SCIENCE DEPARTMENT

Mission Statement

The Brighton High School Science Department promotes the following scientific habits of mind. It is our goal that each Brighton student develops these shared values, attitudes, skills, and scientific knowledge.

Scientific Knowledge

1. To develop a knowledge base in life and physical sciences through the study of Biology, Chemistry, Earth Science, and Physics; to appreciate the connections between these disciplines; and to demonstrate the ability to apply that knowledge to their everyday lives through a variety of opportunities to include extracurricular activities.

Shared Values and Attitudes

2. To internalize values inherent in the practice of science and technology; to develop respect for the use of evidence and logical reasoning in making arguments; honesty, curiosity, and openness to new ideas; and to foster skepticism in evaluating claims and arguments.

3. To develop informed, balanced beliefs about the social benefits of the scientific endeavors and beliefs based on the ways in which people use knowledge and technologies; to realize the need to continually pursue knowledge and develop new technologies.

4. To develop a positive attitude toward being able to understand science and mathematics, to be able to effectively review, summarize and critique scientific literature; to deal with quantitative matters, think critically, and use calculators and computers; to analyze and solve problems.

5. To develop a cooperative work ethic; to be an effective and valuable member of a team to accomplish the task at hand.

Scientific Skills

6. To develop computational skills, including the ability to make certain mental calculations rapidly and accurately; to perform calculations using paper and pencil, calculators and computers; to estimate approximate answers when appropriate; to check on the reasonableness of other computations; to acquire the ability to use a computer spreadsheet to record, manipulate and graph data.

7. To develop skills to design valid experiments to test or discover fundamental relationships; to pose a reasonable hypothesis; to develop manipulation and observation skills, to use instruments to make accurate measurements; to be able to gather and organize information in tables and simple diagrams; to be able to use a computer spreadsheet to record and manipulate and graph data; to be able to analyze simple graphs and draw valid meaning and conclusions from their data; and to realize uncertainties and error inherent with experimental design.

8. To develop communication skills, including the ability to express basic ideas, instructions, and information clearly both orally and in writing; to demonstrate their understanding through a variety of authentic assessments; to be able to gather information from a variety of sources including the Internet.

9. To develop critical response skills that prepare people to carefully judge the assertions made by advertisers, public figures, organizations, and the entertainment and news media; to subject their own claims to the same kind of scrutiny so as to become less bound by prejudice and rationalization.

10. To develop computer skills in a variety of applications including word processing, graphic design, spreadsheets, data acquisition, presentation software, simulation modeling, web page production, and Internet use.

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The Science Department offers a wide variety of courses to students of varying interest and ability levels. The Regents sequence consists of earth science, biology, chemistry, and physics. Principles level courses in each subject area are also available. These principles classes have smaller class sizes enabling the teacher to provide more individual assistance. Advanced Placement courses in biology, chemistry, and physics are also available; thus, a student may earn college credit and/or advanced standing while still in high school.

LABORATORY WORK

All of the science courses involve laboratory work. Admission to the final examination is contingent upon the satisfactory completion of a required minimum number of these labs.