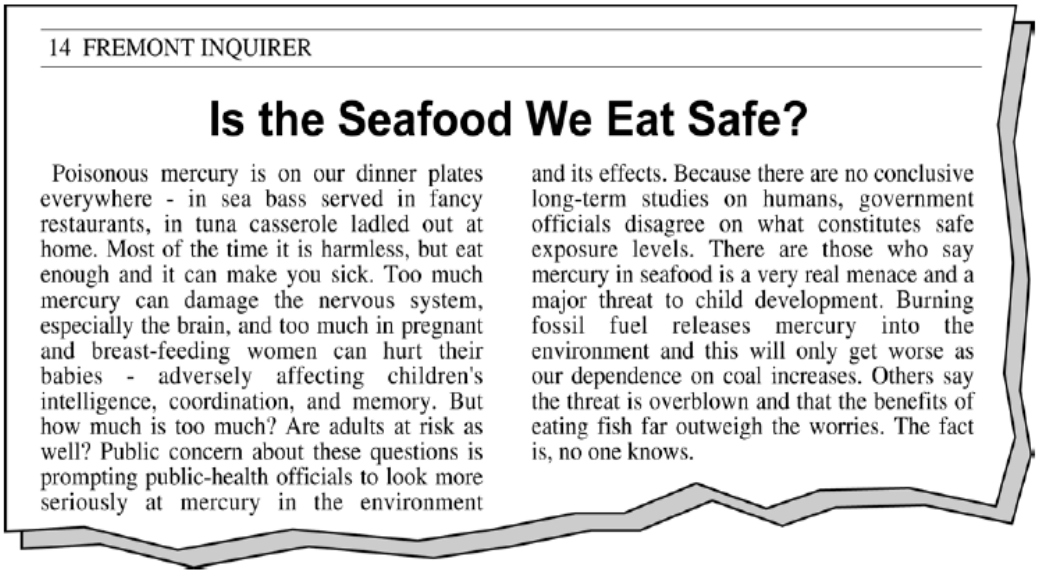
UNIT 8 ASSIGNMENTS:
EXAM: A-DAY 3/19 B-DAY 3/20
Be sure to answer all questions in complete sentences!

Chapter 14: Due A-day: 2/26 B-day 2/27

1. What four types of health hazards does research in the field of environmental health encompass?
2. In what way is disease the greatest hazard that people face?
3. What kinds of interrelationships must environmental health experts study to learn how diseases affect human health?
4. Where does most exposure to lead, asbestos, radon, and PBDEs occur? How has each exposure been addressed?
5. When did concern over the effects of pesticides start to grow in the United States?
6. Describe the argument presented by Rachel Carson in *Silent Spring*.
7. What policy resulted from the book's publication? Is DDT still used?
8. List and describe the six types or general categories of toxicants described in this chapter.
9. How do toxicants travel through the environment, and where are they most likely found?
10. What are the lifespans of toxic agents?
11. Describe the processes of bioaccumulation.
12. Describe the processes of biomagnification.
13. What are epidemiological studies, and how are they most often conducted?
14. Why are animals used in laboratory experiments in toxicology?
15. Explain the dose-response curve.
16. Why is a substance with a high LD_{50} considered safer than one with a low LD_{50}?
17. What factors may affect an individual's response to a toxic substance?
18. Why is chronic exposure to toxic agents often more difficult to measure and diagnose than acute exposure?
19. What are synergistic effects and why are they difficult to measure and diagnose?
20. How do scientists identify and assess risks from substances or activities that may pose health threats?

FRQ 1: Due A-day 3/4 B-day 3/5

Read the editorial below and answer the questions that follow.



14 FREMONT INQUIRER

Is the Seafood We Eat Safe?

Poisonous mercury is on our dinner plates everywhere - in sea bass served in fancy restaurants, in tuna casserole ladled out at home. Most of the time it is harmless, but eat enough and it can make you sick. Too much mercury can damage the nervous system, especially the brain, and too much in pregnant and breast-feeding women can hurt their babies - adversely affecting children's intelligence, coordination, and memory. But how much is too much? Are adults at risk as well? Public concern about these questions is prompting public-health officials to look more seriously at mercury in the environment and its effects. Because there are no conclusive long-term studies on humans, government officials disagree on what constitutes safe exposure levels. There are those who say mercury in seafood is a very real menace and a major threat to child development. Burning fossil fuel releases mercury into the environment and this will only get worse as our dependence on coal increases. Others say the threat is overblown and that the benefits of eating fish far outweigh the worries. The fact is, no one knows.

(a) On the basis of the article above, indicate one human activity that releases mercury into the environment. Describe how mercury is transported from that source and enters aquatic systems, often hundreds of miles away.

(b) Describe TWO ways that the amount of mercury released into the environment from the source in part (a) could be reduced.

(c) Explain why there are greater health risks associated with eating large predatory fish, such as tuna and sea bass, than from eating small non-predatory fish.

(d) Identify a toxic metal other than mercury that has a negative impact on human health and describe how it is introduced into the environment. Describe an acute sub lethal effect on humans that results from exposure to this metal.

Chapter 22: Due A-day 3/8 B-day 3/11

1. Describe five major methods of managing waste.
2. Why do we practice waste management?
3. Why have some people labeled the United States "the throwaway society"?
4. How much waste do Americans generate and how does this amount compare to that of people from other countries?
5. Name several guidelines by which sanitary landfills are regulated.
6. Describe three problems with landfills.
7. Describe the process of incineration or combustion.
8. What happens to the resulting ash?
9. What is one drawback of incineration?
10. What is composting and how does it help reduce input to the waste stream?
11. What are the three elements of sustainable process of recycling?
12. What are the goals of industrial ecology?
13. What four criteria are used to define hazardous waste?
14. Why are heavy metals and synthetic organic compounds particularly hazardous?
15. What are the largest sources of hazardous waste?
16. Describe three ways to dispose of hazardous waste.
17. What is the Superfund program and how does it work?
18. Name and describe two well-publicized events that spurred the creation of the Superfund legislation.
19. Can manufacturers and businesses benefit from source reduction if consumers were to buy fewer products as a result? How?
20. Given what you know about industrial ecology, what do you think the future of sustainable manufacturing may look like?

FRQ 2: Due A-day 3/12 B-day 3/13

With approximately 300 million people, the United States produces over 200 million tons of trash each year. There has been an overall trend in recycling products in the last three decades. The table below gives the total amount generated, recycled, and discarded for several products generated in the municipal waste stream.

Products Generated in the Municipal Waste Stream
(In thousands of U.S. tons)

Product	Generated	Recovered (Recycled)	Discarded
Paper	39,120	17,860	21,260
Cardboard	38,290	25,080	13,210
Plastic (containers and packaging)	13,010	1,730	11,280

(a) (i) According to the estimates given, how many pounds of trash in one year does the average U.S. citizen produce? (I U.S. ton = 2000 pounds)
(ii) How many pounds of trash does a U.S. citizen produce each day?
(iii) If 140 million tons of waste ends up in the landfill and the rest is recycled, what percent of our products are being recycled?

(b) Identify which product has the lowest percentage of recovery. Describe one benefit that would be gained from increasing recycling rates of this product.

(c) Discuss a method of waste disposal for products that enter the municipal waste stream but are NOT recycled.

(d) From the method of waste disposal you choose in part (c), explain TWO environmental consequences associated with that method.