

AP Biology
Summer Assignment

In order to introduce you to some of the topics we will be covering in depth in AP Biology, you will be exploring how they play out in current events. From the most menial everyday activity to the most advanced research, science plays an important part in our technology, culture and politics. Hopefully, with this assignment you will be able to appreciate how vital its role is.

Over the course of the summer, you will collect **ten (10)** current event articles that address topics from the following list:

1. **Macromolecules** (Carbohydrates, Lipids, Proteins) - These are the building blocks of our bodies. This topic would include articles about things like nutrition, different diets, protein deficiencies, and good vs. bad cholesterol.
2. **Enzymes** - These specialized proteins catalyze the reactions in our body and control our metabolism.
3. **The Cell Cycle** - Controls cell division, both mitosis and meiosis. This topic would lend itself well to articles about cancer, since the cell cycle is what is "broken" in cancer cells.
4. **Genetics and Inheritance** - This includes genetic traits and how they are inherited by offspring. Articles could be about genetic disorders or the human genome.
5. **Bacteria and/or Viruses** - There is lots of research about diseases and their spread. This topic would include articles about the spread of disease, vaccinations, and antibiotic-resistant bacteria.
6. **DNA Technology and Genomics** - This topic would include any articles about cloning, stem cell research, the genetics behind different diseases and gene therapy.
7. **Plants and/or Plant Reproduction** - This topic can include articles about anything from plant reproduction to plant diversity or plant ecology.
8. **Invertebrates** - Invertebrates include animals like sponges, jellyfish, mollusks, worms, insects, crustaceans, arachnids, and starfish. Take your pick!
9. **Non-Human Vertebrates** - This topic would include articles about fish, reptiles, amphibians, birds, or non-human mammals.
10. **Hormones and/or Endocrine System** - Examples of hormones include testosterone, estrogen, insulin and adrenaline. This can also include articles about the pancreas, hypothalamus, thyroid and other endocrine glands.
11. **Nervous System** - The nervous system includes the brain, spinal cord and nerves. Special cells called neurons transmit electrical signals to and from the brain. This topic may include articles about diseases like Parkinson's and MS, the inner workings of the brain, or spinal cord injuries.
12. **Ecosystems** - This topic can include articles about the ecology of any ecosystem, including forest, wetland, lake, ocean, tundra, and rainforest.
13. **Conservation Biology and/or Restoration Ecology** - These branches of ecology include conserving biodiversity, protecting critical habitats and restoring degraded ecosystems. This is a big topic right now, especially with the oil spill in the Gulf.

You may need to do a little research into the topics so that you know what areas they each cover. I tried to give you some ideas, but each topic can go in many directions, so increase your understanding accordingly. After some preliminary research, you can start to look for an article from a periodical that addresses an aspect of the topic at hand.

Follow these guidelines when finding an article:

- The article must be from a periodical (magazine or newspaper) whether it online or in paper form.
- The article must have a title, an author, and a date of publication.

Cite the article as follows:

Author. (Year, Month Day). Title of article. *Title of periodical*. Date accessed (if online article).

For each article, complete the following:

- A full citation (as described above). There is no need to print out or cut out the article if you provide a full citation.
- Write a one or two-paragraph summary of the article. You should include the main idea of the article and the major supporting points. Write in complete sentences and with correct grammar.
- Imagine you were able to interview the author of the article, or someone interviewed or quoted in the article and formulate three questions you would like to ask.
 - o One question should be a comprehension question. This would include questions about things that you didn't understand in the article or things that need more clarification.
 - o The other two questions should be more open-ended and analytical in nature. Ask questions about the implications and broader impacts of this article. Your questions might be about the next step in the research. Maybe you want to know more about the social and political impacts of the topic. Maybe there are ethics that you want to explore or far-reaching ecological impacts to discover. Make sure that your questions are unique to each article. They should show me that you read and thought about the topics addressed in the article.

This project is due on the first day of school. No grace period will be given. Whether or not you turn in this assignment will determine whether or not you will continue to be enrolled in the AP Biology course.