

## Preparing for FRQ's

### General Rules

- What are the requirements for the question – list, describe, cause and effect...
- If it asks anything besides identify, you should write at least two sentences. One stating your clear, specific answer and the second providing supporting evidence, examples or a detailed description.
- Know the difference between environmental, social, political and economic effects.
- How many examples are requested? If the question asks for two, only the first two will be graded
- If you are not sure about the meaning of a word in the question, figure out what it means by pulling apart the syllables (anthropogenic – anthro (man) genic (origin or made) is man-made)
- Start each question with whether it is A, B, C,... and leave a two to three line break between each section so you can come back later to add additional information
- Do not rewrite the question; it is a waste of time for you and the reader
- If you find yourself writing something vague, follow it up with a specific example. (Name a specific chemical that will cause the pollution and explain its impacts, name a specific specie or type of species that would be impacted and explain how, name a specific law or specific possible law that will illustrate whatever you are talking about, etc.)
- If a fourth grader could say it, it is too vague.
- Be careful with absolutes, will it really kill all the animals? Will the entire ecosystem be harmed?
- Often wrong but never in doubt: even if you are making it up, make it sound good and confident. (Be specific. You might be right, but you will not get any credit if you are not specific enough. No "maybe" or "might" unless there is actual scientific uncertainty.)

### Non-Math Questions

- Make sure the answers are legible
- Always use complete sentences.
- Each answer should be organized, comprehensive, and in prose form; outline form is not acceptable.
- Drawings are acceptable only if there is a written explanation
- No eco-babble, flowery, or vague phrases

### Math-Based Questions

- Do not write anything in the green book so all your work will be in the answer document
- Even if you can do the math in your head, show each step
- Include units in each step to insure it is correct and in the answer
- Does the answer make sense? A monthly light bill for a family should not be in the trillions of dollars.
- Use dimensional analysis when possible (which is most of the time)!
- Review your scientific notation skills and utilize scientific notation on the exam. The whole purpose of scientific notation is to simplify working with very small or very large numbers.

There are several strategies you can use to help boost your score on the Free Response section of the AP Environmental Science exam. One of those strategies is to avoid the use of vague and “flowery” terms and phrases. These terms and phrases may sound descriptive, but they frequently say little and provide none of the detail needed to earn credit. To avoid them you should try to explain yourself as best as possible using more detail.

**The following is a listing of these terms and phrases to try to avoid:**

<ol style="list-style-type: none"><li>1. “bad for the environment / planet”</li><li>2. "cause environmental degradation"</li><li>3. "cause global warming and pollution"</li><li>4. “change” (Instead of specifying increase or decrease.)</li><li>5. “destroy the environment”</li><li>6. “disrupt the environment”</li><li>7. “disturb the environment”</li><li>8. “ecofriendly”</li><li>9. “good for the environment”</li><li>10. “greener”</li><li>11. “global solution”</li><li>12. “global catastrophe”</li><li>13. “global cooperation”</li><li>14. “harm the environment”</li><li>15. "harmful / dangerous chemicals" (Without specifying.)</li><li>16. "help keep the habitat cleaner"</li><li>17. “human footprint”</li><li>18. “human impact”</li><li>19. “incentivize the system”</li><li>20. "kill all the plants/animals/ wildlife”</li></ol>	<ol style="list-style-type: none"><li>21. "make it illegal" or "the water law" or "the air law" (Without identifying relevant laws.)</li><li>22. "make it more / less expensive" (When referring to incentives.)</li><li>23. “mother nature “</li><li>24. “overconsumption of natural resources”</li><li>25. “pollute the environment”</li><li>26. "pollute the water / air / soil" (Without specifying.)</li><li>27. “restore the environment”</li><li>28. “repair the damage”</li><li>29. “save the Earth”</li><li>30. “save the planet”</li><li>31. "stop global warming"</li><li>32. “sustainable” (Without elaboration.)</li><li>33. “toxins”, “pollution”, “chemicals” &amp; “health effects” (Without specifying.)</li><li>34. “_____ the habitat” (impact, change, alter)</li><li>35. “_____ the ecology” (destroy, restore, maintain, support, harm, compromise, reinvent...)</li></ol>
---	--

## Weak vs Strong Phrases in APES FRQs

**Weak:** “Acid deposition hurts forests.”

**Strong:** “Acid deposition can hurt forests in several ways. One way is by reducing the topsoil’s ability to retain vital nutrients such as calcium, magnesium and potassium which are needed by trees in order to promote natural growth.”

**Weak:** “Runoff from farms can reduce water quality and harm the environment.”

**Strong:** “Runoff from farms can reduce surface water quality by introducing nutrients such as nitrates and phosphates. These compounds promote algae growth which can reduce water clarity. Further, when the algae die their decomposition by aerobic bacteria can also reduce dissolved oxygen levels since aerobic bacteria uses oxygen while decomposing organic matter.”

**Weak:** “The pollution from coal power plants causes a lot of environmental degradation.”

**Strong:** “The air pollution from coal power plants includes nitrogen oxides, sulfur oxides and mercury which have been linked to several environmental problems including acid deposition and mercury contamination of surface water.”

**Weak:** “Garbage incinerators cause a lot of air pollution.”

**Strong:** “Garbage incinerators generate a variety of different air pollutants including carbon dioxide (CO<sub>2</sub>), dioxin, particulate matter (PM), heavy metals and sulfur oxides.”

### Now its your turn:

1. Take this weak statement: “High levels of poverty are bad for the planet.”

And make it stronger:

2. Take this weak statement: “Mercury contamination in food can hurt children.”

And make it stronger:

3. Take this weak statement: “Automobiles make a lot of air pollution which can disrupt the environment.”

And make it stronger: