

Unit 2 Exam Preview/ Review Sheet

<p>Earth Systems and Resources</p> <ul style="list-style-type: none"> • Geology and Earth Resources <ul style="list-style-type: none"> ○ A Dynamic Planet ○ Rocks and Minerals ○ Economic Geology and Mineralogy ○ Environmental Effects of Resource Extraction ○ Conserving Geologic Resources ○ Geologic Hazards • Air, Weather, and Climate <ul style="list-style-type: none"> ○ The Atmosphere and Climate ○ Climate • Biomes: Global Patterns of Life <ul style="list-style-type: none"> ○ Terrestrial Biomes ○ Marine Ecosystems ○ Freshwater Ecosystems ○ Human Disturbance 	<ul style="list-style-type: none"> • Read Chapters 7 and 9. Complete Questions for Review and Questions for Critical Thinking for each chapter. • Review STF
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Key Terms:

abiotic	core	igneous rock	stratosphere
albedo effect	coriolis Effect	inquiry	technology
atmosphere	crust	lithosphere	tectonic plate
biome	El Nino-ENSO	mantle	tectonic plates
biosphere	environment	metamorphic rock	thermohaline current
biotic	erosion	rain shadow	troposphere
convection cell	geosphere	sedimentary rock	upwelling

Major Concepts: (Things you must know and be able to apply to real world examples)

- Understand the connections between earth quakes and volcanos
- Understand the layers of the Earth/ plate tectonics
- Know the different types of rock, how they are formed and where they can be found.
- Detailed understanding of El Nino, causes and effects.
- Convection and Coriolis Effect
- Characteristics of the Earth's major biomes
- Cause or climate and weather
- Layers of the atmosphere
- Earth's resources-crust (process of extraction)
- Graph reading

Thinking Questions:

1. How are biomes influenced by the larger climate patterns of latitude, Hadley cells and ocean currents?
2. Why are there seasons?
3. Why are there tides? How do these influence aquatic life zones?
4. What are the causes of Global Climate Change?
5. What are some examples of positive feedback loops that are increasing with climate change?
6. What are some of the theorized problems that could result from a changing climate? can you explain:
 - a. Glaciers
 - b. Polar ice caps
 - c. Ocean acidification (related rising CO₂)
 - d. Permafrost
 - e. Sea level
 - f. Sea water warming
 - g. Hurricanes/Storms
 - h. Coral Bleaching
 - i. Shifting habitats
 - j. Migration time/place changes
 - k. Disease patterns/spread
 - l. Water supply
 - m. Agriculture productivity
7. What are some ways we could reduce global climate change? How do they work?
 - a. Kyoto protocol
 - b. Carbon sequestration
 - c. Carbon footprint
 - d. Carbon tax
 - e. Carbon offset
 - f. Cap and trade
 - g. Energy use

HELPFUL LINKS:

Overview of wind and water currents on globe: <https://youtu.be/6vgvTeuoDWY>

Crash Course for Kids: <https://youtu.be/YbAWny7FV3w>

Seasons (Bill Nye) <https://youtu.be/KUU7lyfR34o>

General Climate overview: <https://youtu.be/lrPS2HiYVp8>

El Nino: <https://youtu.be/WPA-KpldDVc>

CA news description: <https://youtu.be/1L1MIsCwri4>

<https://youtu.be/whsQblwWjBo>

Coriolis Effect:

<https://youtu.be/rdGtcZSFRLk>

Climate Change:

Bill Nye: <https://youtu.be/3v-w8Cyfoq8>

At the end of this unit APES students should be able to:

- Identify the five layers of the atmosphere
- Discuss the factors that cause unequal heating of the Earth
- Describe how the Earth's tilt affects seasonal differences in temperature
- Explain how air moves in local and global convection currents and how this affects climate
- Explain how the movement of air currents are changed by topography and this in turn affects climate
- Explain the patterns of ocean circulation, both surface and deep sea and apply these patterns to climate
- Discuss the causes and consequences of El Nino
- Compare and contrast the defining characteristics of the 9 main terrestrial biomes
- Interpret climate diagrams and apply map and climate data to associated biomes
- Identify and describe the major fresh and saltwater biomes
- Explain the underlying process of the greenhouse effect
- Distinguish between the greenhouse effect and global warming, and climate change
- Identify the natural and anthropogenic sources of greenhouse gases
- Be able to interpret graphs of greenhouse gases and climate trends over time
- Discuss how data of greenhouse gases and temperatures have been collected
- Explain the role of feedback loops on climate change, discuss examples
- Discuss how climate change has affected organism and the environment
- Identify scientific predictions for future changes to the environment and discuss how these changes are related to climate change
- Discuss strategies that have been suggested or put in place to reduce climate change or its impacts (technology, strategies, laws, and treaties).