUARTER

UNITED STATES AND CANADA		LATIN AMERICA		EUROPE	
Acid rain	Plantation	Bauxite	One crop economy	Acid rain	Neutrality
Alluvial soils	Province	Cacao	Pampas	Alliance	Permafrost
Arable	Regionalism	Campesinos	Primate city	Autonomy	Polder
Barrier island	Republic	Caricom	Rain forest	Balance of Power	Population density
Basin	Ring of Fire	Cash crop	Service industry	Cantons	Primate city
“belt”	Rural	Colonias	Slash-and-burn	Coastline	Refugee
Bilingual	Separatism	Commonwealth	Terrorism	Chunnel	Sequent occupance
Blizzard	Suburb	Creole	Urbanization	Civilization	Socialism
Colony	Superpower	Dictator		Complimentary region	Tariff
Continental divide	Textile	Diversity		Confederation	
Democracy	Timberline	Ecotourism		Constitutional monarchy	
Fall line	Tornado	Ecosystem		Dialects	
Free enterprise	Urban	El Nino		Dikes	
Gentrification		Ejido		Enclaves	
Hinterland		Favela		Euro	
Hot spot		Hacienda		Exclave	
Hurricane		Indigenous		European Union	
Immigrant		Isthmus		Fjord	
Industrialization		Landlocked		Genocide	
Interdependent		Literacy Rate		Geyers	
Megalopolis		Llanos		Global warming	
Metropolitan		Malnutrition		Holocaust	
Monarchy		Maquiladoras		Loess	
Multicultural		Mercosur		Monarchy	
North American Free Trade Agreement		Mestizos		Multicultural/lingual	
Parliament		Minifundia		Nationalized	
Piedmont		Mulatoes		Navigable	

**NORTHEAST ISD
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY SCOPE AND SEQUENCE**

TAKS/TEKS/SE's: 2ND QUARTER

HISTORY

The student will:

1. Analyze the effects of physical and human geographic patterns and processes on events in the past and describe their effects on present conditions including significant physical features and environmental conditions that influenced migration patterns in the past and shaped the distribution of culture groups today. [TEKS WG 1A] [TAKS 2]
2. Trace the spatial diffusion of a phenomenon and describe its effects on regions of contact such as the spread of bubonic plague, the diffusion and exchange of foods between the New and Old Worlds, or the diffusion of American slang. [TEKS WG 1B] [TAKS 2]
3. Describe the human and physical characteristics of the same place at different periods of history; and [TEKS WG 2A]
4. Assess how people's changing perceptions of geographic features have led to changes in human societies. [TEKS WG 2B]

GEOGRAPHY

5. Relate the physical processes to the development of distinctive landforms. [TEKS WG 4B]
6. Analyze how the character of a place is related to its political, economic, social, and cultural characteristics. [TEKS WG 5A]
7. Locate settlements and observe patterns in the size and distribution of cities using maps, graphs, and other information. [TEKS WG 6A] [TAKS 2]
8. Explain the processes that have caused cities to grow such as location along transportation routes, availability of resources that have attracted settlers and economic activities, and continued access to other cities and resources. [TEKS WG 6B] [TAKS 2]
9. Develop and defend hypotheses on likely population patterns for the future. [TEKS WG 7]
10. Explain the political, economic, social, and environmental factors that contribute to human migration such as how national and international migrations are shaped by push-and-pull factors and how physical geography affects the routes, flows, and destinations of migration. [TEKS WG 7B]

11. Describe trends in past world population growth and distribution. [TEKS WG 7C]
12. Explain the interrelationships among physical and human processes that shape the geographic characteristics of places such as connections among economic development, urbanization, population growth, and environmental change. [TEKS WG 8A]
13. Compare ways that humans depend on, adapt to, and modify the physical environment using local, state, national, and international human activities in a variety of cultural and technological contexts. [TEKS WG 8B] [TAKS 5]
14. Describe the impact of and analyze the reaction of the environment to abnormal and/or hazardous environmental conditions at different scales such as El Nino, floods, droughts, and hurricanes. [TEKS WG 8C]
15. Analyze statistical and other data to infer the effects of physical and human processes on patterns of settlement, population distribution, economic and political conditions, and resource distribution. [TEKS WG 8D]
16. Construct and interpret maps to answer geographic questions, infer geographic relationships and analyze geographic change. [TEKS WG 21C] [TAKS 2]

ECONOMICS

17. Analyze political, economic, social, and demographic data to determine the level of development and standard of living in nations. [TEKS WG 5B] [TAKS 3]
18. Explain how traditional, command, and market economies operate in specific countries. [TEKS WG 10]
19. Compare the ways people satisfy their basic needs through the production of goods and services such as subsistence agriculture versus market-oriented agriculture or cottage industries versus commercial industries. [TEKS WG 10C] [TAKS 3]
20. Identify factors affecting the location of different types of economic activities. [TEKS WG 11]
21. Describe how changes in technology, transportation, and communication affect the location and patterns of economics activities. [TEKS WG 11C]
22. Compare global trade patterns at different periods of time and develop hypotheses to explain changes that have occurred in world trade and the implications of these changes. [TEKS WG 12A]
23. Analyze how the creation and distribution of resources affects the location and patterns of movement of products, capital, and people. [TEKS WG 12B]

24. Evaluate the geographic and economic impact of policies related to the use of resources such as regulations for water use or policies related to the development of scarce natural resources. [TEKS WG 12C]

GOVERNMENT

25. Explain how forces of conflict and cooperation influence the allocation of control of Earth's surface such as the formation of congressional voting districts or free trade zones. [TEKS WG 14B]

26. Explain the geographic factors that influence a nation's power to control territory and that shape the foreign policies and international political relations of selected nations such as Iraq, Israel, Japan, and the United Kingdom. [TEKS WG 14C]

CULTURE

27. Describe distinctive cultural patterns and landscapes associated with different places in Texas, the United States, and other regions of the world, and how these patterns influenced the processes of innovation and diffusion. [TEKS WG 16A]

28. Give examples of ways various groups of people view cultures, places, and regions differently. [TEKS WG 16B]

29. Compare life in a variety of cities and nations in the world to evaluate the relationships involved in political, economic, social, and environmental changes. [TEKS WG 16C]

30. Describe and compare patterns of culture such as language, religion, land use, systems of education, and customs that make specific regions of the world distinctive. [TEKS WG 17A]

31. Compare economic opportunities in different cultures for women and religious minorities in selected regions of the world. [TEKS WG 17B]

32. Describe the impact of general processes such as migration, war, trade, independent inventions, and diffusion of ideas and motivations cause cultural change. [TEKS WG 18A] [TAKS 3]

33. Analyze cultural changes in specific regions. [TEKS WG 18B]

34. Analyze examples of cultures that maintain traditional ways. [TEKS WG 18C]

SCIENCE, TECHNOLOGY AND SOCIETY

35. Evaluate the significance of major technological innovations, including fire, steam power, diesel machinery, and electricity that have been used to modify the physical environment. [TEKS WG 19A] [TAKS 2]
36. Analyze ways technological innovations have allowed humans to adapt to places shaped by physical processes such as floods, earthquakes, and hurricanes. [TEKS WG 19B]
37. Analyze the role of technology in agriculture and other primary economic activities and identify the environmental consequences of the changes that have taken place. [TEKS WG 20B]

**NORTHEAST ISD
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY SCOPE AND SEQUENCE**

VOCABULARY: 3RD QUARTER

RUSSIA	SW ASIA	AFRICA
Athiest/ism	Ancestry	Afrikaners
Black Market	Ayatollahs	Apartheid
Command economy	Bedouins	Civil War
Communism	Bias	Corruption
Cyrillic Alphabet	Christianity	Custom
Ecology	Civilization	Deforestation
Emergent democracy	Delta	Desertification
Golden Age	Desalination	Drought
Irrigation	Desert	Dual economy
Market economy	Diversity	Ecotourism
Permafrost	Judaism	Emergent democracy
Pogrom	Islam	Epidemic
Socialism	Oasis	Extended family
Steppe	OPEC	Famine
Taiga	Petrochemicals	Folklore
Tundra	Secular	Genocide
	Seismic	Gross domestic product
	Souks	Industrialization
	Terrorism	Lingua franca
	Theocracy	Landlocked
	Urbnization	Poaching
		Sahel
		Sanctions
		Subsistence farming
		Ritual
		Tradition
		Tribe
		Veld

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**NORTHEAST ISD
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY SCOPE AND SEQUENCE**

SOCIAL STUDIES SKILLS VOCABULARY

Acquire

Pattern

SOUTH ASIA	EAST AND SOUTHEAST ASIA	THE PACIFIC WORLD
Boycott Caste system Dalits/untouchables Dharma Entrepreneur Hinduism Human rights Jainism Karma Mahatma Monsoon Monument Nirvana Pantheon Partition of India Protectorate Puppet government Raja Reincarnation Sanskrit Sepoys Sikhism Subcontinent Sultans	Annex Aquaculture Archipelago Armistice ASEAN Buddhism Cash crop Cclan Communes Communism Cottage industry Cyclone/storm surge Deforestation Demilitarized Zone (DMZ) Diet Dissident Domino theory Dynasty Free-enterprise economy Export economy Haiku Homogenous Indigenous Intensive agriculture Interdependent Lahars Martial law Megalopolis/urban agglomeration Paddy Puppet government Samurai Shogun Subsidies Tsunami Sultans	Aborigines Artesian wells Atoll Commonwealth Exclusive Economic Zone (EEZ) Maori Marsupials Matrilineal Oceania Outback Penal colony

Vocabulary Terms Used:

Analyze
Bias
Bibliography
Case study
Change over time
Chart
Communicate
Compare
Contrast
Construct
Databases
Decision-making
Design
Electronic resources
Evaluate
Evaluate effectiveness
Five Themes
Geographic Information Systems
Hypothesis
Generalization
Graph
Identify
Implement solution
Infer
Interpret
Main Idea
Map
Organizing
Perception
Political cartoon
Predict consequences
Predict outcomes
Primary source
Problem solving
Relationships
Research outlines
Secondary source
Sequence
Spatial distribution
Statistical concepts
Summarizing
Timeline
Trend

**NORTHEAST ISD
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY SCOPE AND SEQUENCE**

TAKS/TEKS/SE's: All Quarters

SOCIAL STUDIES SKILLS:

The student will:

1. Use historical, geographic, and statistical information from a variety of sources such as databases, field interviews, media services, and questionnaires to sequence, categorize, identify cause and effect relationships, compare, contrast, find main idea, summarize, make generalization [predict] draw inferences and conclusions to answer geographic questions and infer geographic relationships. [TEKS WG 21][TAKS 5]
2. Analyze and evaluate the validity and utility of multiple sources of geographic information such as primary and secondary sources, aerial photographs, and maps. [TEKS WG 21B]
3. [Construct] and interpret visuals including historical [and contemporary] maps, charts, and timelines to answer geographic questions, infer geographic relationships, and analyze geographic change. [TEKS WG 21C, WH 11A, WH 11B, WH 12A][TAKS 2 and 5]
4. Apply basic statistical concepts and analytical methods such as computer-based spreadsheets and statistical software to analyze geographic data. [TEKS WG 21D]
5. Use a series of maps, including a computer-based geographic information system, to obtain and analyze data needed to solve geographic and location problems. [TEKS WG 21E]
6. Design and draw appropriate maps and other graphics such as sketch maps, diagrams, tables, and graphs to present geographic information including geographic features, geographic distributions, and geographic relationships. [TEKS WG 11A, WG 22A]
7. Maps appropriate vocabulary, geographic models, generalizations, theories, and skills to present geographic information. [TEKS WG 22B]
8. Apply appropriate vocabulary, geographic models, generalizations, theories, and skills to present geographic terminology correctly. [TEKS WG 22C]
9. Use geographic terminology correctly. [TEKS WG 22C]
10. Use standard grammar, spelling, sentence structure, and punctuation. [TEKS WG 22D]

11. Plan, organize, and complete a group research project that involves asking geographic questions; acquiring, organizing, and analyzing geographic information; answering geographic questions; and communicating results. [TEKS WG 23A, WH26C, WH 26D]
12. Use case studies and geographic information systems to identify contemporary geographic problems and issues and to apply geographic knowledge and skills to answer real-world questions. [TEKS WG 23B]
13. Use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution. [TEKS WG 23C, WH25]
14. Use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision. [TEKS WG 23D, WH 27]
15. Construct and analyze population pyramids and use other data, graphics, and maps to describe the population characteristics of different societies and to predict future growth trends. [population density, level of development] [TEKS WG 7A]
16. Analyze current events to infer the physical and human processes that lead to the formation of boundaries and other political divisions. [TEKS WG 14A]
17. Compare different points of view on geographic issues. [TEKS WG 15C]
18. Compare maps of voting patterns or political boundaries to make inferences about the distribution of political power. [TEKS WG 13B]
19. Prepare maps that illustrate a variety of political entities such as city maps showing precincts, country maps showing states, or continental maps showing countries. [TEKS WG 13A]
20. [Pose] and answer questions about geographic distributions and patterns shown on maps, graphs, charts, [models, and database]. [TEKS 8.10B] [TAKS 2]
21. Identify points of view from the historical context surrounding an event and the frame of reference, which influenced the TEKS WG 8.30D] [TKAS 5]
22. Identify bias in written and visual material. [TEKS WG 8.30F] [TAKS 5]
23. Interpret [and create databases, research outlines, bibliographies, and] visuals including graphs, charts, timelines and maps. [TEKS WG 21C] [TAKS 5]

**NORTH EAST ISD
SECONDARY SOCIAL STUDIES
WORLD GEOGRAPHY SCOPE AND SEQUENCE**

Texas Essential Knowledge and Skills

TEKS	STUDENT EXPECTATIONS [SE's]
<p>[1] History. The student understands how geographic contexts [the geography of places in the past] and processes of spatial exchange [diffusion] influenced events in the past and helped to shape the present.</p>	<p>[A] analyze the effects of physical and human geographic patterns and processes on events in the past and describe their effects on present conditions including significant physical features and environmental conditions that influenced migration patterns in the past and shaped the distribution of culture groups today; and</p> <p>[B] trace the spatial diffusion of a phenomenon and describe its effects on regions of contact such as the spread of bubonic plague, the diffusion and exchange of foods between the New and Old Worlds, or the diffusion of American slang.</p>
<p>[2] History. The student understands how people, places, and environments have changed over time and the effects of these changes on history.</p>	<p>[A] describe the human and physical characteristics of the same place at different periods of history; and</p> <p>[B] assess how people's changing perceptions of geographic features have led to changes in human societies.</p>
<p>[3] Geography. Such as student understands how physical processes shape patterns in the physical environment [lithosphere, atmosphere, hydrosphere, and biosphere], including how Earth-Sun relationships affect physical processes and patterns on Earth's surface.</p>	<p>[A] attribute occurrences of weather phenomena and climate to annual changes in Earth-Sun; and</p> <p>[B] describe physical environment of regions and the physical processes that affect these regions such as weather, tectonic forces, wave action, tectonic forces, wave action, freezing and thawing, gravity, and soil-building processes.</p>
<p>[4] Geography. The student understands the patterns and characteristics of major landforms, climates, and ecosystems of Earth and the interrelated processes that produce them.</p>	<p>[A] explain the distribution of different types of climate in terms of patterns of temperature, wind, and precipitation and the factors that influenced climate regions such as elevation, latitude, location near warm and cold ocean currents, position on a</p>

	continent, and mountain barriers.
[5] Geography. The student understands how political, economic, and social processes shape cultural patterns and characteristics in various places and regions.	<p>[A] analyze how the character of a place is related to its political, economic, social, and cultural characteristics; and</p> <p>[B] analyze political, economic, social, and demographic data to determine the level of development and standard of living in nations.</p>
[6] Geography. The student understands the types and patterns of settlement, the factors that affect where people settle, and processes of settlement development over time.	<p>[A] locate settlements and observe patterns in the size and distribution of cities using maps, graphs, and other information; and</p> <p>[B] explain the processes that have caused cities to grow such as location along transportation routes, availability of resources that have attracted settlers and economic activities, and continued access to other cities and resources.</p>
[7] Geography. The student understands the growth, distribution, movement, and characteristics of world population.	<p>[A] construct and analyze population pyramids and use other data, graphics, and maps to describe the population characteristics of different societies and to predict future growth trends;</p> <p>[B] explain the political, economic, social, and environmental factors that contribute to human migration such as how national and international migrations are shaped by push-and-pull factors and how physical geography affects the routes, flows, and destinations of migration;</p> <p>[C] describe trends in past world population growth and distribution; and</p> <p>[D] develop and defend hypotheses on likely population patterns for the future.</p>
[8] Geography. The student understands how people, places, and environments are connected and interdependent.	[A] explain the interrelationships among physical and human processes that shape the geographic characteristics of places such as connections among economic development, urbanization, population growth, and environmental change;

	<p>[B] compare ways that humans depend on, adapt to, and modify the physical environment using local, state, national, and international human activities in a variety of cultural and technological contexts;</p> <p>[C] describe the impact of and analyze the reaction of the environment to abnormal and/or hazardous environmental conditions at different scales such as El Nino, floods, droughts, and hurricanes; and</p> <p>[D] analyze statistical and other data to infer the effects of physical and human processes on patterns of settlement, population distribution, economic and political conditions, and resource distribution.</p>
<p>[9] Geography. The student understands the concept of region as an area of Earth’s surface with unifying geographic characteristics.</p>	<p>[A] identify physical or human factors that constitute a region such as soils, climate, vegetation, language, trade network, river systems, and religion; and</p> <p>[B] identify the differences among formal, functional, and perceptual regions.</p>
<p>[10] Economics. The student understands the distribution and characteristics of economic systems throughout the world.</p>	<p>[A] describe the characteristics of traditional, command, and market economies;</p> <p>[B] explain how traditional, command, and market economies operate in specific countries; and</p> <p>[C] compare the ways people satisfy their basic needs through the production of goods and services such as subsistence agriculture versus market-oriented agriculture or cottage industries versus commercial industries.</p>
<p>[11] Economics. The student understands the reasons for the location of economic activities [primary, secondary, tertiary, and quaternary] in different economic systems.</p>	<p>[A] map the locations of different types of economic activities;</p> <p>[B] identify factors affecting the location of different types of economic activities; and</p>

	[C] describe how changes in technology, transportation, and communication affect the location and patterns of economics activities.
[12] Economics. The student understands the economic importance of, and issues related to, the location and management of key natural resources.	<p>[A] compare global trade patterns at different periods of time and develop hypotheses to explain changes that have occurred in world trade and the implications of these changes;</p> <p>[B] analyze how the creation and distribution of resources affects the location and patterns of movement of products, capital, and people; and</p> <p>[C] evaluate the geographic and economic impact of policies related to the use of resources such as regulations for water use or policies related to the development of scarce natural resources.</p>
[13] Government. The student understands the characteristics of a variety of political units.	<p>[A] prepare maps that illustrate a variety of political entities such as city maps showing precincts, country maps showing states, or continental maps showing countries; and</p> <p>[B] compare maps of voting patterns or political boundaries to make inferences about the distribution of political power.</p>
[14] Government. The student understands the geographic processes that influence the political divisions, relationships, and policies.	<p>[A] analyze current events to infer the physical and human processes that lead to the formation of boundaries and other political divisions;</p> <p>[B] explain how forces of conflict and cooperation influence the allocation of control of Earth's surface such as the formation of congressional voting districts or free trade zones; and</p> <p>[C] explain the geographic factors that influence a nation's power to control territory and that shape the foreign policies and international political relations of selected nations such as Iraq, Israel, Japan, and the United Kingdom.</p>
[15] Citizenship. The student understands how different points of view influence the development of public policies and decision-	[A] identify and give examples of different points of view that influence the development of public policies and decision-making

<p>making processes on local, state, national, and international levels.</p>	<p>processes on local, state, national, and international levels;</p> <p>[B] explain how citizenship practices, public policies, and decision making may be influenced by cultural beliefs;</p> <p>[C] compare different points of view on geographic issues.</p>
<p>[16] Culture. The student understands how the components of culture affect the way people live and shape the characteristics of regions.</p>	<p>[A] describe distinctive cultural patterns and landscapes associated with different places in Texas, the United States, and other regions of the world, and how these patterns influenced the processes of innovation and diffusion;</p> <p>[B] give examples of ways various groups of people view cultures, places, and regions differently; and</p> <p>[C] compare life in a variety of cities and nations in the world to evaluate the relationships involved in political, economic, social, and environmental changes.</p>
<p>[17] Culture. The student understands the distribution, patterns, and characteristics of different cultures.</p>	<p>[A] describe and compare patterns of culture such as language, religion, land use, systems of education, and customs that make specific regions of the world distinctive; and</p> <p>[B] compare economic opportunities in different cultures for women and religious minorities in selected regions of the world.</p>
<p>[18] Culture. The student understands the ways in which cultures change and maintain continuity.</p>	<p>[A] describe the impact of general processes such as migration, war, trade, independent inventions, and diffusion of ideas and motivations cause cultural change;</p> <p>[B] analyze cultural changes in specific regions;</p> <p>[C] analyze examples of cultures that maintain traditional ways; and</p> <p>[D] evaluate case studies of the spread of cultural traits to find examples of cultural convergence and divergence such as the</p>

	<p>spread of democratic ideas, U.S.-based fast-food franchises in Russia and Eastern Europe, or the English language as a major medium of international communication for scientists and business people.</p>
<p>[19] Science, technology, and society. The student understands the impact of technology and human modifications on the physical environment.</p>	<p>[A] evaluate the significance of major technological innovations, including fire, steam power, diesel machinery, and electricity that have been used to modify the physical environment; and</p> <p>[B] analyze ways technological innovations have allowed humans to adapt to places shaped by physical processes such as floods, earthquakes, and hurricanes.</p>
<p>[20] Science, technology, and society. The student understands how technology affects definitions of, access to, and use of resources.</p>	<p>[A] describe the impact of new technologies, new markets, and revised perceptions of resources; and</p> <p>[B] analyze the role of technology in agriculture and other primary economic activities and identify the environmental consequences of the changes that have taken place.</p>
<p>[21] Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology.</p>	<p>[A] use historical, geographic, and statistical information from a variety of sources such as databases, field interviews, media services, and questionnaires to answer geographic questions and infer geographic relationships;</p> <p>[B] analyze and evaluate the validity and utility of multiple sources of geographic information such as primary and secondary sources, aerial photographs, and maps;</p> <p>[C] construct and interpret maps to answer geographic questions, infer geographic relationships and analyze geographic change;</p> <p>[D] apply basic statistical concepts and analytical methods such as computer-based spreadsheets and statistical software to analyze geographic data; and</p> <p>[E] use a series of maps, including a computer-based geographic information system, to obtain and analyze data needed to solve</p>

<p>[22] Social studies skills. The student communicates in written, oral, and visual forms.</p>	<p>geographic and locational problems.</p> <p>[A] design and draw appropriate maps and other graphics such as sketch maps, diagrams, tables, and graphs to present geographic information including geographic features, geographic distributions, and geographic relationships;</p> <p>[B] apply appropriate vocabulary, geographic models, generalizations, theories, and skills to present geographic information;</p> <p>[C] use geographic terminology correctly; and</p> <p>[D] use standard grammar, spelling, sentence structure, and punctuation.</p>
<p>[23] Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings.</p>	<p>[A] plan, organize, and complete a group research project that involves asking geographic questions; acquiring, organizing, and analyzing geographic information; answering geographic questions; and communicating results;</p> <p>[B] use case studies and geographic information systems to identify contemporary geographic problems and issues and to apply geographic knowledge and skills to answer real-world questions;</p> <p>[C] use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution; and</p> <p>[D] use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.</p>

9th Grade World Geography Scope and Sequence Using GIS

First Quarter

Week 1:

Module 1: The Basics

Do This Lesson First Before Any Other

Part 1: Introduction to the Software

Opening Software

Navigating to the Data

Project View

Themes

Menus, Buttons and Tool Bars

Identification tool

Exploring the World through Maps and Attributes Table

Zoom tools

Help

Part 2: The Geographic Inquiry Model

Model: Ask, Acquire, Explore, Analyze, Act

Time: 1 Class Period

Week 2-3

Module 2: Physical Geography: Landform and Physical Processes

Global: The Earth Moves

Focus: Distribution of earthquake and volcanic activity and relationship to population centers, Plate Tectonics, Continental Drift

Time: 1-2 Class Periods

Strategies and Tie-ins to Curriculum:

Week 7

Module 4: Human Geography I: Population Patterns and Processes

Global: March of Time

Focus: Comparison and Contrast of the top 10 cities for 2000 years. Look at causes and possible reasons cities developed where they did.

Time: 1-2 Class Periods

Strategies and Tie-ins to Curriculum:

Week 9

Module 6: Human Geography III: Economic Geography

Global: The Wealth of Nations

Focus: Comparison of "Developing" vs. "Developed" Countries

Time: 1-2 Class Periods

Strategies and Tie-ins to Curriculum:

2nd Quarter

Module 6: Human Geography III: Economic Geography

Regional Studies: United States and Canada

Time 2-3 Class Periods

Strategies and Tie-ins to Curriculum:

3rd Quarter

Module 4: Human Geography I: Population Patterns and Processes

Regional: Growing Pains (Comparison of Europe and Africa)

Focus: Comparison and Contrast of reasons for Population Growth, socioeconomic reasons for growth

Time: 1-2 Class Periods

Strategies and Tie-ins to Curriculum: This lesson can be used for the other regions

4th Quarter

Module 3: Physical Geography II: Ecosystems, Climate, and Vegetation

Regional: Seasonal Differences: South Asia

Focus: Analyze the patterns and effects of monsoon rains on geography, agriculture and population

Strategies and Tie-ins to Curriculum:

Other Topics:

Module 3: Physical Geography II: Ecosystems, Climate, and Vegetation

Global: Running Hot and Cold: A Global Perspective

Focus: Comparison and Contrast of rainfall and temperatures, climographs

Module 5: Human Geography II: Political Geography

Global: Crossing the Line

Focus: Identify boundary forms, patterns of size and shape that influence boundaries and national cohesiveness and economic potential.

Module 5: Human Geography II: Political Geography

Regional: Case Study of Saudi Arabia and Yemen

Focus: Study the process to create a new border and how it effects the physiographic, cultural, agricultural, and economics of both countries.?

A House Divided: The Partition of Palestine by the United Nations in 1947

Regional: Students will explore a key 20th century boundary decision, the partition of Palestine by the United Nations in 1947. In the lesson, they will role-play membership in a special U.N. commission established to determine boundaries for a Jewish state and an Arab state in the former British Mandate of Palestine. The students must consider a number of variables in making boundary decisions. These include Jewish and Arab population distribution, location of Jewish-owned land, physiographic features, and climate.

Website: <http://gis.esri.com/industries/education/arclessons/arclessons.cfm>

Use the advanced search options. Enter Palestine into the search box to download the lesson. You will need to unzip the files to your hard drive.

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