



General Science II Home Teacher Program
ACADEMIC INSTRUCTIONAL LIBRARY



GENERAL SCIENCE II ONLINE

COURSE OVERVIEW

General Science II is a basic intermediate course (8th Grade) intended to expose students to the designs and patterns in God's physical universe. This course expands on the Science 600 and General Science I course, providing a set of basic scientific skills and a broad survey of the major areas of science. Some of the areas covered in General Science II include the history of science, structure and properties of matter, health and nutrition, types of energy, electricity and magnetism, work, energy, forces, simple machines, balance in nature, natural cycles and resources.

HOME TEACHER LABS

Labs for the Homeschool Edition program are those contained in the Ignitia Online Curriculum. No expensive equipment is required with only several requiring the purchase of small items or household items to conduct the experiments.

It is always advisable to be familiar with your surroundings and wear protective equipment when conducting any experiment. Never allow yourself to be distracted when completing an experiment.

Unit 1 - SCIENCE AND SOCIETY

1. **Course Overview**
2. **Science Today**
3. **Post-Renaissance Science**

4. **Essay: Mendel - *Write a 500 word, well-organized essay describing Gregor Mendel, his discoveries, and the impact of those discoveries. Gregor Mendel was an Austrian monk and is considered the father of genetics. Many historians have described Gregor Mendel as an obscure monk who stumbled onto the nature of hereditary mechanisms while tending his garden between morning and evening prayers. However, he was clearly an alert and practical scientist who entered the monastery as part of his academic training as well as in response to his religious convictions. During life prior to joining the monastery, Mendel exhibited an active interest in crop improvements as demonstrated by the many awards he received for developing new varieties of fruit and vegetables. Also, he established thirty-four "pure" strains of peas in his garden in preparation for hybridization experiments. In 1865 he published the results of his seven years of study on cross-breeding of his garden peas.***

5. **Quiz 1**

6. **Today's Scientist**

7. **Quiz 2**

8. **Science and Technology**

9. **Limitations**

10. **Quiz 3**

11. **Test**

12. **Alternate Test**

13. **Reference**

Unit 2 - STRUCTURE OF MATTER (PART 1)

1. **Properties of Matter (1)**

2. **Experiment: Determining Volume**

- 3. Properties of Matter (2)**
- 4. Quiz 1**
- 5. Atoms and Molecules**
- 6. Molecules**
- 7. Quiz 2**
- 8. Elements**
- 9. Compounds**
- 10. Mixtures**
- 11. Quiz 3**
- 12. Test**
- 13. Alternate Test**
- 14. Reference**

Unit 3 - STRUCTURE OF MATTER (PART 2)

- 1. Matter and Change**
- 2. Solutions**
- 3. Chemical Changes**
- 4. Experiment: Forms of Change**
- 5. Nuclear Changes**
- 6. Quiz 1**
- 7. Acids**
- 8. Quiz 2**
- 9. Bases**
- 10. Experiment: Cabbage**
- 11. Quiz 3**

12. Salts
13. Quiz 4
14. Test
15. Alternate Test
16. Reference

Unit 4 – HEALTH AND NUTRITION

1. Foods and Digestion
2. Quiz 1
3. Diet
4. **Experiment: Food Record - *Record your diet for a week utilizing the chart model given in the example. You may make your own chart, but it should keep the records as noted. After every meal or snack, estimate how much of each food group you ate. Keep track of this and enter in the appropriate box. If you have satisfied the recommended amount for all of the food groups, check that day at the end of the chart. Follow the directions given to you in the assignment.***
5. Quiz 2
6. Nutritional Diseases
7. **Essay: Nutrition - *Cover the topic as completely as possible. This essay should be at least 1,000 words. Include a short bibliography. Before you write this essay, read more about earth pollution, food processing, food refining, and so forth. Many books and magazines on these subjects are available.***
8. Quiz 3

9. **Hygiene**
10. **Quiz 4**
11. **Test**
12. **Alternate Test**
13. **Reference**

Unit 5 – ENERGY (PART 1)

1. **Mechanical Energy**
2. **Potential Energy**
3. **Quiz 1**
4. **Other Forms of Energy**
5. **Chemical Energy**
6. **Atomic Energy**
7. **Quiz 2**
8. **Energy Conversion and Entropy**
9. **Quiz 3**
10. **Test**
11. **Alternate Test**
12. **Reference**

Unit 6 – ENERGY (PART 2)

1. **Magnetism**
2. **Electricity and Magnetism**
3. **Quiz 1**
4. **Electricity**
5. **Electrical Circuits**
6. **Quiz 2**
7. **Energy for the Future**
8. **Quiz 3**
9. **Experiment: Hot Dog Cooker**
10. **Test**
11. **Alternate Test**
12. **Reference**

Unit 7 – MACHINES (PART 1)

1. **Distance**
2. **Essay: Scientists - Use outside sources to research one of these Christian scientists: Isaac Newton, Robert Boyle, or Nicolaus Copernicus. The report should be at least four hundred words. Include sections on your subject's life, discoveries, and Christian testimony.**
3. **Measuring Distance**
4. **Quiz 1**
5. **Force**
6. **Force Vectors**
7. **Quiz 2**
8. **Work**

9. **Work and Energy**
10. **Quiz 3**
11. **Test**
12. **Alternate Test**
13. **Reference**

Unit 8 – MACHINES (PART 2)

1. **Friction**
2. **Types of Friction**
3. **Experiment: Friction Investigation**
4. **Quiz 1**
5. **Levers**
6. **Quiz 2**
7. **Wheel and Axle, Pulleys, and Gears**
8. **Quiz 3**
9. **Inclined Plane, Wedge, and Screw**
10. **Quiz 4**
11. **Test**
12. **Alternate Test**
13. **Reference**

Unit 9 - BALANCE IN NATURE

1. **Photosynthesis and Food**
2. **Food**
3. **Quiz 1**
4. **Natural Cycles**
5. **The Water Cycle**
6. **Quiz 2**
7. **Balance and Disruption**
8. **Resources**
9. **Quiz 3**
10. **Test**
11. **Alternate Test**
12. **Reference**

Unit 10- SCIENCE AND TECHNOLOGY

1. **Basic Science**
2. **Characteristics of Matter**
3. **Matter in Change**
4. **Quiz 1**
5. **Energy**
6. **Chemical and Atomic Energy**
7. **Magnetism and Electricity**
8. **Machines at Work**

9. **Quiz 2**
10. **Life Science**
11. **Quiz 3**
12. **Vocations in Science and Technology**
13. **Quiz 4**
14. **Test**
15. **Alternate Test**