ARIZONA EDUCATOR PROFICIENCY ASSESSMENTS™

STUDY GUIDE

04 Geography

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AZ-SG-FLD004-01

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FIELD-SPECIFIC INFORMATION

Field 04: Geography

INTRODUCTION

This section includes a list of the test objectives, practice questions, and an answer key for the selected-response questions.

Test objectives. As noted earlier, the test objectives are broad, conceptual statements that reflect the knowledge, skills, and understanding an entry-level educator needs to practice effectively in Arizona schools. The list of test objectives for each test field is the *only* source of information about what a specific test will cover and therefore should be studied carefully.

Practice questions. The practice selected-response questions and practice performance assignments included in this section are designed to give you an introduction to the nature of the questions included in the AEPA tests. The practice questions represent the various types of questions you may expect to see on an actual test; however, they are *not* designed to provide diagnostic information to help you identify specific areas of individual strengths and weaknesses or to predict your performance on the test as a whole.

When you answer the practice questions, you may wish to use the sample answer sheet and sample Written Response Booklet provided in Part 1 to acquaint yourself with these materials. Use the answer key located after the practice questions to check your answers. Sample responses are provided immediately following each written performance assignment. The sample responses in this guide are for illustrative purposes only. Your written response should be your original work, written in your own words, and not copied or paraphrased from some other work.

To help you identify how the test objectives are measured, the objective statement to which the question corresponds is listed in the answer key. When you are finished with the practice questions, you may wish to go back and review the entire list of test objectives and descriptive statements for your test field.

TEST OBJECTIVES

Field 04: Geography

SUBAREAS:

1. Geographic Concepts and Skills
2. World Geography
3. United States and Arizona Geography
4. Contemporary Issues and Future Trends

GEOGRAPHIC CONCEPTS AND SKILLS

0001 Understand basic geographic terms, themes, and specialized fields of geography.

For example: defining basic geographic terms and concepts (e.g., habitat, resource, acculturation); relating these terms and concepts to appropriate geographic situations; using the five themes of location, place, relationship within places, movement, and region to analyze ecological, economic, social and political relationships and processes; employing basic concepts of geography to analyze the geographic dimension of human cultures and institutions; and recognizing approaches, techniques, and materials of specialized fields of geography.

0002 Understand how to use maps and globes to answer geographic questions.

For example: demonstrating familiarity with commonly used maps (e.g., political, relief, resource); using latitude and longitude to find places on maps; distinguishing between maps and globes; and recognizing basic map projections (e.g., Mercator, Robinson).

0003 Understand the basic natural processes that shape the earth.

For example: demonstrating familiarity with the geological processes that alter the earth's surface (e.g., volcanic activity, sedimentation), hydrological processes that circulate moisture and erode landforms (e.g., evaporation, condensation), atmospheric processes that create weather (e.g., atmospheric pressure, radiation), and biological processes through which living organisms interact with the physical environment (e.g., the food chain); and using this knowledge to analyze such geographic phenomena as continental drift, wind patterns, and the characteristics of particular environments and ecosystems.

0004 Understand the relationship of the earth to other bodies in space.

For example: recognizing how the relationship of the earth to other bodies in space is influenced by such physical forces as gravity, inertia, centrifugal force, and radiation; and understanding these forces and using that knowledge to analyze such phenomena as tidal movements, weather, and seasonal variations in climate and daylight hours.

0005 Understand the interrelationship between geography and history.

For example: recognizing the ways in which the development of human societies has been shaped by environmental influences; examining the impact of technological innovations on human societies and the physical environment (e.g., the internal combustion engine); and analyzing human sources of pollution and the environmental effects of pollution.

0006 Locate, organize, analyze, and interpret geographic information.

For example: recognizing the characteristics and uses of various sources of geographic information; interpreting a variety of geographic source materials (e.g., maps, aerial photographs, statistical reports); recognizing procedures for retrieving information from traditional sources, computers, and other technological devices; distinguishing between essential and incidental information; deciding whether conclusions or generalizations are based on credible information; and determining the reliability of geographic information.

WORLD GEOGRAPHY

0007 Understand major physical features of the earth.

For example: demonstrating familiarity with the shape and location of major land masses, their significant landforms, and their relationship to bodies of water; and examining relationships among the physical features of a region, its distinctive forms of plant and animal life, and its patterns of human settlement and cultural development.

0008 Understand global and regional climatic patterns.

For example: understanding the main elements of climate (e.g., temperature, precipitation, air pressure); recognizing major climate types; examining the influence of such factors as atmospheric circulation, ocean currents, latitude, and altitude on climatic patterns; and analyzing different ways in which plant and animal life and human cultures interact with climatic conditions.

0009 Understand global and regional patterns of resource distribution.

For example: locating major concentrations of important natural resources (e.g., fossil fuels, rain forests); analyzing the relationship between resource distribution and economic development; and recognizing the geological and climatic factors that determine the location of water, soil, mineral, fossil fuel, and living resources.

0010 Understand global and regional patterns of population distribution and rural/urban settlement.

For example: examining periods of major world population increase and decline; recognizing historical and contemporary patterns of human migration and population distribution; analyzing the economic, environmental, and cultural reasons for major demographic change; examining physical and historical factors that have influenced patterns of rural and urban settlement; and analyzing the effect of different patterns of urban/rural settlement on the environment.

0011 Understand global and regional patterns of transportation and communication.

For example: understanding the historical development of major global and regional trade routes; examining the impact of the industrial and information revolutions on transportation and communications; analyzing major factors affecting global and regional patterns of transportation and communication; and examining environmental, economic, and cultural changes that have accompanied the evolution of transportation and communication systems.

0012 Understand global and regional patterns of land use and development.

For example: understanding basic forms of land use and development (e.g., agricultural, forestry, mining, industrial); examining political, social, economic, and cultural factors that influence patterns of land use (e.g., the need for increased commercial space in a rapidly growing city); and analyzing the environmental, cultural, and economic consequences of different types of land use and development (e.g., desertification caused by overgrazing).

0013 Understand global and regional patterns of culture and society.

For example: demonstrating familiarity with the major cultural groups associated with particular regions and recognizing significant cultural variations within and among the peoples of these regions (e.g., Jewish and Arab residents of Israel, immigrant populations in the United States); using knowledge of world and regional cultures to analyze interactions of human societies with each other and with their environments; and understanding how culture and experience influence perceptions of places and regions.

0014 Understand global and regional patterns of economic self-sufficiency and interdependence.

For example: understanding different types of economies (e.g., capitalist, socialist, mixed); recognizing major patterns of world trade; examining factors encouraging and discouraging economic self-sufficiency and interdependence; and analyzing the relationship of economic choices to issues of resource conservation.

UNITED STATES AND ARIZONA GEOGRAPHY

0015 Understand major climatic and physical features of Arizona and the United States.

For example: identifying major state and national landforms and major rivers and other bodies of water; recognizing the principal climate and vegetation patterns found within Arizona and the United States; and analyzing interactions among physical features, climatic conditions, human communities, and regional ecologies.

0016 Understand patterns of natural resource distribution within Arizona and the United States.

For example: identifying major state and national resources; examining geological, climatic, and biological factors that have influenced the location of resources; analyzing the connection between resource distribution and the social, economic, and political development of Arizona and the nation; and examining ways in which natural resources have shaped regional environments within Arizona and the United States.

0017 Understand patterns of population growth, distribution, and movement within Arizona and the United States.

For example: locating significant areas of historical and contemporary settlement; examining economic, technological, and historical factors that have shaped state and national patterns of population growth and decline; and analyzing the effects of population change on the physical environment and human communities of Arizona and the United States.

0018 Understand patterns of transportation and communication within Arizona and the United States.

For example: understanding the physical and historical conditions and developments that have shaped the evolution of transportation and communication systems in Arizona and the United States; examining the influence of technology on those systems; analyzing the impact of state and national systems of transportation and communication on human activity and the natural environment; and using this information to examine contemporary problems.

0019 Understand patterns of land use and development within Arizona and the United States.

For example: recognizing basic forms of land use and development within Arizona and the United States (e.g., residential, agricultural, industrial, commercial); examining physical, historical, and political factors that influence state and national land use decisions; and analyzing the environmental, cultural, and economic consequences of regional land use and development patterns.

0020 Understand social, political, and cultural characteristics of Arizona and the United States.

For example: understanding the social, political, economic, and religious principles that have shaped the culture of Arizona and the United States (e.g., democracy, free enterprise, religious freedom); analyzing the structure and functions of the private and public institutions through which those principles operate; understanding the impact of those principles and institutions on human activity and the environment within Arizona and the United States; demonstrating familiarity with the racial and ethnic groups in Arizona and U.S. society; analyzing social, political, and cultural interactions among those groups; and understanding the importance of cultural pluralism in U.S. history.

CONTEMPORARY ISSUES AND FUTURE TRENDS

0021 Understand the relationship of geography to contemporary issues in human-environment interactions.

For example: understanding major issues related to the global environment; analyzing local and national policies in terms of their global impact on the environment; determining immediate and indirect causes of environmental problems; and predicting possible future effects of existing patterns of environmental destruction and reclamation.

0022 Understand contemporary issues in demographic change and economic development and interdependence.

For example: examining physical, social, economic, political, and technological factors that affect population growth and movement; evaluating the effects of population growth and decline on ecologies, economies, and resources at local, national, and global levels; and analyzing the potential effects of current economic trends on particular societies, on relations among nations, and on the physical environment.

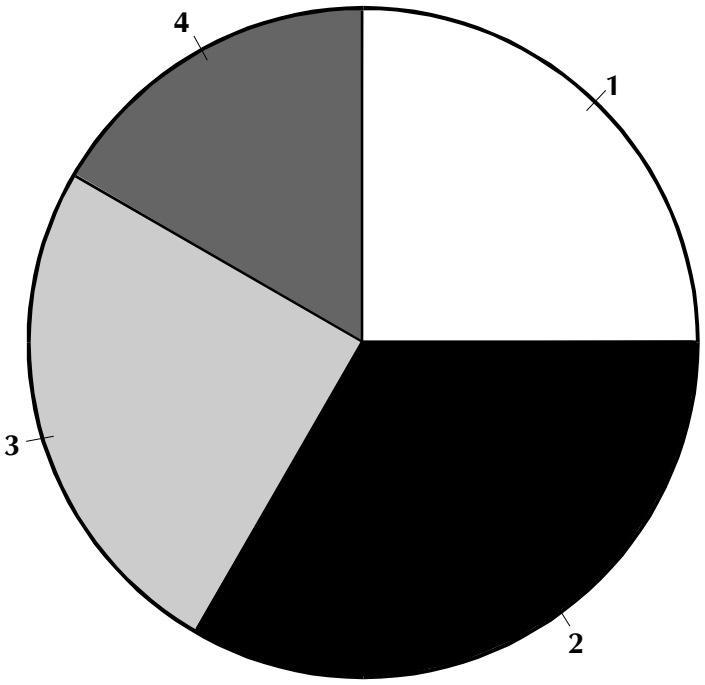
0023 Understand contemporary issues in energy and resource use.

For example: understanding the global supply and distribution of major natural resources; examining ways in which particular resources are used; analyzing factors that influence demand for resources and energy; evaluating resource and energy policy; and analyzing the effects of various types of resource use on society and the physical environment.

0024 Understand contemporary cultural, ethnic, and geopolitical issues.

For example: demonstrating familiarity with contemporary world events; recognizing ideological and military factors influencing recent geopolitical developments; understanding the roles of nationalism and internationalism in world affairs; evaluating the implications of current geopolitical trends (e.g., the redrawing of political boundaries, ethnic conflicts, the emergence of new political alignments); and assessing the possible effects of political change on human uses of the environment.

DISTRIBUTION OF SELECTED-RESPONSE ITEMS ON THE TEST FORM



Subarea	Approximate Percentage of Selected-Response Items on Test Form
1. Geographic Concepts and Skills	25%
2. World Geography	34%
3. United States and Arizona Geography	25%
4. Contemporary Issues and Future Trends	16%

PRACTICE QUESTIONS

Field 04: Geography

1. An economic geographer is planning a study to test the validity of the profit-maximization theory of industrial location. The geographer can best ensure the study's credibility by focusing attention on which of the following matters when developing a research design?

   A. the average distance firms in the research sample traveled to relocate

   B. the range of industries represented by firms in the research sample

   C. the average capitalization of firms in the research sample

   D. the variety of regions represented by firms in the research sample

2. The theory of plate tectonics can best be used to explain which of the following geographic phenomena?

   I. the distribution of climate types

   II. the growth of continents

   III. the location of major mountain ranges

   IV. the organization of ecosytems

   A. I and II only

   B. I and IV only

   C. II and III only

   D. III and IV only

3. Which line on the chart correctly matches a geographic reference work with the type of information likely to be found in that work?

Line	Reference Work	Type of Information
1	globe	locations of various types of natural resources
2	geographic dictionary	population pyramids for specific nations and world regions
3	atlas	analyses of changes in global trade patterns
4	almanac	statistics on industrial production and energy consumption

A. Line 1

B. Line 2

C. Line 3

D. Line 4

4. **Use the passage below about aquaculture in Asia to answer the question that follows.**

   Throughout Asia, people have long known the benefits of aquaculture. Pond farming techniques allow traditional mainland farmers to raise a rich source of dietary protein as well as produce an excellent natural fertilizer from harvested fish droppings. In land-poor Japan, the shallow coastal areas become the pond. Today, Japanese farmers of the sea, or mariculturalists, grow increasing amounts of the sea plants and shellfish that are a regular part of the Japanese diet.

   The pattern of resource distribution and exploitation described in the passage affects regional development mainly by:

   A. increasing the percentage of regional income derived from exportable goods.

   B. encouraging economic over-dependence on a single resource.

   C. increasing the self-sufficiency of regional food suppliers.

   D. encouraging investment by outside developers.

5. Because air masses have a limited capacity to carry moisture, people living in which of the following areas are likely to experience the greatest problems obtaining sufficient water for supporting plant and animal life?

   A. an inland country with much of its land below sea level

   B. a country located in a region with few forest lands

   C. an inland country surrounded by mountains

   D. a country located in a middle latitude temperature zone

6. Which of the following best describes the relationship between resource distribution, economic organization, and political authority in Japan?

   A. To prevent shortages of vital raw materials, the Japanese government regulates the inputs used to produce certain manufactured goods.

   B. To ensure a reasonably equitable distribution of national resources, the Japanese government places sharp limitations on the size and investment practices of major economic enterprises.

   C. To obtain scarce resources, the Japanese government creates state-run purchasing organizations that operate throughout East Asia.

   D. To achieve important national economic aims, the Japanese government helps provide enterprises with the resources to undertake major projects without worrying about short-term returns.

7. Two adjoining nations will most often become economically interdependent when:

   A. each country specializes in the production of different types of goods.

   B. the labor force of each country is well educated and highly productive.

   C. each country has similar topographical conditions and material resources.

   D. the government of each country is committed to economic diversification.

8. An individual driving from Kansas City to Phoenix would pass through which of the following North American ecosystems?

   A. prairie—mountain—desert

   B. steppe—mountain—broadleaf forest

   C. prairie—broadleaf forest—desert

   D. steppe—desert—needle leaf forest

9. Which of the following statements best describes the resource base of the United States?

   A. The United States possesses major reserves of important raw materials, but the projected costs of extraction are so high that many of these resources are of limited value.

   B. The United States has a broadly diversified resource base, though high depletion rates and uncertain energy prospects could cause problems in the future.

   C. Long-standing disregard for the environmental consequences of economic activity has sharply reduced the U.S. resource base and made the country almost completely dependent on other nations for its raw material needs.

   D. Although the United States has a relatively narrow resource base, the raw materials that it does possess are likely to be extremely valuable in a postindustrial economic world.

10. Which of the following factors strongly influenced the patterns of spatial mobility of African Americans during the first half of the twentieth century in the United States?

    I. the development of transportation facilities linking the Southwest to national markets

    II. the mechanization of agricultural operations throughout much of the South

    III. the changing labor needs of manufacturing industries in northern industrial centers

    IV. the growing diversification of economic activity along the Pacific Coast

    A. I and II only

    B. I and IV only

    C. II and III only

    D. III and IV only

11. Which of the following have strongly influenced contemporary land use and development patterns in the southwestern states of Arizona, New Mexico, and Texas?

I. ample supplies of coal, iron ore, and other minerals used in manufacturing industries

II. widespread automobile ownership to minimize transportation problems associated with low-density settlement patterns

III. easy access to timber resources suitable for use in residential construction

IV. development of ways to make groundwater resources available for crop irrigation and human consumption

A. I and III only

B. I and IV only

C. II and III only

D. II and IV only

12. Which of the following contemporary environmental problems poses the greatest threat to the earth's biological diversity?

A. the pollution of lakes and streams by the acid rain caused by smoke and soot released from the chimneys of factories and power plants in industrial nations

B. the destruction of tropical rain forests as a consequence of developmental activities in parts of Asia, Africa, and Latin America

C. the inadequacy of the various means used to dispose of the growing accumulation of rubbish and solid wastes in urban areas of the United States and other industrial nations

D. the spread of desertlike landscapes in arid environments as a consequence of overgrazing and the destruction of vegetation

Below are the directions for the Geography performance assignment.

DIRECTIONS FOR THE PERFORMANCE ASSIGNMENT

This section of the test consists of a performance assignment. **The assignment can be found on the next page.** You are asked to prepare a written response of approximately 2–3 pages on the assigned topic. You should use your time to plan, write, review, and edit your response for the assignment.

Read the assignment carefully before you begin to work. Think about how you will organize your response. You may use any blank space in this test booklet to make notes, write an outline, or otherwise prepare your response. **However, your score will be based solely on the version of your response written in Written Response Booklet B.**

As a whole, your response must demonstrate an understanding of the knowledge and skills of the field. In your response to the assignment, you are expected to demonstrate the depth of your understanding of the content area through your ability to apply your knowledge and skills rather than merely to recite factual information.

Your response will be evaluated based on the following criteria.

- **PURPOSE:** the extent to which the response achieves the purpose of the assignment
- **SUBJECT MATTER KNOWLEDGE:** accuracy and appropriateness in the application of subject matter knowledge
- **SUPPORT:** quality and relevance of supporting details
- **RATIONALE:** soundness of argument and degree of understanding of the subject matter

The performance assignment is intended to assess subject knowledge content and skills, not writing ability. However, your response must be communicated clearly enough to permit scorers to make a valid evaluation of your response according to the criteria listed above. Your response should be written for an audience of educators in this field. The final version of your response should conform to the conventions of edited American English. This should be your original work, written in your own words, and not copied or paraphrased from some other work.

Be sure to write about the assigned topic. Please write legibly. You may not use any reference materials during the test. Remember to review your work and make any changes you think will improve your response.

Below is the scoring scale for the Geography performance assignment.

SUBJECT TESTS—PERFORMANCE ASSIGNMENT SCORING SCALE

Score Point	Score Point Description
4	**The "4" response reflects a thorough knowledge and understanding of the subject matter.** • The purpose of the assignment is fully achieved. • There is a substantial, accurate, and appropriate application of subject matter knowledge. • The supporting evidence is sound; there are high-quality, relevant examples. • The response reflects an ably reasoned, comprehensive understanding of the topic.
3	**The "3" response reflects an adequate knowledge and understanding of the subject matter.** • The purpose of the assignment is largely achieved. • There is a generally accurate and appropriate application of subject matter knowledge. • The supporting evidence is adequate; there are some acceptable, relevant examples. • The response reflects an adequately reasoned understanding of the topic.
2	**The "2" response reflects a limited knowledge and understanding of the subject matter.** • The purpose of the assignment is partially achieved. • There is a limited, possibly inaccurate or inappropriate, application of subject matter knowledge. • The supporting evidence is limited; there are few relevant examples. • The response reflects a limited, poorly reasoned understanding of the topic.
1	**The "1" response reflects a weak knowledge and understanding of the subject matter.** • The purpose of the assignment is not achieved. • There is little or no appropriate or accurate application of subject matter knowledge. • The supporting evidence, if present, is weak; there are few or no relevant examples. • The response reflects little or no reasoning about or understanding of the topic.

U	**The response is unrelated to the assigned topic, illegible, primarily in a language other than English, not of sufficient length to score, or merely a repetition of the assignment.**
B	**There is no response to the assignment.**

Practice Performance Assignment

13. **Read the information below; then complete the exercise that follows.**

Throughout history, technological and conceptual advances in geography and cartography have both resulted from and aided people's efforts to explore regions of the world previously unknown to them.

Using your knowledge of geography, write an essay in which you:

- identify a specific shortcoming in geographic knowledge that became apparent as a result of people's interest in exploration; and

- describe a technological or conceptual advance in geography that came about as a result of efforts to overcome the shortcomings.

Sample Performance Assignment Response: Score Point 4

One advance that proved essential to European exploration during the fifteenth century and after was the evolution in explorers' understanding of latitude and longitude. Prior to the mid-fifteenth century, the European seagoing experience was confined mostly to the Mediterranean and to Atlantic coastal areas immediately adjacent to Europe. Sailing these waters could be accomplished by relying on personal experience of winds and currents and by keeping in view well-known landmarks. Beginning with the Portuguese explorations southward along the African coast in the fifteenth century, however, sailors entered an unknown world without familiar landmarks and beyond the experience of any of their pilots. They began to have need of more sophisticated maps and charts in order to determine exactly where they were. This was even more the case once they determined to sail out of sight of land altogether.

The known world had been marked off in imaginary lines of latitude and longitude as far back as the Greek astronomers and cartographers-latitude being a determination of location in north-south terms and longitude on an east-west basis. The Europeans greatly refined this system of notation. Latitude was relatively simple to determine. At the equator at the equinoxes, the sun at noon is directly overhead, at an altitude of 90°. Using a sea astrolabe or quadrant, European sailors could take a reading of the sun at midday. The altitude of the sun above the horizon at noon could be used to give them their present position, in terms of the number of degrees they were north or south of the equator. By the end of the fifteenth century, Portuguese navigators had written in the latitude values for virtually all the eastern coast of Africa, leading to extremely accurate maps of this region. Similarly, in determing their position in the open seas, European navigators had very little difficulty fixing their positions in north-south terms on the basis of latitude.

The question of longitude, however, proved much more difficult to solve. Because of the earth's rotation, east-west location could not be achieved through a simple reading of the sun. Long after the time of Columbus, navigators continued to determine longitude, or attempted to, through complicated observations of the moon or through dead reckoning (Columbus's method)-both notoriously unreliable methods that resulted in innumerable disasters, since an error of only a few degrees in the observation could make a difference of hundreds of miles at sea. Because of these difficulties, the European intellectual world spent centuries grappling with the problem of longitude. The answer proved dependent upon the construction of more accurate and reliable clocks. Because the earth makes one complete revolution through 360° every 24 hours, it is turning 15° every hour. Two places on the map exactly an hour apart have a variance of 15° in longitude. Therefore, if a seagoing explorer knew the exact time of the place he had left shore and the exact time in the place he currently was, he could make a determination of how many degrees easterly or westerly he had traveled.

(continued on next page)

Sample Performance Assignment Response: Score Point 4 *(continued)*

The truth of this proposition had been grasped by certain scientists and inventors, including Galileo, for a considerable period. The problem boiled down to the lack of a reliable seagoing clock that would keep accurate time during the entire period of a seagoing voyage. Conventional pendulum and spring models customized for seagoing use proved unable to stand up to the rigors of an ocean voyage. The problem was not solved until nearly the eighteenth century when Robert Hooke and later, definitively, John Harrison perfected a portable clock using a balance spring that proved successful. Harrison's model, which was used on a voyage to the New World around 1760, lost only a few seconds during a voyage of several months, enabling navigators to plot their longitudinal location within a few minutes or so. In the aftermath of this discovery, a line of zero longitude was established at the Royal Observatory in Greenwich, England, and determinations of longitude were subsequently recorded using this point of reference.

With the refinement of their understanding of latitude and longitude, European navigators were able to plot their location anywhere on the globe with considerable accuracy. This technological advance made possible the production of the first truly accurate maps of the world and led, for the first time, to a true understanding of the location of places in the world and the distances between them.

ANSWER KEY

Field 04: Geography

Question Number	Correct Response	Objective
1.	**B**	Understand basic geographic terms, themes, and specialized fields of geography.
2.	**C**	Understand the basic natural processes that shape the earth.
3.	**D**	Locate, organize, analyze, and interpret geographic information.
4.	**C**	Understand global and regional patterns of resource distribution.
5.	**C**	Understand global and regional climatic patterns.
6.	**D**	Understand global and regional patterns of resource distribution.
7.	**A**	Understand global and regional patterns of economic self-sufficiency and interdependence.
8.	**A**	Understand major climatic and physical features of Arizona and the United States.
9.	**B**	Understand patterns of natural resource distribution within Arizona and the United States.
10.	**C**	Understand patterns of population growth, distribution, and movement within Arizona and the United States.
11.	**D**	Understand patterns of land use and development within Arizona and the United States.
12.	**B**	Understand the relationship of geography to contemporary issues in human-environment interactions.