Geo Jobs – Explore Careers in Geography

Grade: MS / HS	Lesson Duration: 45-50 minutes
Course: Social Studies / Science / CTE	Topic: Geography Skills and Careers
Synopsis: This activity supports the Geography Careers Story Map to raise awareness of geography as a career.	
Guiding Question(s): What can a person do with a degree in geography? Where are the jobs in geography?	

TEKS Standards:
World Geography
(6) Geography. The student understands the types, patterns, and processes of settlement.
(22) Social Studies Skills. The student communicates in written, oral, and visual forms.

Student Expectations:
- Locate and describe alumni settlement patterns.
- Use geographic terminology correctly and generate summaries of geography careers.

Materials:
- Geography Careers Story Map: https://tage.maps.arcgis.com/apps/MapSeries/index.html?appid=8b3c2b06cafd4997a735655ea96cb0d6 OR http://arcg.is/1Uxrc4Q OR the QR Code
- Geography Career Field Descriptions (Short and long text versions based on the Story Map.)
- Student Handout (2 options): Geo Jobs – 4 Square Poster student handout with an additional question on spatial patterns.

Extension Activities:
- Write three tips you would recommend for students interested in this field.
- Write three interview questions you would ask a geographer.
- Create a job description for a geography career.
- Create a 60 second career video.

Teacher Note:
This activity supports the Texas State University Geography Careers Story Map. The short text on the following pages is the same text in the Story Map. TAGE developed multiple resources to support defining geography and understanding it as a career with specific skills and perspectives. For this activity, TAGE created a "What can I do with a degree in geography?" handout, two student worksheet formats, and two versions of career field descriptions (short and long descriptions). Each handout also includes a spatial distribution question for students to use their spatial analysis skills to locate, describe, and explain alumni settlement patterns. Use the Geographic Inquiry Process to answer the question.

If you have any suggestions, please share with us at tage.geography@txstate.edu.

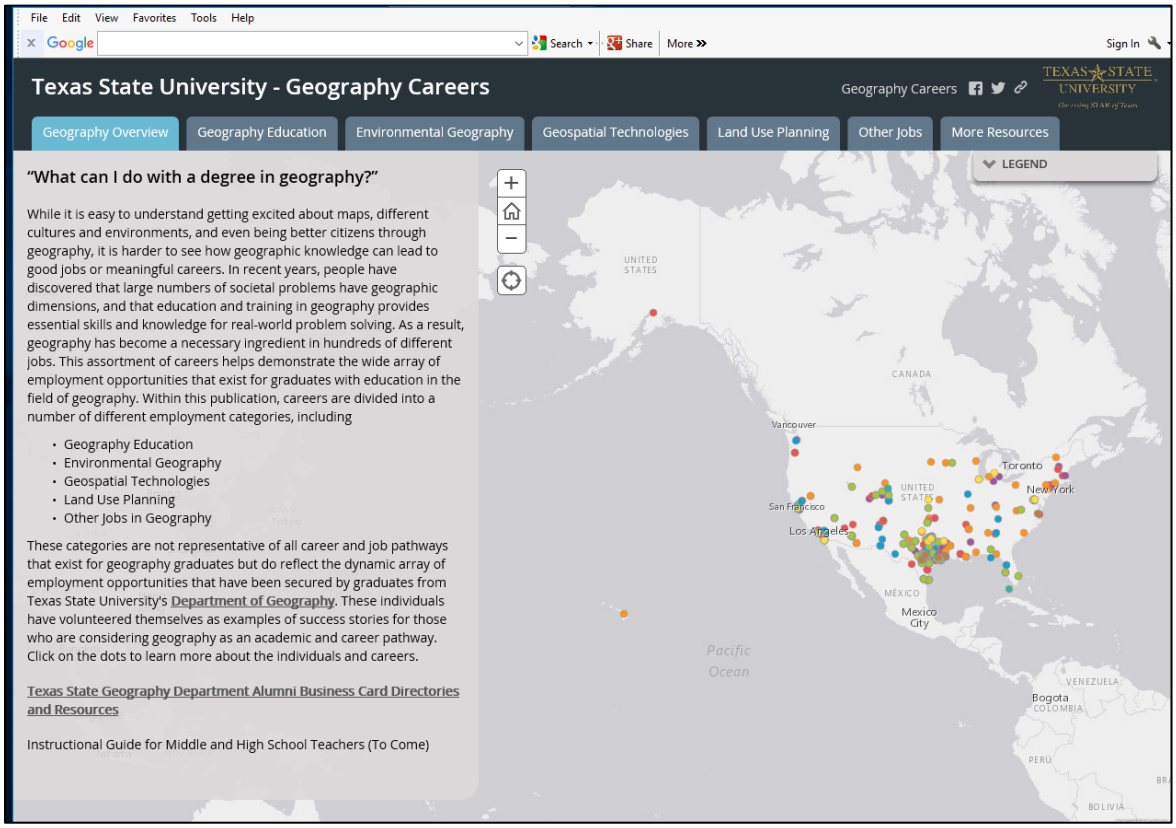
“What can I do with a degree in geography?”

While it is easy to understand getting excited about maps, different cultures and environments, and even being better citizens through geography, it is harder to see how geographic knowledge can lead to good jobs or meaningful careers. In recent years, people have discovered that large numbers of societal problems have geographic dimensions, and that education and training in geography provides essential skills and knowledge for real-world problem solving. As a result, geography has become a necessary ingredient in hundreds of different jobs. This assortment of careers helps demonstrate the wide array of employment opportunities that exist for graduates with education in the field of geography. Within this publication, careers are divided into a number of different employment categories, including

- Geography Education
- Environmental Geography,
- Geospatial Technologies,
- Land Use Planning, and
- Other Jobs in Geography.

These categories are not representative of all career and job pathways that exist for geography graduates but do reflect the dynamic array of employment opportunities that have been secured by graduates from Texas State University's Department of Geography.

Geography Careers Story Map available at
https://tage.maps.arcgis.com/apps/MapSeries/index.html?appid=8b3c2b06cafd4997a735655ea96cb0d6 OR
http://arcg.is/1Uxrc4Q



Geography Career Field Descriptions - Short Text Reading

Geography Education

It is essential that well qualified geography instructors instill in students of all ages an understanding of other peoples and cultures throughout the world. It is the responsibility of geographic educators, therefore, to provide students at all grade levels with the geographic knowledge and skills necessary to be productive citizens and successful employees in a global society. Primary and secondary geography educators (i.e., K-12 education) are required to take teacher certification courses within the college of education, in addition to completing a number of physical (e.g., geomorphology, atmospheric sciences, environmental) and human (e.g., regional, urban, cultural) geography content courses. Geography educators who choose to teach at the post-secondary level, at community colleges or universities, must complete graduate-level geography courses that are traditionally specialized and rich in content. It is in these courses that future college professors uncover the depths of geographic research and gain an understanding of what is required to teach and advance knowledge in an academic environment. Many geography educators utilize their talents beyond classroom settings. Museums, non-profit organizations, and government agencies hire geography educators to develop and conduct public outreach, organize and/or conduct educational programs, and contribute to education policy at local, state, or national levels.

Environmental Geography

Environmental geography is a branch of geography that examines the spatial aspects of interactions between humans and the natural world. As a society we are becoming more aware of developmental trends in areas such as population growth, resource consumption, and environmental degradation. At the same time, the global media is continuously reporting on events wherein human suffering and environmental damage are directly related to human choices. It is under these conditions that we are driven to increase our understanding of the dynamics of human/environment relationships. Environmental geographers use a critically important set of analytical tools for assessing the impact of human presence on the environment by measuring the result of human activity on natural land forms and cycles. With geographic expertise with backgrounds in disciplines such as biogeography, geology, geomorphology, hydrology, and meteorology, as well as in human-focused fields, such as environmental/hazards perception, sustainable development, environmental conservation and management, and environmental assessment, environmental geographers take positions as park rangers, environmental investigators, disaster managers, conservation specialists, and environmental policy specialists.

Geospatial Technologies

Geospatial technologies, which include Geographic Information Systems (GIS), Global Positioning Systems (GPS), and Remote Sensing, are powerful tools used to store, analyze, visualize, and present spatial information. Together with appropriate cartographic techniques and principles, geographers are using geospatial technologies to better understand the interaction of various factors across space, including population distribution, traffic movement, land use and availability, real estate prices, environmental hazards, soil types, and vegetative cover. Anything that can be tied to a geographic location (geo-referenced) can be analyzed spatially, which means that geospatial tools can (and often should) be used in every aspect of the practice of geography. Of course, it also means that geographers equipped with geospatial training can permeate fields well beyond the traditional field of geography. Geospatial technologies comprise the fastest-growing area of the geography career field. Career and job positions in geospatial technology are available in the public and private sectors, in fields ranging from environmental conservation to resource speculation to health and safety administration, computer science, resource management, and education. Geography provides the key to understanding and effectively using these systems.

Land Use Planning

Land use planning involves the use of land, resources, facilities, and services to secure the physical, economic and social efficiency, and health and well-being of urban and rural communities. Land use planners are responsible for prescribing short-term and long-range developmental paths that a geographic entity, such as a neighborhood, community, or county will follow. Their skills are an important part of social policy, ensuring that land is used efficiently for the benefit of the wider economy and population as well as to protect the environment. Planning skills are enhanced through geographic studies such as population and transportation systems, resource and land use planning, and urban systems management. Geographers who pursue careers in planning often have strong backgrounds in both physical and human geography, which helps them to determine how best to structure immediate physical surroundings so that human (personal, commercial, organizational, or recreational) needs/desires are met. Geographers who specialize in planning traditionally take jobs as urban and regional planners, consultants, environmental engineers, environmental planners, transportation specialists, or housing specialists.

Other Geography Careers

Since the study of geography provides a wide range of skills and knowledge that are essential for real-world problem solving, a degree in geography can prepare you for an equally wide array of jobs and careers that may not fall neatly into the arbitrary job categories. Graduates from the Texas State Department of Geography currently hold a variety of “other” job positions, including television meteorologist, chaplain, tour guide for hunting parties, editor for an academic publication, demographer for the National Center for Health Statistics, president of a consulting firm, legislative director for a State Representative, and crime analyst for the Austin Police Department. This is not an exhaustive list – other geography graduates occupy a wide range of other job positions that build directly on a solid foundation of geographic skills and knowledge. Thus, a geography degree provides marketable skills and the broad perspective on environment and society that enables graduates to carve out their own career pathways in a variety of fields.

Environmental Geography

As a society we are becoming more aware of developmental trends in areas such as population growth, resource consumption, and environmental degradation. At the same time, the global media is continuously reporting on events wherein human suffering and environmental damage are directly related to human choices. It is under these conditions that we are driven to increase our understanding of the dynamics of human/environment relationships. As a society, we have also assumed the responsibilities of monitoring and managing environments for their health and sustainability, as well as predicting potential human-induced environmental impacts so that appropriate and informed decisions - personal, political, economic, and social - can be made. These challenges and responsibilities are typically encompassed in the field of environmental geography.

Environmental geography is a branch of geography that examines the spatial aspects of interactions between humans and the natural world. Using a critically important set of analytical tools for assessing the impact of human presence on the environment by measuring the result of human activity on natural landforms and cycles, environmental geographers unite their geographic expertise with backgrounds in disciplines such as biogeography, geology, geomorphology, hydrology, and meteorology, as well as in human-focused fields, such as environmental/hazards perception, sustainable development, environmental conservation and management, and environmental assessment. Environmental geographers take positions as park rangers, environmental investigators, disaster managers, conservation specialists, and environmental policy specialists. Though not an exhaustive list, these job titles aptly characterize the human/environment interaction that forms the core of environmental geography.

Within the scope of environmental geography jobs listed above, there is wide range of work responsibilities. Park rangers, for instance, are charged with educating the public and protecting the natural areas set aside by government entities for preservation and recreation. Environmental investigators are responsible for conducting research and surveys of particular sites, collecting and analyzing samples, and making recommendations about how to proceed, whether in a private or public capacity.

Conservation specialists manage, improve, and protect natural resources to maximize their use without damaging the environment. They may work with local business people, such as farmers, ranchers, and developers, to develop environmentally-friendly ways of using the land for business. An environmental geographer might also serve as an environmental policy specialist, participating in and coordinating research in addition to developing environmental policies at the local, state, or federal level.

There are important spatial and environmental aspects to numerous economic and political policy decisions confronting our society on a daily basis. Geography students are well prepared to understand the complexities of such societal issues and provide informed and intellectual solutions to the many multifaceted environmental issues.

Land Use Planning

Land use planning involves the scientific, aesthetic, and orderly disposition of land, resources, facilities, and services with a view to securing the physical, economic and social efficiency, and health and well-being of urban and rural communities. Land use planners are responsible for prescribing short-term and long-range developmental paths that a geographic entity, such as a neighborhood, community, or county will follow. Their skills are an important part of social policy, ensuring that land is used efficiently for the benefit of the wider economy and population as well as to protect the environment.

Humans depend upon transportation – the movement of materials, ideas, products, and people – in countless ways. Highways, railroads, airports, seaports, and pipelines are essential links that tie people and places together in an increasingly interdependent world. Consequently, planners analyze questions related to population growth patterns, traffic patterns and congestion, pollution, recreation, water and waste materials, available resources, social services, land use, and a myriad of economic issues in order to advance a planning agenda. While urban and regional planning is often considered a part of architectural and urban management studies, planning is uniquely geographic in its focus on human/environment interaction and spatial organization.

In addition to fostering a sense of place for a geographic location, planners with backgrounds in geography are also aware of spatial relationships and patterns that both define a community and influence its various capacities, including public health and safety, transportation, and recreation. Planning skills are enhanced through geographic studies such as population and transportation systems, resource and land use planning, and urban systems management. Geographers who pursue careers in planning often have strong backgrounds in both physical and human geography, which helps them to determine how best to structure immediate physical surroundings so that human (personal, commercial, organizational, or recreational) needs/desires are met.

Geographers who specialize in planning traditionally take jobs as urban and regional planners, consultants, environmental engineers, environmental planners, transportation specialists, or housing specialists. They are employed in municipal, state, and federal government offices, or hold positions with global corporations, architectural firms, and other businesses. Geography, with a focus on the spatial interaction between people and places, helps us to understand the need for modern transportation and enables us to plan for the future.

Geospatial Technologies

Geospatial technologies, which include Geographic Information Systems (GIS), Global Positioning Systems (GPS), and Remote Sensing are powerful tools used to store, analyze, visualize, and present spatial information. Together with appropriate cartographic techniques and principles, geographers are using geospatial technologies to better understand the interaction of various factors across space, including population distribution, traffic movement, land use and availability, real estate prices, environmental hazards, soil types, and vegetative cover. Anything that can be tied to a geographic location (geo-referenced) can be analyzed spatially, which means that geospatial tools can (and often should) be used in every aspect of the practice of geography. Of course, it also means that geographers equipped with geospatial training can permeate fields well beyond the traditional bounds of the discipline.

Geographic Information Systems consist of hardware and software systems that allow layering and manipulation of geo-referenced data, while Remote Sensing involves the gathering and interpretation of remotely-sensed data, usually from satellites or aircrafts, and are primarily used for spatial analysis. Geographers who utilize these geospatial technologies should also have a firm understanding of cartographic techniques. The importance of a foundation in cartography, the art and science of map- making, lies in the knowledge that maps are designed with specific purposes and for particular audiences. Cartographic principles related to balance, color-choice, text placement, and simplification become important considerations when using any geospatial tool for presentation, such as using GIS to present a proposed hike/bike trail corridor to a city council.

Geospatial technologies comprise the fastest-growing area of the geography. Career and job positions in geospatial technology are available in the public and private sectors, in fields ranging from environmental conservation to resource speculation to health and safety administration, computer science, resource management, and education. Government agencies at local, state, and national levels are among the largest employers of geographers skilled in geospatial techniques. Geographers training in geospatial technologies are also among the most sought after professionals in technical career fields. The U.S. Department of Labor identified geospatial technologies as one of the fastest growing employment fields in the country, projecting 70,000 new skilled jobs available each year. All of the aforementioned high-tech systems form a global web that links people and places. Geography provides the key to understanding and effectively using these systems.

Geography Education

As more and more geography courses are being offered in primary, secondary, and higher education, the need for geography educators at all levels has risen dramatically. Modern communication networks, transportation technology, economic factors, corporate expansion, and federal policy initiatives are progressively transforming society into a global community. It is essential that well qualified geography instructors instill in students of all ages an understanding of other peoples and cultures throughout the world.

Despite the need for high-quality geography instruction in the 21st Century, several national and global knowledge studies have exposed the lack of geographical knowledge that our nation's students possess. It is the responsibility of geographic educators, therefore, to provide students at all grade levels with the geographical knowledge and skills necessary to be productive citizens and successful employees in a global society.

Primary and secondary geography educators (i.e., K-12 education) are required to take teacher certification courses within the college of education, in addition to completing a number of physical (e.g., geomorphology, atmospheric sciences, environmental) and human (e.g., regional, urban, cultural) geography content courses. Geography educators who choose to teach at the post-secondary level, at community colleges or universities, must complete graduate-level geography courses that are traditionally specialized and rich in content. It is in these courses that future college professors uncover the depths of geographic research and gain an understanding of what is required to teach and advance knowledge in an academic environment.

Many geography educators utilize their talents beyond classroom settings. Museums, non-profit organizations, and government agencies hire geography educators to develop and conduct public outreach, organize and/or conduct educational programs, and contribute to education policy at local, state, or national levels. For example, an environmental education specialist working for a government agency may be charged with the general supervision, maintenance, facilitation, and development of age/grade- level appropriate programs that comply with educational standards. A degree in geography education prepares a future educator to enhance the geographic knowledge of others, whether in a formal or informal learning environment.

Business Geography

Geographers are increasingly in demand in the business community because of their abilities to synthesize spatially-diverse information, to uncover spatial patterns, and to solve spatial problems using 21st Century geospatial technological tools such as Geographic Information Systems (GIS), Global Positioning Systems (GPS), and Remote Sensing. Geospatial technology is one of the most dynamic and rapidly expanding workforce categories identified by the United States Department of Labor. Consequently, career and job opportunities for those with an interest in business geography are widespread and challenging.

Business geography is based upon their diverse knowledge and skills related to location analysis. As a result, business geographers play a key role in a vast array of business ventures, such as helping to make decisions about where to build the next Walgreens drug store or determining the most time-efficient route for a UPS delivery driver. Business geographers may also combine their geographic knowledge with the application of geospatial tools to provide a broad scale analysis of factors important an industry, such as using GIS to provide to coffee farmers in Costa Rica with a geospatial analysis of soil erosion and water quality, which could enhance the environmental sustainability of their farms, as well as the yield and quality of their coffee. Business geographers rely on reasoning and evaluation abilities, as well as on geospatial technological skills in computer mapping and analysis software to make recommendations about changes to the world around them.

Business geographers understand the importance of location and the spatial distribution of economic activities. They focus on the spatial dynamics of trade, transportation, migration, capital flows, and communication networks. In this service- and commodity- based society, the success of a business often depends in large part upon its geographic location, and business geographers are well equipped to solve the problem of where to establish a business in order to achieve maximum profitability. However, geographers in the business community are not solely relegated to site selection. With backgrounds rich in area and regional studies, geographers are attuned to the subtle and obvious differences among the many culture communities of the world. That insight opens domestic and international doors in trade, policy, and business relations.

Real Estate & Construction

Geographers are often attracted to two professions that exist universally in population centers - real estate and construction. Residential structures, commercial centers, and governmental facilities are constantly being built, improved-upon, sold, or demolished, and geographers are often involved in many stages of this work. Just as a business geographer might focus on establishing the optimum location for a particular boutique, a geographer working in real estate development needs to focus on determining the optimum location for a shopping mall. Many of the skills and expertise are the same, but the scale is usually different. Regardless of scale, retail outlets, restaurants, shopping centers, and local business may find that a good location results in higher profits and more convenience and accessibility for the general public. Well-trained geographers are prepared to provide such knowledge.

Geographers are particularly well equipped to evaluate the price of real estate. They are aware of the impact that zoning regulations or changes can have on property value, available municipal services, transportation, environmental features, and potential return on an investment. Geographers who take positions in real estate and construction typically complete courses in urban and political geography, transportation studies, marketing, land use/analysis, and field techniques, such as surveying. Most real estate professionals need a special license to practice and may have to take special courses in the field to obtain it. Jobs are available with local and national real estate agencies, relocation companies, global corporations, appraisal firms, developers, commercial and residential construction, and banks.

Some geographers work as licensed surveyors, who are integral players in the business of real estate and construction. Surveyors may use geospatial technologies such as Global Positioning Systems (GPS) and Geographic Information Systems (GIS) in the field, in addition to traditional survey techniques. Their responsibilities include determining the legal boundaries of properties being constructed or sold and measuring a site's slope for appropriate construction allowances. Surveyors may also measure the depths of waterways to determine shipping routes help plan future highways or road networks.

Though construction may not always be viewed as environmentally-sustainable, many geographers are involved in the construction of business and residential properties, particularly in the area of sustainable development. Numerous commercial centers and residential neighborhoods are now being constructed with energy and water efficient components and fixtures, and geographers work closely with developers to introduce green building techniques from around the world into contemporary construction projects.

Other Jobs in Geography

Our daily lives are interwoven with the varying aspects of geography. Each of us lives in a unique place and is in constant interaction with our surroundings. Geographic knowledge and skills are essential for us to understand the activities and patterns of our daily routines and that of others. Geographic knowledge and understanding, therefore, is fundamental to leading satisfying lives and contributing to the welfare of our communities.

Since the study of geography provides a wide range of skills and knowledge that are essential for real-world problem solving, a degree in geography can prepare you for an equally wide array of jobs and careers that may not fall neatly into the arbitrary job categories found in this directory. Geography graduates have discovered that their academic backgrounds have uniquely prepared them to become Peace Corps volunteers, agricultural extension agents, map librarians, lobbyists, field reporters, and ranch managers, to name a few.

Graduates from the Texas State Department of Geography currently hold a variety of "other" job positions, including television meteorologist, tour guide for hunting parties, editor for an academic publication, demographer for the National Center for Health Statistics, president of a consulting firm, legislative director for a State Representative, and crime analyst for the Austin Police Department. This is not an exhaustive list – other geography graduates occupy a wide range of other job positions that build directly on a solid foundation of geographic skills and knowledge. These fields include, but are not limited to, population geography (demography), transportation geography, political geography (geopolitics), health geography, economic geography, development geography, and emergency management. Thus, a geography degree provides marketable skills and the broad perspective on environment and society that enables graduates to carve out their own career pathways in a variety of fields.

Interdisciplinary Careers

Given the need for geographic knowledge and skills in the twenty-first century, employment opportunities abound in a wide array of fields that one might not correlate with a degree in geography. Therefore, one must look beyond the job title. In other words, simply because a job does not come with the title of "geographer," there are abundant new career opportunities related to geography and/or firms that are in need of an individual who understands geography in order propel their company to the forefront of their respective sector. These career opportunities, coupled with the knowledge and skills a degree in geography affords, provide you with an endless array of job options.

Texas State graduates, for example, have obtained rewarding careers in fields ranging from military careers to tax examiners. More specifically, graduates of the Department of Geography are currently employed as athletic coaches, computer technicians and analysts, and flight instructors. Other graduates work in marketing and sales, various branches of the military, mass communication industries, and insurance firms. Although not all-inclusive, the aforementioned areas of employment allude to the depth and breathe of careers available to graduates of the geography department.

Geographic knowledge and understanding is fundamental to reaching one's personal and career oriented goals, and in attaining a higher quality of life. Whether you are interested in a career in the military or as a theater operator, a degree in geography opens the doors to rewarding careers that contribute to personal and professional satisfaction.

This page left intentionally blank.

Geo Jobs – Explore Geography Careers!

Read your assigned geography field (ex. environmental geography), then either individually or in groups complete the chart below. Remember that correct information, neatness, and clear visuals are important. Write in complete sentences.

Summarize three key points about your geography field.	**List and describe three careers in this field.**
Draw or find pictures to create a visual representation of your geography field.	**Use the links and videos associated with the reading to write and describe two interesting facts that you learned. Cite the video or link.**

Review the map in the Geography Careers Story Map. What geographic patterns do you see? Explain some of the processes involved with these settlement patterns. Map is available at http://arcg.is/1Uxrc4Q or scan the QR code.

Geo Jobs – Explore Geography Careers!

Read your assigned geography field (ex. environmental geography) and then either individually or in groups complete the chart below. Be prepared to present your findings to the class or group. Remember that correct information, neatness, and clear visuals are important.

Geography Field (ex. environmental geography)	**Summarize three key points about your geography field.**	**List and describe three careers in this field.**	**Create a visual representation of your geography field.**	**Write and describe two interesting facts that you learned from the links/videos.**

Geography Field (ex. environmental geography)	**Summarize three key points about your geography field.**	**List and describe three careers in this field.**	**Create a visual representation of your geography field.**	**Write and describe two interesting facts that you learned from the links/videos.**

Review the map in the Geography Careers Story Map. What geographic patterns do you see? Explain some of the processes involved with these settlement patterns. Map is available at http://arcg.is/1Uxrc4Q or scan the QR code.