Agenda 8/21

- Warm up & Gather Data on Salinization Lab
- Go over Experimental Design.
- Sort through Newspaper Articles: 7 Topics/ Web Site
- Tragedy of the Commons
- Review Article: The worst mistake humans ever made.
- Format of the AP Test.
- Math: V2 – V1/ V1 x 100 & Rule of 70, Doubling time.
- HW – Study Guide. Quiz tomorrow. Study scientific method, Atmosphere, know each of the layers, what the [ ] of gases are.
- Get books.

APES 8/22

Obj. TSW develop a focused understanding of the 7 topics in APES, Explain the Tragedy of the Commons, and discuss the article. P. 8 NB

1. Explain an open system & closed system with respect to matter & energy on Earth.
2. List the steps to the Scientific Method. Why is the control important?
3. What are the approximate concentrations of the atmosphere?

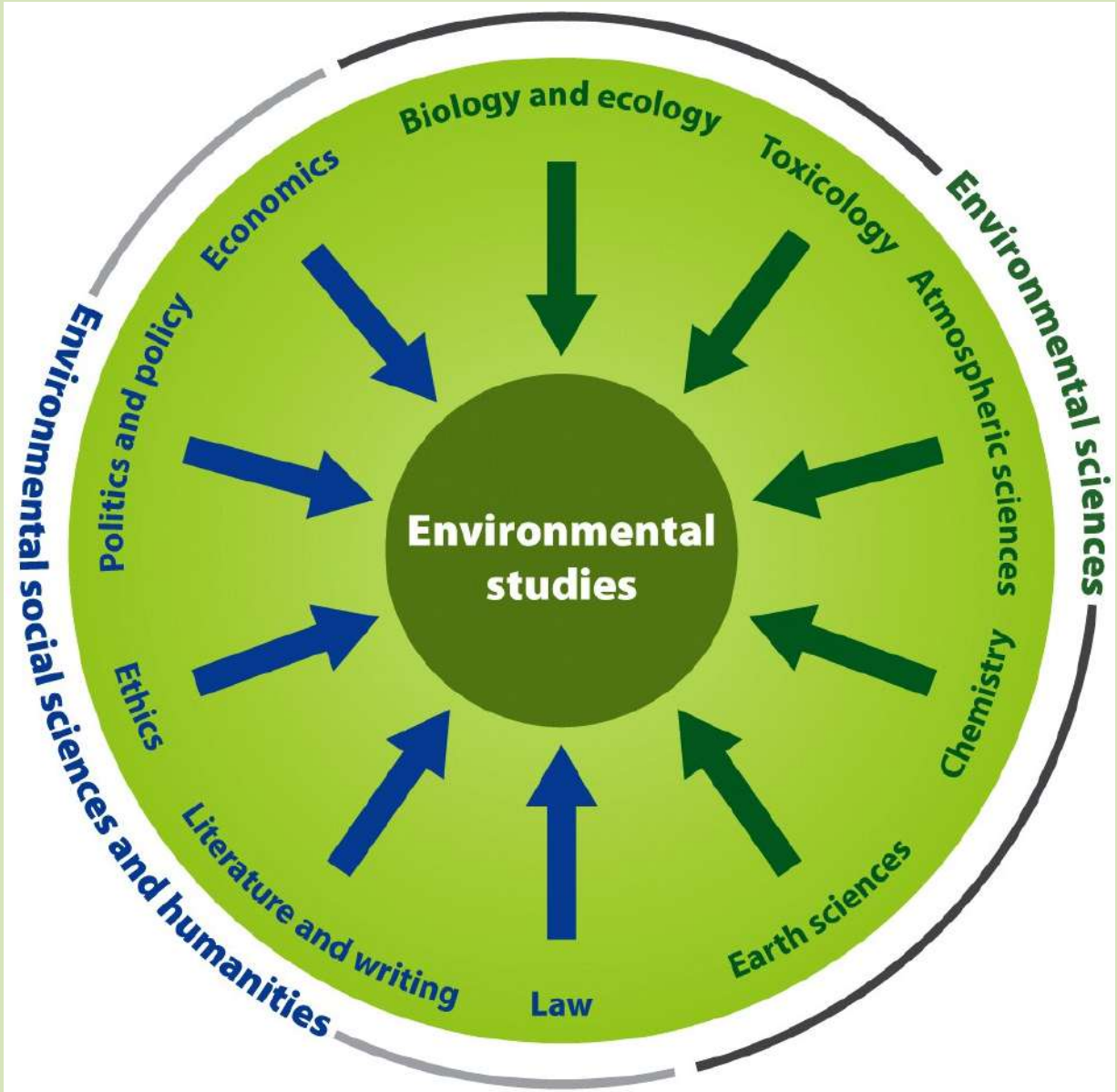


Figure 1.1
Environmental Science

Figure 1.2
Environmental Science

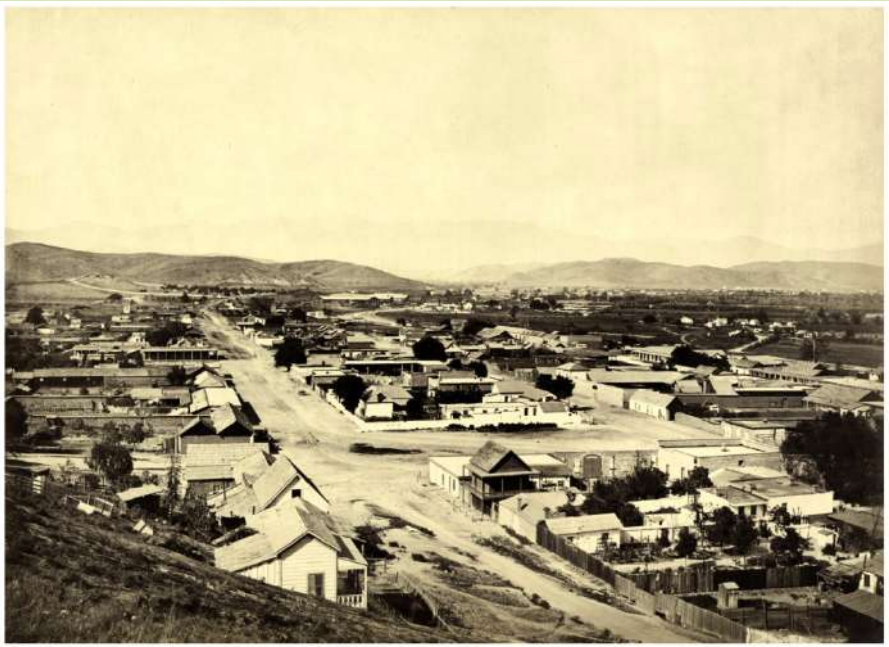


Figure 1.3a
Environmental Science

Figure 1.3b
Environmental Science

TABLE 1.2 Five key global environmental indicators

Indicator	Recent trend	Outlook for future	Overall impact on environmental quality
Biological diversity	Large number of extinctions, extinction rate increasing	Extinctions will continue	Negative
Food production	Per capita production possibly	Unclear leveling off	May affect the number of people Earth can support
Average global surface temperature and CO_2 concentrations	CO_2 concentrations and temperatures increasing	Probably will continue to increase, at least in the short term	Effects are uncertain and varied, but probably detrimental
Human population	Still increasing, but growth rate slowing	Population leveling off Resource consumption rates are also a factor	Negative
Resource depletion	Many resources are being depleted at rapid rates. But human ingenuity frequently develops "new" resources, and efficiency of resource use is increasing in many cases	Unknown	Increased use of most resources has negative effects

Table 1.2
Environmental Science

Average Global Surface Temperatures and Carbon Dioxide Concentrations

- Greenhouse gases- gases in our planets atmosphere that act like a blanket, trapping heat near Earth's surface.
- The most important greenhouse gas is carbon dioxide.
- Anthropogenic- caused by human activities.

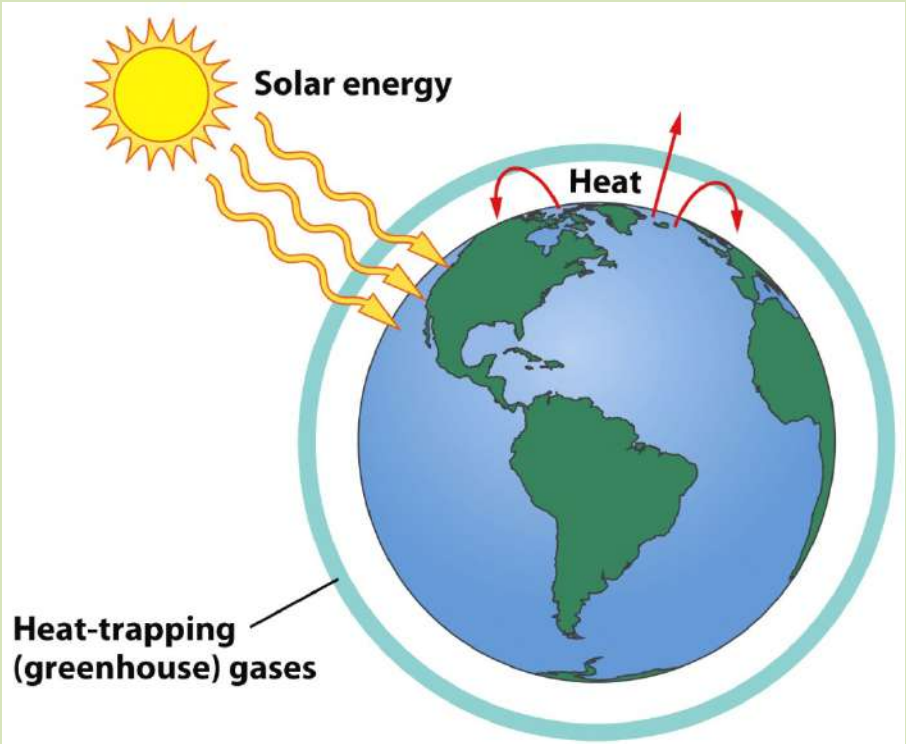


Figure 1.7
Environmental Science

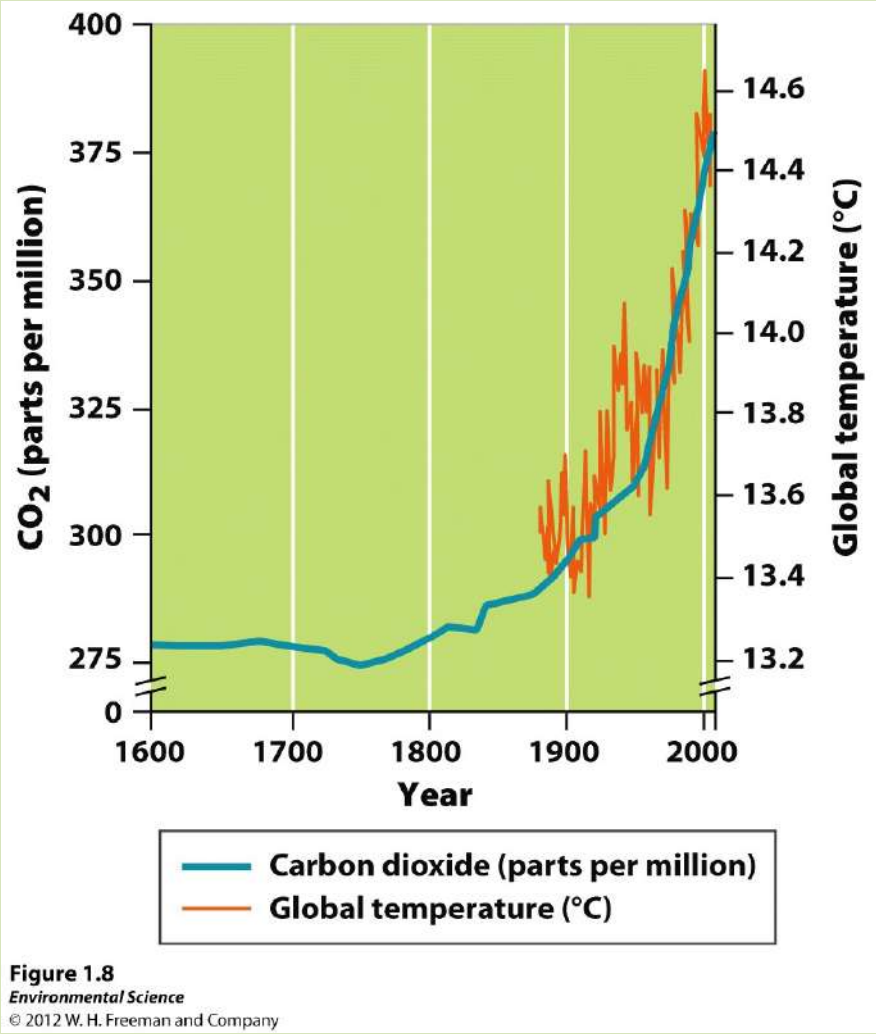
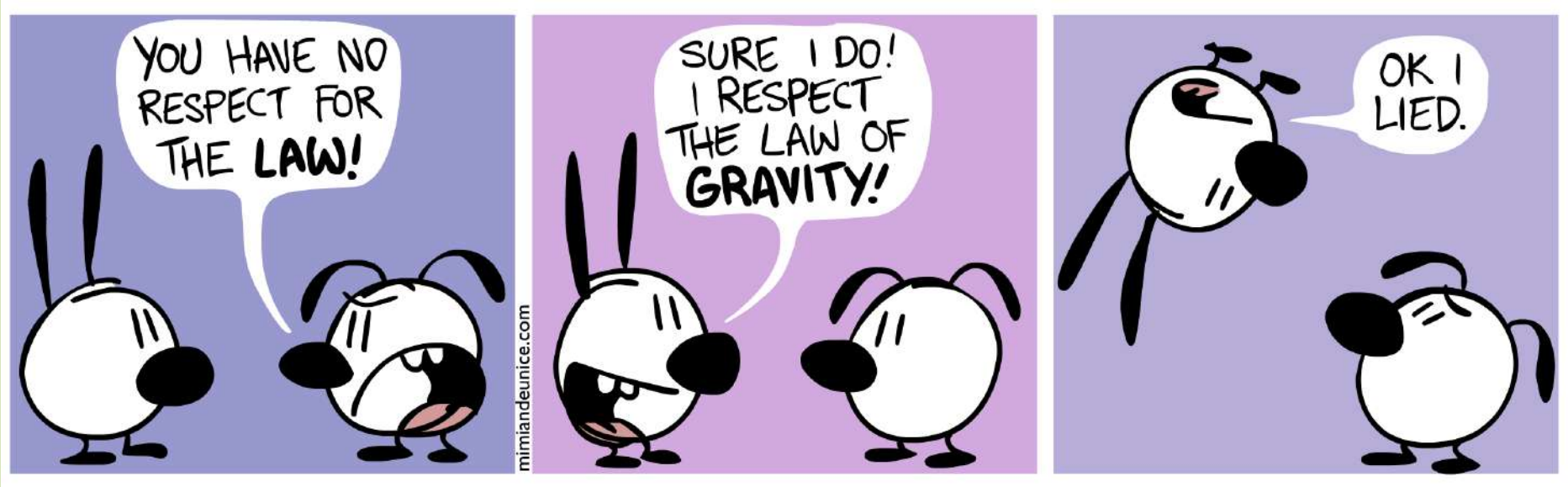


Figure 1.8
Environmental Science

Earth

- Closed system: Matter does not leave. Exception: Asteroid hitting the Earth.
- Open system: Energy can come & go. Light Energy, Heat Energy are absorbed by the planet & escape the planet.

- Matter- anything that occupies space and has mass.
- Mass- a measure of the amount of matter an object contains.
- Weight- the force that results from the action of gravity on mass.



- Open system- exchanges of matter or energy occur across system boundaries.

- Closed system- matter and energy exchanges across system boundaries do not occur.

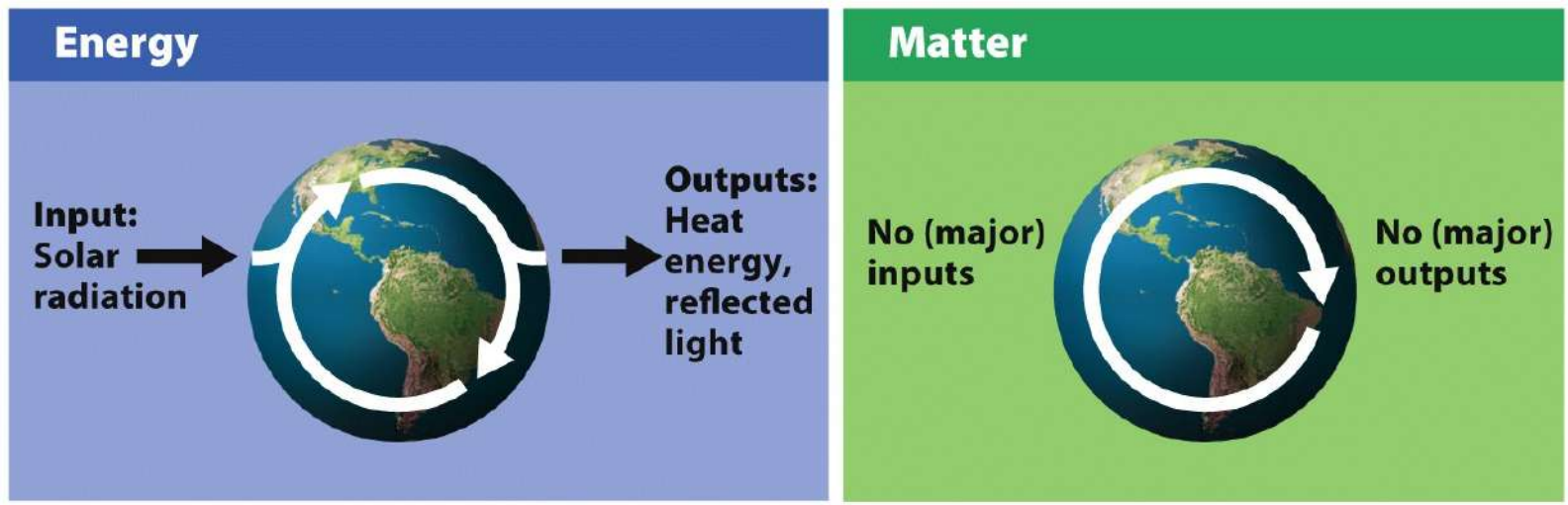


Figure 2.18
Environmental Science

Tragedy of the Commons – Easter Island

Figure 1.11
Environmental Science

What were some of the ramifications of “Tragedy of the Commons” on Easter Island?

Figure 1.9
Environmental Science

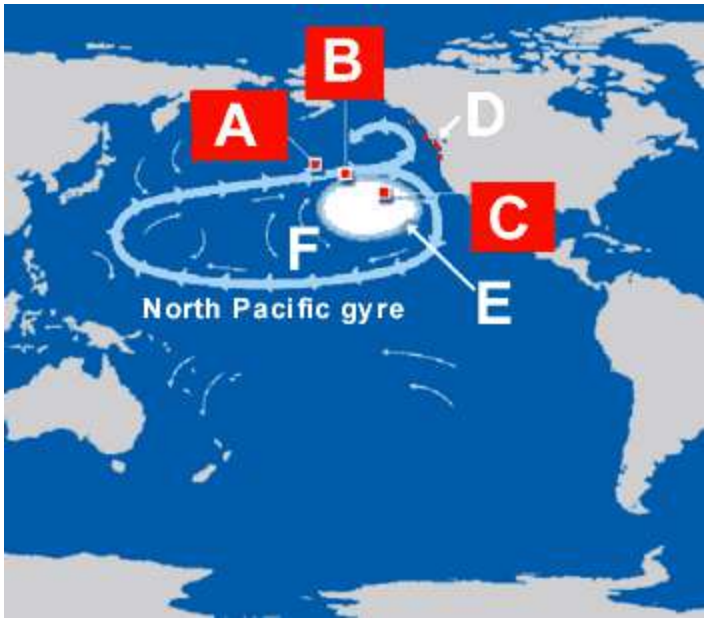
Resource Depletion
How does Easter Island relate to today?

Where do we see “Logic of the Commons” today?

How does the *“Tragedy of the Commons”* relate to the article you read about the *“Worst mistake in the History of the Human Race”?*

How is this an example of “Tragedy of the commons”?

- Great Pacific Garbage Patch



Biological molecules and cells

- Inorganic compounds- compounds that do not contain carbon or do contain carbon, but only carbon bound to elements other than hydrogen.
  - ex. NH_3, NaCl, H_2O, and CO_2
- Organic compounds- compounds that have carbon-carbon and carbon-hydrogen bonds.