



Physical Science - Home Teacher Program

ACADEMIC INSTRUCTIONAL LIBRARY



GENERAL SCIENCE III

COURSE OVERVIEW

General Science III (Physical Science) is a basic intermediate course intended to expose students to the designs and patterns in God's physical universe. This course expands on General Science I and II courses. Some of the areas covered in General Science III include the structure of matter, atomic nuclei and radioactivity, geology, oceanography, astronomy, microbiology, medicine, and science today and in the future.

Students at this level should show development in their ability and understanding of scientific inquiry. Some of the units contain experiments and projects that seek to develop meaning for the student and to engage the student actively.

HOME TEACHER LABS

Labs for the Homeschool Plus 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 - OUR ATOMIC WORLD

1. **Course Overview**
2. **Structure of Matter**
3. **Quiz 1: Structure of Matter**
4. **Radioactivity**
5. **Quiz 2: Radioactivity**
6. **Atomic Nuclei**
7. **Quiz 3: Atomic Nuclei**
8. **Nuclear Energy**
9. **Essay: Reactors** (*Write a 600-word report discussing nuclear reactors. The report should include a description of the way a reactor works, and the theory behind nuclear reactions. Be sure to answer these questions: What are breeder reactors? How are they different from regular nuclear reactors? What are their advantages and disadvantages?*)
10. **Quiz 4: Nuclear Energy**
11. **Applications and Environmental Hazards**
12. **Quiz 5**
13. **Test**
14. **Alternate Test**
15. **Reference**

UNIT 2 - VOLUME, MASS, AND DENSITY

1. **Volume**
2. **Quiz 1: Volume**
3. **Mass**
4. **Experiment: Mass of Gas**

5. **Quiz 2: Mass**
6. **Density**
7. **Quiz 3: Density**
8. **Test**
9. **Alternate Test**
10. **Reference**

UNIT 3 – PHYSICAL GEOLOGY

1. **Earth Structures**
2. **Internal Structures**
3. **Igneous Structures**
4. **Essay: Volcanic Eruptions (*Write a 600-word report on what you learned about volcanic eruptions. Submit your report with a short bibliography referencing the sources you used for your research.*)**
5. **Mountains**
6. **Quiz 1: Earth Structures**
7. **Earth Changes**
8. **Erosion and Sediment**
9. **Oceans**
10. **Quiz 2: Earth Changes**
11. **Earth Movements**
12. **Experiment: Gravity**
13. **Plate Tectonics**
14. **Quiz 3: Earth Movements**
15. **Test**

16. **Alternate Test**
17. **Reference**

UNIT 4 – HISTORICAL GEOLOGY

1. **An Observational Science**
2. **Sedimentary Rock**
3. **Fossils**
4. **Crustal Changes**
5. **Quiz 1: An Observational Science**
6. **Measuring Time**
7. **Absolute Time**
8. **Quiz 2: Measuring Time**
9. **Test**
10. **Alternate Test**
11. **Reference**

UNIT 5: OCEANOGRAPHY

1. **Chronology and Techniques for Investigation**
2. **Major Discoveries and Submersible Research**
3. **Essay – The Moon and Tides (*Research and write a short report on the effect of the moon on tidal reaction. The length of your report is to be 600 words. Be sure to cite your sources.*)**
4. **Quiz 1: The History of Oceanography**
5. **Geological Structure and Results of Profiling**
6. **Turbidity, Sedimentation, and Currents**

7. **Quiz 2: Geology of the Ocean**
8. **Biology of the Ocean**
9. **Chemistry of the Ocean**
10. **Physical Properties of the Ocean**
11. **Essay: Marine Report** (*Choose one of the following projects to complete: 1. Report on fish meal production, the role of fish meal in the food chain process which occurs off the coast of Peru, or on its value as a source of protein compared to other marine life. 2. Research the life of Jacques Cousteau. Write a brief paper on his importance to the science of oceanography. Your report should be 300 words.*)
12. **Quiz 3: Biological, Physical, and Chemical Properties**
13. **Test**
14. **Alternate Test**
15. **Reference**

UNIT 6 – ASTRONOMY

1. **Presuppositions**
2. **Extent of the Universe**
3. **Constellations**
4. **Measuring the Universe**
5. **Quiz 1: The Universe**
6. **Gathering Light and Types of Telescopes**
7. **Other Types of Telescopes**
8. **Essay: Telescopes -** *Research the critical new developments in telescopes. Write a 200-word paper on the new developments.*
9. **Quiz 2: Telescopes and Optics**

10. **Space Explorations**
11. **Quiz 3: Space Explorations**
12. **Test**
13. **Alternate Test**
14. **Reference**

UNIT 7 – BODY HEALTH (PART 1)

1. **Microorganisms**
2. **Categories of Pathogenic Organisms**
3. **Characteristics of Infectious Diseases**
4. **Essay: Medical Science (*Refer to your assignment and select the appropriate topic of most interest to you. This research paper will be the written and lab work for this unit.*)**
5. **Quiz 1: Microorganisms**
6. **Digestive Infections**
7. **Respiratory Infections**
8. **Nervous System Infections**
9. **Quiz 2: Bacterial Infections**
10. **Common Viral Infections**
11. **Childhood Viral Infections**
12. **More Serious Viral Infections**
13. **Quiz 3: Viral Infections**
14. **Protozoan Infections**
15. **Rickettsial Infections**
16. **Fungal Infections**

17. **Quiz 4: Protozoan, Rickettsial, and Fungal Infections**
18. **Test**
19. **Alternate Test**
20. **Reference**

UNIT 8 - BODY HEALTH (PART 2)

1. **Body Defense Mechanisms**
2. **Medical Drugs**
3. **Essay: Chemotherapy (*Research the importance of chemotherapy. Write a 200-word report on the uses of chemotherapy.*)**
4. **Quiz 1: Disease Treatment**
5. **Environmental Conditions**
6. **Medical Advances and Total Health**
7. **Quiz 2: Disease Prevention**
8. **Governmental Agencies and Volunteer Groups**
9. **Medical and Drug Control Organizations**
10. **Quiz 3: Community Agencies**
11. **Test**
12. **Alternate Test**
13. **Reference**

UNIT 9 – SCIENCE AND TOMORROW

1. **Agriculture and Waste**
2. **Population**
3. **Quiz 1: People and Their Land**

4. **Energy Sources**
5. **Debate: Fossil Fuels, Nuclear/Natural Power**
6. **Industry, Transportation, and Urbanization**
7. **Quiz 2: People and Their Work Environment**
8. **Outer Space**
9. **Inner Space and Self Exploration**
10. **Quiz 3: People and Their New Frontiers**
11. **Test**
12. **Alternate Test**
13. **Reference**

UNIT 10 – REVIEW

1. **Nuclear Power**
2. **The Metric System**
3. **Quiz 1: Nuclear Power**
4. **Weight Versus Mass**
5. **Quiz 2: Weight Versus Mass**
6. **Deposition Versus Erosion**
7. **The Oceans, Continents; Earth in Space**
8. **Quiz 3: Deposition Versus Erosion**
9. **Practical Health**
10. **Population and Environment**
11. **Quiz 4: Practical Health**
12. **Test**

13. **Alternate Test**

14. **Reference**