Study Guide: Unit 4 Ecosystems

Hints: Look over notes and/or handouts 10 minutes EVERY night. If you feel insecure about a topic, look for self-help videos online. Come see me in the morning, bear time, or afternoon! Play the Kahoots I sent you. Check out the website hchscollier.weebly.com! Most of all, if you believe in yourself as much as I do, you will be AMAZING!

**Plate Tectonics**: **Describe** the geological changes and events that occur at convergent, divergent, and transform plate boundaries.

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| Check | Essential Knowledge |
|  | Convergent boundaries can result in the creation of mountains, island arcs, earthquakes, and volcanoes. |
|  | Divergent boundaries can result in seafloor spreading, rift valleys, volcanoes, and earthquakes. |
|  | Transform boundaries can result in earthquakes. |
|  | Maps that show the global distribution of plate boundaries can be used to determine the location of volcanoes, island arcs, earthquakes, hot spots, and faults. |
|  | An earthquake occurs when stress overcomes a locked fault, releasing stored energy |

**Earth’s Atmosphere**: **Describe** the structure and composition of the Earth’s atmosphere.

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| Check | Essential Knowledge |
|  | The atmosphere is made up of major gases, each with its own relative abundance |
|  | The layers of the atmosphere are based on temperature gradients and include the troposphere, stratosphere, mesosphere, thermosphere, and exosphere. |

**Global Wind Patterns**: **Explain** how environmental factors can result in atmospheric circulation

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| Check | Essential Knowledge |
|  | Global wind patterns primarily result from the most intense solar radiation arriving at the equator, resulting in density differences and the Coriolis effect |

**Solar Radiation & Earth’s Seasons**: **Explain** how the sun’s energy affects the Earth’s surface

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| Check | Essential Knowledge |
|  | Incoming solar radiation (insolation) is the Earth’s main source of energy and is dependent on season and latitude. |
|  | The angle of the sun’s rays determines the intensity of the solar radiation. Due to the shape of the Earth, the latitude that is directly horizontal to the solar radiation receives the most intensity. |
|  | The highest solar radiation per unit area is received at the equator and decreases toward the poles. |
|  | The solar radiation received at a location on the Earth’s surface varies seasonally, with the most radiation received during the location’s longest summer day and the least on the shortest winter day |
|  | The tilt of Earth’s axis of rotation causes the Earth’s seasons and the number of hours of daylight in a particular location on the Earth’s surface |

**Earth’s Geography & Climate:** **Describe** how the Earth’s geography affects weather and climate

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| Check | Essential Knowledge |
|  | Weather and climate are affected not only by the sun’s energy but by geologic and geographic factors, such as mountains and ocean temperature. |
|  | A rain shadow is a region of land that has become drier because a higher elevation area blocks precipitation from reaching the land |

**El Nino & La Nina**: **Describe** the environmental changes and effects that result from El Niño or La Niña events (El Niño– Southern Oscillation).

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| Check | Essential Knowledge |
|  | El Niño and La Niña are phenomena associated with changing ocean surface temperatures in the Pacific Ocean. These phenomena can cause global changes to rainfall, wind, and ocean circulation patterns. |
|  | El Niño and La Niña are influenced by geological and geographic factors and can affect different locations in different ways |