

APES SUMMER ASSIGNMENT

THE TRAGEDY OF THE COMMONS

These assignments are due NO LATER THAN Friday of the first week of school at 2:30 pm.

Students will be assessed on this information within the first week of classes.

Part A: Reading/Reflection assignment

Read “Tragedy of the Commons” (1968) by Garrett Hardin and “Revisiting the commons: local lessons, global challenges” (1999) by Elinor Ostrom, et al. Use these scholarly peer-reviewed articles to answer the following questions on a separate sheet of paper. Make sure you know what a peer reviewed article is. All answers should be well thought out and explained, in full complete sentences as expected in an AP class.

1. What are “commons” or “common-pool” resources?
2. Identify three examples of common-pool resources from the readings.
3. Explain what is potentially “tragic” about them?
4. Compare and contrast different approaches to managing “common pool” resources. Include arguments for and against each approach.

Use links below to view the full text versions of these two articles:

[Hardin,G. “The Tragedy of the Commons” \(1968\) Science 162, 1243](#)

[Ostrom,et al. “Revisiting the commons: local lessons, global challenges” \(1999\)Science 284. 278](#)

Part B; Prerequisite Basic Mathematic Skills for AP Environmental Science

Complete the separate handout/worksheet “The BEST APES Math Review EVER”. Follow all instructions closely. Put answers on a separate sheet of paper. Make sure you show your work and it helps if you circle your answer.

Part C: Prerequisite Basic Scientific Concepts for AP Environmental Science

You should already be familiar with every term/concept from Biology, Chemistry, and Earth Science on the list below.

Copy the following words and their definitions on 3x5 or 4x6 index cards.

1. elements
2. compounds

3. molecules
4. atoms
5. ions
6. nucleus (2 meanings)
7. protons
8. electrons
9. neutrons
10. organic vs. inorganic
11. natural vs. synthetic
12. electromagnetic radiation
13. energy vs. matter
14. kinetic vs. potential energy
15. radioactive decay
16. half life
17. law of conservation of matter
18. 1st law of thermodynamics
19. 2nd law of thermodynamics
20. entropy
21. metabolism
22. mutation
23. organism
24. species
25. population
26. community
27. producers/autotrophs
28. consumer/heterotrophs
29. photosynthesis (know the balanced equation)
30. cellular respiration (know the balanced equation)
31. aerobic
32. anaerobic
33. adaptation
34. trait
35. gene
36. chromosome
37. gene pool
38. evolution
39. extinction
40. core
41. mantle
42. crust
43. fault
44. weathering
45. erosion
46. rocks vs. minerals

(you can do multiple chemicals on one card, no need to do one per card)

47. the full name of each of these chemical abbreviations: C, CO₂, CO, H₂CO₃, C₆H₁₂O₆, CH₄, CaCO₃, H⁺, H₂, H₂O, N, N₂, NO, NO₂, N₂O, NO₂⁻, NO₃⁻, NH₃, NH₄⁺, O, O₂, O₃, P, PO₄⁻³, S, SO₂, SO₃, SO₄⁻², H₂S, Cl, K, Mg, Ca, NaCl, Fe, Zn, Pb, Hg, Al, As, Rn, U

Any questions please email me. I will be checking my email at least one a week during the summer.

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