

ASSIGNMENTS: CHAPTERS 1-3 (summer assignment)

Intro to Environmental Science, Systems, and Ecosystem Ecology

<u>Learning Objectives</u>	<u>Date</u>	<u>Class Work</u>	<u>Homework</u>
<u>Review Chapter 1: Environmental Science</u> - Define the field of Environmental Science and discuss its importance - Identify ways in which humans have altered and continue to alter our environment - Identify key environmental indicators and their trends over time - Define sustainability and explain how it can be measured using the ecological footprint - Explain the scientific method and its application to the study of environmental problems - Describe some of the unique challenges and limitations of environmental science	Lesson 1 A1 -8/28 short G1 -8/28 short	1. Bell Ringer: Find your seat. Getting to know you Pair/share: What is shown in this picture? Education Model 2. TCOB: find seats, check reading notes, go over contracts, books, other logistics: online textbook 3. Introduction to APES 4. Any questions on C1 reading? 5. Watch Story of Stuff video (if time) (check hw) 6. Calculate your ecological footprint using The Global Footprint Network website 7. Start HW: Experimental Design Assignment	1. Study for Test on Chapters 1, 2, 3 on Lesson #5 Day (Sept 9) 2. Experimental Design Assignment - due next class 3. Finish 1st day paperwork with parent signatures <u>Additional Resources:</u> - PBS Affluenza video from 1984 - Article: Humanity's Unsustainable Environmental Footprint - Footprint calculator spreadsheet - Chapter 1 Flashcards
<u>Chapter 2 - Environmental Systems</u> - Describe how matter comprises atoms and molecules that move among different systems - Explain why water is an important component of	Lesson 2 A1 -9/3	1. Bell Ringer: What are the first and second laws of thermodynamics? Relate them to food chains and	1. Study for Test on Chapters 1, 2, 3 on Lesson #5 Day 2. Math Practice Problems

most environmental systems - Discuss how matter is conserved in chemical and biological systems - Distinguish among various forms of energy and understand how they are measured - Discuss the first and second laws of thermodynamics and explain how they influence environmental systems - Explain how scientists keep track of energy and matter inputs, outputs, and changes to environmental systems	short G1-8/29 long	ecological efficiency. 2. TCOB: Check Experimental Design Assignment HW (S), collect contracts, C1 ?'s 3. Kahoot Review Chapter 2, Questions on C2? 4. Modelling Systems Activity: Systems Thinking and Modelling, ex. STELLA program and symbols, symbols2, getting started with STELLA webinar (if there is time left.) [ex. How Wolves Change Rivers video, cc, wolf/elk pop. model] 5. Watch Easter Island, cc (4.33 min) video 6. Use input/output symbols to create a model of the Easter Island population over time 7. Math Practice Problems	packet, # 1-12 (skip the Energy questions) 3. Experimental Design Assignment - due next class <u>Additional Resources:</u> - Chapter 2 Flashcards - Math videos (click on Math Videos on the right) - APES Mathematics Review video help - APES Math Review (with explanations) -Mrs. Gupte's Table of all Bozeman videos and Quizlets for each chapter in the APES textbook
<u>Review Chapter 3 - Ecosystem Ecology</u> - Explain the concept of ecosystem boundaries - Describe the process of photosynthesis and respiration (know the chemical equations) - Distinguish among the trophic levels that exist in food chains and food webs - Quantify ecosystem productivity - Explain energy transfer efficiency and trophic pyramids - Describe how water cycles within ecosystems	Lesson 3 A1-9/4 long G1-9/4 long	1. Bell Ringer: Haiti - Dominican Republic border picture. Why are they different? 2. TCOB: join College Board Classroom check math problems packet 3. Finish Easter Island Systems Model 4. Go over Math Practice	1. Study for Test on Chapters 1, 2, 3 on 9/9 (FRQ) and 9/11 (MC) 2. Unkindest Cut worksheet <u>Additional Resources</u> - Mrs. Cutler's solutions to APES Mathematics Review

- Explain how carbon cycles within ecosystems - Explain how nitrogen cycles within ecosystems - Explain how phosphorus cycles within ecosystems - Discuss the movement of calcium, magnesium, potassium, and sulfur within ecosystems - Distinguish between ecosystem resistance and ecosystem resilience - Explain the insights gained from watershed studies - Explain the intermediate disturbance hypothesis - Complete math problems including: unit conversions, metric units, scientific notation, energy efficiency, and primary productivity		<u>Problems</u> 5. Cycles Review Activity (stations) 6. Start HW: Unkindest Cut (S) 7. Garden work or start making class study guide	<u>Problems</u> - Matter and Energy Video - Carbon Cycle Video - Nitrogen Cycle Video - Hydrologic Cycle Video - Article: Earthworms and the Carbon Cycle - Article: N-fixing archaeobacteria - Article: Evolution of the Earth Surface Sulfur Reservoir - Ms. Gupte's Table of all Bozeman videos and Quizlets for each chapter in the APES textbook
- Review Chapters 1-3 (see previous learning objectives)	Lesson 4 - Review A1-9/6 short G1-9/5 short	1. Bell Ringer: Primary Productivity Practice Problem, graphic 2. TCOB: Check HW Unkindest Cut, Distribute Field Notebooks, AP Classroom video, Join My AP Classroom, printable instructions here A BLOCK JOIN CODE = 3JJEKR G BLOCK JOIN CODE =	1. Study for FRQ (Free Response Question) + 1 Math Problem from Chapters 1,2, and 3 NEXT CLASS. 2. Log onto My AP Classroom: Join My AP Classroom, printable instructions here A BLOCK JOIN CODE = 3JJEKR G BLOCK JOIN CODE =

		7ZNMW3 3. Go over Unkindest Cut (S) 4. Review Cycles posters 5. Review for Test on Chapters 1-3 tomorrow (Q&A) 6. Make your own class study guide 7. Practice note-taking and discussion, better to take notes by hand? More evidence	7ZNMW3 <u>Additional Resources:</u> Ms. Gupte's Table of all Bozeman videos and Quizlets for each chapter in the APES textbook More productivity practice problems with answers
- Demonstrate mastery of content in Chapters 1-3 (see previous learning objectives)	Lesson 5 - TEST A1 -9/9 long G1 -9/9 short	1. Bell Ringer: Review for Chapters 1-3 Test 2. FRQ + MATH - CHAPTERS 1-3 3. Start HW	1. Study for MC (Multiple Choice) from Chapters 1,2, and 3 NEXT CLASS. Test consists of 55 multiple choice questions. 2. Read and take hand-written notes on Chapter 8, Module 24 (Mineral Resources and Geology)
- Demonstrate mastery of content in Chapters 1-3 (see previous learning objectives)	Lesson 6 - TEST A1 -9/11 short G1 -9/11	1. Bell Ringer: Review for Chapters 1-3 Test 2. MC TEST ON CHAPTERS 1-3 3. Start HW	1. Read and take hand-written notes on Chapter 8, Module 24 (Mineral Resources and Geology) 2. Prepare for FIELD WORK next class. We'll be walking in the woods and field behind

	short		AHS. Wear long pants, long sleeves, socks, walking shoes. I'll have insect repellent.
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