

APES Summer Work 2023

Hello and welcome to A.P. Environmental Science, affectionately referred to as APES. For the summer assignment you will be watching several videos and answering questions on those videos. The videos are a combination of a review of some important topics in science and an introduction to AP Environmental Science. There is a lot of information in this course. Therefore you need to keep up with the work and be prepared in September. Have a great summer!

A. Video #1: [Environmental Systems](#)

Watch the above video and answer the following questions:

1. Discuss the differences between an open and a closed system, and how this relates to matter and energy.
2. Discuss the 1st and 2nd Laws of Thermodynamics. Why are these important in the study of environmental science?
3. Explain the three energy units discussed in the video.
4. What is systems analysis?
5. Explain the concept of negative and positive feedback loops. (List an example of each presented in the video.)

B. Video #2: [Water- A Polar Molecule](#)

Watch the above video and answer the following questions:

1. Explain the concept of electronegativity and the electronegativity trends on the periodic table.
2. What makes water a polar molecule?
3. Explain hydrogen bonding.
4. Explain the properties of water presented in the video:
 - a. Cohesion

- b. Capillary action
- c. High specific heat
- d. Ice floating
- e. Good solvent

C. Video #3: [Acids, Bases, and pH](#)

Watch the above video and answer the following questions:

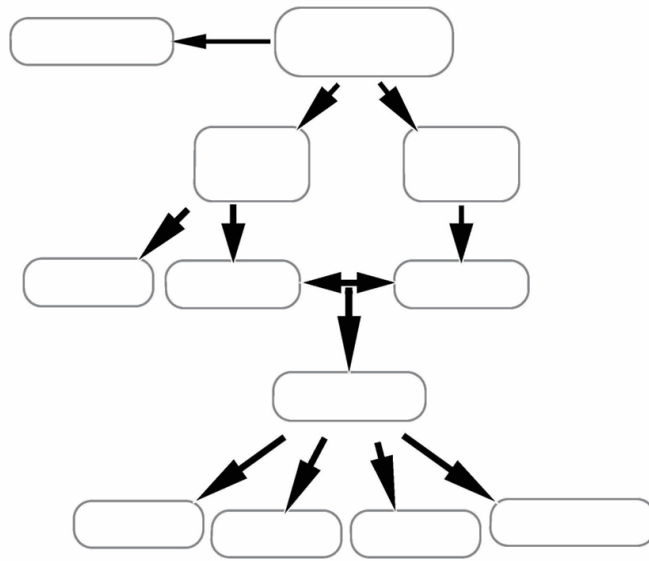
1. Explain how hydronium and hydroxide ions are formed. What is the chemical formula and charge of each ion?
2. How is pH calculated?
3. How is the pH of a substance related to the hydrogen ion concentration? (This is an important concept to be careful with!)
4. Why is understanding pH important in the study of the environment?

D. Video #4: [Bozeman Science Introduction to Environmental Science](#)

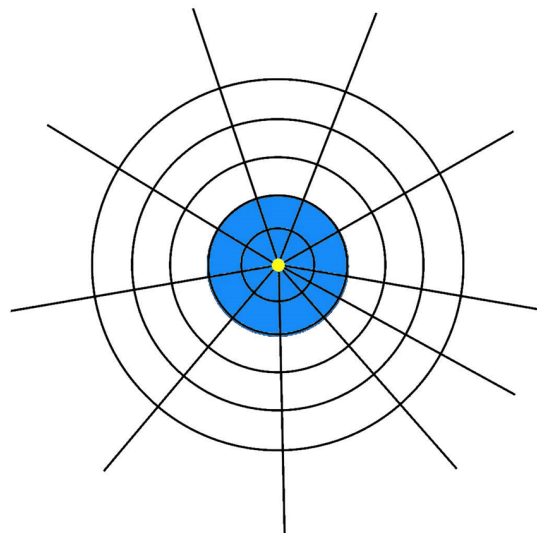
Watch the video above and answer the following questions:

In the 2019/2020 school year the Exam format will be changing. Students should not watch the video past 7:30 into the recording.

1. AP Environmental science is the study of the _____ between the _____ and the _____.
2. Listen to Mr. Anderson describe the various parts of the concept map, and pause after he reveals a new word, and fill in that word.



3. **Describe** what happened on Easter Island.
4. **Explain** the difference between Environmental Science vs Environmentalism.
5. **Analyze** why the t-shirts from the 1980s that said 'Save Our Planet' is a silly slogan.
6. Fill in the following Planetary Boundaries chart and color in those boundaries that we have already passed the capacity of Earth for.



What does the yellow dot in the center represent?

What does the blue circle represent?

7. **Analyze** Why do some of the Planetary Boundaries from #6 have no red filled in?
8. **Describe** what needs to drive sustainability.
9. **List** the 7 science practices.
10. **Describe** what happened to the Deepwater Horizon.