Unit 2 - World Climate Patterns

SCO 2.1: The student will be expected to demonstrate an understanding of how the earth's movement in space causes the occurrence of and the conditions related to day and night and the seasons, including the following delineations:

2.1.1 Distinguish between the terms rotation and revolution. (k)
2.1.2 Explain how cloud cover influences the range of temperatures from day to night. (k)
2.1.3 Define the terms equinox and solstice. (k)
2.1.4 Explain how changes in the seasons, in the northern hemisphere and the southern hemisphere, relate to the earth's revolution around the sun. (k)
2.1.5 Describe the factors that account for differences in length of day as seasons change. (k)
2.1.6 Describe the factors that account for differences in temperature as seasons change. (k)

SCO 2.2: The student will be expected to detect patterns in the distribution of temperatures on the earth's surface, including the following delineations:

2.2.1 Explain how the greenhouse effect moderates climates. (k)
2.2.2 Generalize that temperatures *tend* to decrease from low to high latitudes. (a)
2.2.3 Explain how the earth's shape causes temperatures to decrease from low to high latitudes. (k)
2.2.4 Given selected data, assess the accuracy of temperature descriptions. (i)

SCO 2.3: The student will be expected to demonstrate an understanding of the cause of winds and how winds affect climate, including the following delineations:

2.3.1 Define the term prevailing winds. (k)
2.3.2 Describe conditions that result in land breezes and sea breezes. (k)
2.3.3 State the impact of the coriolis effect on wind direction. (k)
2.3.4 Infer how wind systems relate to major pressure belts. (a)
2.3.5 Explain how wind systems and temperature are related. (k)
2.3.6 Define the terms windward, leeward, and rain shadow. (k)
2.3.7 Examine how the type of rainfall (i.e., orographic, frontal, and convectional) is related to the nature of location. (a)
2.3.8 Explain how wind systems and precipitation are related. (k)

SCO 2.4: The student will be expected to demonstrate an understanding of how ocean currents affect climate, including the following delineations:

2.4.1 Define the term ocean current. (k)
2.4.2 Analyze how ocean currents can create different climatic conditions for two locations on the same latitude. (a)

SCO 2.5: The student will be expected to demonstrate an understanding how distance from the ocean affects climate, including the following delineations:

2.5.1 Define the term temperature range. (k)
2.5.2 Analyze the relationship between range in temperature and distance from the ocean. (a)
2.5.3 Define the term monsoon. (k)
2.5.4 Explain why winter and summer monsoons occur. (k)
2.5.5 Describe the relationship between seasonal level of precipitation and distance from the ocean.

SCO 2.6: The student will be expected to demonstrate an understanding of the relationship between elevation and climate, including the following delineations:

2.6.1 Define the term elevation. (k)
2.6.2 Describe the relationship between the elevation of a point and its temperature and precipitation. (k)
2.6.3 Analyze the relationship between temperature and precipitation of a point and its location relative to a mountain system. (a)

SCO 2.7: The student will be expected to demonstrate an understanding of the combined effect of climatic conditions and the zones they produce, including the following delineations:

2.7.1 Given relevant information, determine climatic conditions within selected zones. (a)
2.7.2 Draw conclusions about patterns in the distribution of climatic conditions that give rise to the distribution of climatic zones. (a)

SCO 2.8: The student will be expected to demonstrate an understanding of how climate conditions may affect human activity, including the following delineations:

2.8.1 Demonstrate, using examples, how human activity is influenced by climatic conditions. (a)
2.8.2 Examine how human activity affects climatic conditions (e.g., greenhouse effect, ozone depletion, global warming). (a)
2.8.3 Argue a preference for the aesthetic appeal of selected climatic conditions. (i)
2.8.4 Examine how selected climatic phenomena (e.g., El Nino, lake effect, hurricanes) affect human activity. (I)