

## Possible Essay topics in Science for the writing assessment in the College Access Study

These are all general science topics taken from the California Investigation and Experimentation Standards. These 14 topics are 10% of all California State Science Standards Tests.

### **Topic One: Standard I&E 1b: Identify and communicate sources of unavoidable experimental error.**

Human scientific activity is the pursuit of fact. Still there are events we cannot control or predict. These events have influence on scientific endeavors. Write an essay in which you identify something that is beyond our control, and discuss how it might affect scientific studies

### **Topic Two: Standard I&E 1d: Formulate explanations by using logic and evidence**

The scientific method is critical to scientific study. In an essay, discuss the possible use of the scientific method in everyday life and how it might be important.

### **Topic Three: Standard I&E 1f: Distinguish between hypothesis and theory as scientific terms**

The scientific method starts with identifying a problem and making a hypothesis **or** suggestion. A Scientific Theory is a more complex explanation of natural phenomena. In an essay, explain the use of each and how they are different. [Will the students know these terms when they have to write these essays? Actually I have my students write while we are reviewing these terms the first week of school. This is an important standard and too often the confusion between these two terms is over looked]

### **Topic Four: Standard I&E 1k: Recognize the cumulative nature of scientific evidence.**

Scientists learn from the work of other scientists. In an essay, show how this works. (possible examples include: Plate tectonics, heliocentric vs geocentric solar system, the development of the periodic table, Einstein's accomplishments and the theory of evolution)

### **Topic Five: Standard I&E 1g: Recognize the usefulness and limitations of models and theories as scientific representations of reality**

Every evening during the news broadcast, the meteorologist makes predictions of the next day's weather. Some scientists are claiming that the world will be many degrees warmer in the next few decades. Both of these are examples of how computer models are used to understand our world. In an essay, determine the usefulness of these models and consider their limitations and the consequences of their use. [This seems more difficult than the others. Is it? Yes it is but it is a thinking question and a good one for science students]

### **Topic Six: Standard I&E 1l: analyze situations and solve problems that require combining and applying concepts from more than one area of science.**

1. Our world is facing an energy crisis. We are currently dependent on fossil fuels. In an essay, provide a possible solution for this crisis and explain how we can achieve this goal.
2. Global warming is one of the current environmental issues facing our world. The media claims that this is all due to human activity. In an essay, discuss how humans contribute to global warming and how we can reduce our impact on our environment.