



2012 Curriculum Catalog

General Science III

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Ignitia comes complete with a full, multimedia-rich curriculum for grades 3-12 in five core subjects and electives.

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Glynlyon Curriculum Development Team

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Course Overview

General Science III 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. The continued exposure of science concepts and scientific inquiry will serve to improve the student's skill and understanding.

Upon completion of the course, students should be able to do the following:

- Use their main senses for observation of the world around them.
- Describe the atomic structure of different elements.
- Calculate and measure volume, mass, and density for different objects.
- Identify different types of geological changes.
- Discuss how the layers of the earth's crust can show history.
- Describe the different parts of the ocean, both living and non-living.
- Explain the differences in the stars and constellations.
- Distinguish between bacterial infections, viral infections, and other types of infections.
- Develop a plan to prevent and treat common diseases through proper health.
- Demonstrate an understanding of the resources of the earth and what is needed to conserve those resources.

UNIT 1: OUR ATOMIC WORLD	
Assignment Titles	
1. Course Overview	9. Essay: Reactors
2. Structure of Matter	10. Quiz 4: Nuclear Energy
3. Quiz 1: Structure of Matter	11. Applications and Environmental Hazards
4. Radioactivity	12. Quiz 5
5. Quiz 2: Radioactivity	13. Special Project
6. Atomic Nuclei	14. Test
7. Quiz 3: Atomic Nuclei	15. Alternate Test
8. Nuclear Energy	16. Reference

UNIT 2: VOLUME, MASS, AND DENSITY	
Assignment Titles	
1. Volume	7. Density
2. Experiment: Determining Volume	8. Quiz 3: Density
3. Quiz 1: Volume	9. Special Project
4. Mass	10. Test
5. Experiment: Mass of Gas	11. Alternate Test
6. Quiz 2: Mass	12. Reference

UNIT 3: PHYSICAL GEOLOGY
Assignment Titles

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|------------------------------|----------------------------------|
| 1. Earth Structures | 11. Earth Movements |
| 2. Internal Structures | 12. Experiment: Specific Gravity |
| 3. Igneous Structures | 13. Experiment: Gravity |
| 4. Essay: Volcanic Eruptions | 14. Plate Tectonics |
| 5. Mountains | 15. Quiz 3: Earth Movements |
| 6. Quiz 1: Earth Structures | 16. Special Project |
| 7. Earth Changes | 17. Test |
| 8. Erosion and Sediment | 18. Alternate Test |
| 9. Oceans | 19. Reference |
| 10. Quiz 2: Earth Changes | |

UNIT 4: HISTORICAL GEOLOGY
Assignment Titles

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|-------------------------------------|---------------------------|
| 1. An Observational Science | 7. Absolute Time |
| 2. Sedimentary Rock | 8. Quiz 2: Measuring Time |
| 3. Fossils | 9. Special Project |
| 4. Crustal Changes | 10. Test |
| 5. Quiz 1: An Observational Science | 11. Alternate Test |
| 6. Measuring Time | 12. Reference |

UNIT 5: OCEANOGRAPHY
Assignment Titles

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|--|---|
| 1. Chronology and Techniques for Investigation | 10. Physical Properties of the Ocean |
| 2. Major Discoveries and Submersible Research | 11. Essay: Marine Report |
| 3. Essay: The Moon and Tides | 12. Quiz 3: Biological, Physical, and Chemical Properties |
| 4. Quiz 1: The History of Oceanography | 13. Special Project |
| 5. Geological Structure and Results of Profiling | 14. Test |
| 6. Turbidity, Sedimentation, and Currents | 15. Alternate Test |
| 7. Quiz 2: Geology of the Ocean | 16. Reference |
| 8. Biology of the Ocean | |
| 9. Chemistry of the Ocean | |

UNIT 6: ASTRONOMY
Assignment Titles

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|--|----------------------------------|
| 1. Presuppositions | 9. Quiz 2: Telescopes and Optics |
| 2. Extent of the Universe | 10. Space Explorations |
| 3. Constellations | 11. Quiz 3: Space Explorations |
| 4. Measuring the Universe | 12. Special Project |
| 5. Quiz 1: The Universe | 13. Test |
| 6. Gathering Light and Types of Telescopes | 14. Alternate Test |
| 7. Other Types of Telescopes | 15. Reference |
| 8. Essay: Telescopes | |

UNIT 7: BODY HEALTH (PART 1)
Assignment Titles

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|---|---|
| 1. Microorganisms | 13. Quiz 3: Viral Infections |
| 2. Categories of Pathogenic Organisms | 14. Protozoan Infections |
| 3. Characteristics of Infectious Diseases | 15. Rickettsial Infections |
| 4. Essay: Medical Science | 16. Fungal Infections |
| 5. Quiz 1: Microorganisms | 17. Quiz 4: Protozoan, Rickettsial, and Fungal Infections |
| 6. Digestive Infections | 18. Special Project |
| 7. Respiratory Infections | 19. Test |
| 8. Nervous System Infections | 20. Alternate Test |
| 9. Quiz 2: Bacterial Infections | 21. Reference |
| 10. Common Viral Infections | |
| 11. Childhood Viral Infections | |
| 12. More Serious Viral Infections | |

UNIT 8: BODY HEALTH (PART 2)
Assignment Titles

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|--------------------------------------|---|
| 1. Body Defense Mechanisms | 8. Governmental Agencies and Volunteer Groups |
| 2. Medical Drugs | 9. Medical and Drug Control Organizations |
| 3. Essay: Chemotherapy | 10. Quiz 3: Community Agencies |
| 4. Quiz 1: Disease Treatment | 11. Special Project |
| 5. Environmental Conditions | 12. Test |
| 6. Medical Advances and Total Health | 13. Alternate Test |
| 7. Quiz 2: Disease Prevention | 14. Reference |

UNIT 9: SCIENCE AND TOMORROW
Assignment Titles

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| 1. Ecology | 9. Outer Space |
| 2. Agriculture and Waste | 10. Inner Space and Self Exploration |
| 3. Population | 11. Quiz 3: People and Their New Frontiers |
| 4. Quiz 1: People and Their Land | 12. Special Project |
| 5. Energy Sources | 13. Test |
| 6. Debate: Fossil Fuels, Nuclear/Natural Power | 14. Alternate Test |
| 7. Industry, Transportation, and Urbanization | 15. Reference |
| 8. Quiz 2: People and Their Work Environment | |

UNIT 10: REVIEW
Assignment Titles

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|---|--------------------------------|
| 1. Nuclear Power | 9. Practical Health |
| 2. The Metric System | 10. Population and Environment |
| 3. Quiz 1: Nuclear Power | 11. Quiz 4: Practical Health |
| 4. Weight Versus Mass | 12. Special Project |
| 5. Quiz 2: Weight Versus Mass | 13. Test |
| 6. Deposition Versus Erosion | 14. Alternate Test |
| 7. The Oceans, Continents; Earth in Space | 15. Reference |
| 8. Quiz 3: Deposition Versus Erosion | |