

ASSIGNMENTS: CHAPTER 16

Waste

Modules 51-55

<u>Learning Objectives</u>	<u>Date</u>	<u>Class Work</u>	<u>Homework</u>
	Assessment A1-3/10 long G1-3/10 long	Chapters 15 Test: Air Pollution	1. Read and take notes on pp. 553-560 (Intro C16, Module 51: Only Humans Generate Waste) Airborne Particulate Matter Lab due Friday, 3/13 (print hard copy)
<u>Module 51: Only Humans Generate Waste</u> - Explain why we generate waste and describe recent waste disposal trends - Describe the content of the solid waste stream in the US - Explain the solid waste system - Why is E-Waste especially problematic?	Lesson 1 A1-3/12 short G1-3/11 short	For fun: Salmon Cannon video 1. Bell Ringer: Rob Greenfield videos .Block A, C14 tests 2. TCOB: Start APES No Plastics Challenge Assignment - Assignment #1 due 3/13 (F), 3/17 (A) Assignment #2 due 3/17 Google Doc = Quiz grade 4. Municipal Solid Waste (MSW) - Developed (Story of Stuff diagram and video) vs. developing countries - Why has waste increased in US since WWII? (MSW generation graph) - What is in MSW stream?	1. Read and take notes on Module 52 - The 3 R's and composting 2. Finish Airborne Particulate Matter Lab Due Friday, 3/13 (print hard copy) 3. APES No Plastics Challenge Assignment Assignment #1 due 3/13 (G), 3/17 (A) Assignment #2 due 3/17 Google Doc = Quiz grade Optional Assignment: Watch "Bag It" movie and write a 1 page personal reflection (extra HW grade)

		(MSW graph 2010, where does it go?, plastics recycling) - Single use items = 30% of MSW - E-Waste: problems 5. WASTE REVIEW QUESTIONS (work on Module 51 questions)	Additional Resources National Geographic Article: Waste Not, Want Not Industrial Waste Article: Waste Not Infographic: Grocery Stores, School Lunch Waste, UK vs. US Food Waste, Solid Waste, Video: NYC Treasures in the Trash (3 min) Industrial Waste Article: Waste Not Video: Story of a Spoon (2 min) Video: NYC Treasures in the Trash (3 min) Video: Cambridge, MA bans plastic bags Article: Plastics Found in 93% of Bottled Water Samples (2018) Website: Plastic Bag Bans in Massachusetts Website: Andover BYOBag Video: Waste in the Fashion Industry (3 min)
<u>Module 52: The Three R's and Composting</u> - Describe the 3 R's (what are the 4th and 5th R?) - Understand the process and	Lesson 2 A1-3/13 long	1. Bell Ringer: Which of your possessions are "wants" vs. "needs"? Rob Greenfield videos 2. TCOB: Collect Air Pollution Labs, APES No Plastics Challenge	1. Finish Airborne Particulate Matter Lab Due Fri, 3/13 (print hard copy) 2. APES No Plastics Challenge Assignment

benefits of composting	G1-3/13 short	Assignment - Assignment #1 due 3/13 (A), 3/17 (G) Assignment #2 due 3/30 Google Doc = Quiz grade 3. Reduce / Refuse Strategies - Wants vs. needs - Source reduction strategies = most important 4. Reuse Strategies - Milk/soda bottles - Upcycling - Swap meets, Craigslist 5. Recycling - - Pros and cons of recycling - MRF vs. source separation - Closed-loop vs. open-loop - Andover's Recycling Guide - *Watch - Ocean cleanup (21 min) effect of waste accumulation in the water.) 6. Composting - Home compost (C:N, 30:1) - Brick Ends Farm - Food Waste TedTalk: Rob Greenfield 7. WASTE REVIEW QUESTIONS Republic Services website Republic Services MRF field trip (16 min)	Assignment #1 due 3/13 Assignment #2 due 3/30 Google Doc = Quiz grade 3. Read and take notes on Module 53: Landfills and Incineration 4. Finish Module 52 WASTE REVIEW QUESTIONS Additional Resources National Geographic Article: Waste Not, Want Not TedTalk Teen: Why I Live a Zero Waste Lifestyle Industrial Waste Article: Waste Not Infographic: Grocery Stores, School Lunch Waste, UK vs. US Food Waste, Solid Waste, Video: NYC Treasures in the Trash (3 min) Industrial Waste Article: Waste Not Video: Story of a Spoon (2 min) Video: NYC Treasures in the Trash (3 min) Video: Cambridge, MA bans plastic bags Aluminum Recycling Report Aluminum Recycling Graphs Resin Identification Codes for Recycling Video: How does a MRF Work?
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			Video: San Francisco Recycling (3 min) Article: San Francisco Recycling Article: 3 Headaches for the Recycling Industry Article: Composting in NYC Video: Plastic Pollution Coalition (3 min)
<u>Module 53: Landfills and Incineration</u> - Describe the goals and functions of a solid waste landfill - Explain the design and purpose of a solid waste incinerator - Explain environmental impacts of landfills and incinerators	Lesson 3 A1-3/17 short G1-3/17 short	1. Bell Ringer: Every Animal From Deep Ocean Had Plastic 2. TCOB: APES No Plastics Challenge Assignment 3. Go over WASTE REVIEW QUESTIONS 4. Watch videos: - How does a WTE plant work? - How does a Sanitary Landfill work? (28 min video) or (3 min video) 5. WASTE REVIEW QUESTIONS - Module 53 6. Optional Assignment: Andover Waste Reduction Plan (only accepted after ALL Waste Review Questions are answered correctly first)	1. Read and take notes on Module 54: Hazardous Waste 3. Work on WASTE REVIEW QUESTIONS - Module 53 Optional: Work on Andover Waste Reduction Plan. Only AFTER ALL Waste Review Questions have been completed (check with Mrs. Cutler) <u>Additional Resources:</u>
<u>Module 54: Hazardous Waste</u> - Define hazardous waste and discuss the issues involved in	Lesson 4 A1-3/19	1. Bell Ringer: 2. TCOB: 3. Go over WASTE REVIEW	1. Read and take notes on Module 55: New Ways to Think About Waste

handling it - Describe regulations and legislation regarding hazardous waste (RCRA, CERCLA, Superfund) - Describe brownfields	short G1-3/18 long	QUESTIONS (Mod 53) + optional additional Hazardous Waste Study Guide Questions 3. Hazardous Waste Regulations - RCRA: “cradle-to-grave” - CERCLA: “superfund”, NPL, TRI - Brownfields Program 4. Optional: Work on Andover Waste Reduction Plan (extra test grade) 5. Work on WASTE REVIEW QUESTIONS - Mod 54 No plastic challenge Watch Bag It	2. Work on WASTE REVIEW QUESTIONS 3. Julia’s Capstone Project Assignment #1 due 3/8 Assignment #2 due 3/15 Google Doc = Quiz grade Take Hanna Paulo’s Survey about Recycling at AHS Optional Assignment: Andover Waste Reduction Plan <u>E-Block Only</u>: If you want to use the Portal in the library to “travel” to Afghanistan tomorrow, please write 3 questions related to the environment. <u>Additional Resources:</u> Ivanna Cleanup Pesticide Activity Ivanna Cleanup Grading Sheet Diagram: Secure Hazardous Waste Landfill Video: How does a plasma torch work? Video: Brownfield redevelopment success in Pittsburgh, PA Website: EPA’s Hazardous Waste Page Website: EPA’s RCRA Page Andover’s Household Hazardous Waste Collection - 2015 flier
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<u>Module 55: New Ways to Think About Solid Waste</u> - Explain the purpose of life-cycle analysis - Describe alternative ways to handle waste and waste generation	Lesson 5 A1 -3/23 long G1 -3/23 long	1. Bell Ringer: Article: China accepting less plastic ; Andover solid waste trend 2. TCOB: Discuss Julia's Capstone Project results 3. New ways to think about solid waste - Food Waste: Nat Geo article: Waste Not, Want Not - Life cycle analysis of jeans - Post-consumer vs. pre-consumer waste: Industrial Ecology, Denmark	1. Work on WASTE REVIEW QUESTIONS , due 3/23 2. Read and take notes on Module 56: Human Diseases (take notes in Disease Table) 3. Paige G's capstone survey about waste in the fashion industry Optional Assignment: Andover Waste Reduction Plan

		example - Eco-labeling - My Nearly Zero Waste Lifestyle - Integrated waste management - Waste in the Fashion Industry Watch Bag It	Additional Resources: Video: Waste in the Fashion Industry (3 min) Video: Japanese Town Almost Zero Waste
	A1-3/24 short G1-3/25 short	New ways to think about solid waste - Food Waste: Nat Geo article: Waste Not, Want Not - Life cycle analysis of jeans - Post-consumer vs. pre-consumer waste: Industrial Ecology , Denmark example - Eco-labeling - My Nearly Zero Waste Lifestyle - Integrated waste management - Waste in the Fashion Industry Watch “Bag It” movie	Read and take notes on Module 56: Human Diseases (take notes in Disease Table)
	Review A1-3/26 long G1-3/26	Watch “Bag It” movie	

	short		
	Assessment A1-3/30 Short G1-3/30 short	Chapters 16 Test: Waste	Read and take notes on Module 56: Human Diseases (take notes in Disease Table)