5. 1 Notes

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| How is Earth a system? | * The atmosphere (Air) and the Hydrosphere (Water) interact * The sun warms both the air and the water * Together these two sphere produce weather * WEATHER: the condition on the earth’s atmosphere at any time or place |
| How is temperature measured? | Eureka video |
| How is heat transferred? | Foldable |
| How is the troposphere heated? | * The troposphere is the lowest layer of the atmosphere * Radiation, conduction, and convection work together * The sun heats the surface. The surface radiates heat. There is conduction between land and sea |

5.2 Notes

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| How does water move through the atmosphere? | The Water cycle moves between land and living things, bodies of water on Earth’s surface and in the atmosphere   * 1. Water evaporates: liquid molecules absorb energy and transform into a gas   2. Condensation forms clouds: warm air carries the water upward where it cools and turns back into a liquid droplet   3. Precipitation: The water droplet gets heavy and falls back down in the form of rain, snow, sleet or hail.   4. Runoff: The rain which falls on the land runs off into lakes, rivers, streams or oceans where it can evaporate again. |

5.3 Notes

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| What are the patterns that affect temperature? | 1. Latitude: near the equator is the tropical zone, next comes temperate zone and the poles in the polar zone 2. Altitude: as you go up into the troposphere the temperature drops thus it is cooler on the top of mountains 3. Distance from large bodies of water. Large bodies of water moderate the temperature. They warm when it is cool and cool when it is warm. 4. Ocean currents: air follows the temperature of the ocean   Gulf Stream: Carries warm water from Gulf of Mexico to Europe |
| What are patterns that affect precipitation? | 1. Prevailing Winds: winds that usually blow in one direction 2. Mountain ranges: air is forced to rise rapidly then it cools and condenses into clouds and fog   Two sides of the mountain 1)windward: is the side the wind hits, rain and snow fall here. 2) leeward: little to no wind. Known as the rain shadow because it gets little to no precipitation   1. Jet stream: narrow bands of high speed winds 2. Seasonal winds: winds that change direction with the season   “Monsoon” – Warm wind from the ocean cools over land and creates rainy season |

5.4 Notes

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| What are some properties of air? | * Density: the amount of mass in a given volume of air   + - * Density= mass/volume      * Pressure: results from the weight of a column of air pushing on an area. |
| What instrument measures air pressure? | * A barometer  1. Mercury barometer: long glass tube resting in a dish of mercury. As pressure increases the mercury rises 2. Aneroid barometer: an airtight chamber that is sensitive to pressure. The chamber is pushed in when pressure rises and bulges out when pressure lessens |
| How does altitude affect air pressure and density? | Air pressure and density decrease as altitude increases  When air is less dense (higher up) it has fewer molecules than at sea level. |

Chapter 5 review

1. What is the hydrosphere? All the water on earth
2. Conduction (two things touching), convection (the transfer of heat by the movement of air and/or water) and radiation (electromagnetic waves)
3. Water cycle: evaporation, condensation, precipitation, runoff and transpiration
4. Climate types (tropical, temperate, polar) US is temperate
5. What happens to air pressure as you go up into the troposphere? The Air pressure drops as you rise up in the troposphere
6. Hot air rises because it has expanded and is less dense
7. We name winds for the direction they come from ex. A westerly comes from the west to the east
8. What does the ocean do to land temperatures? Moderates or makes less extreme
9. Thermometer? Measures temp Barometer? Air pressure
10. Factors that affect climate? Latitude, altitude, large bodies of water and CURRENTS