



monarch

Curriculum Catalog

General Science II

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General Science II Course Overview

General Science II is a basic intermediate course 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 courses, 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.

The course seeks to develop the student's ability to be aware of and participate in scientific inquiry. The units contain experiments and projects to capitalize on the students' natural curiosity. The student will explore, observe, and manipulate everyday objects and materials in their environment. Students at this level should show understanding of interrelationships between organisms and the environment, recognize patterns in systems, and expand their knowledge of cellular dimensions of living systems. Collectively, this should help students develop and build on their subject-matter knowledge base.

- **Science and Society:** Students will define science, describe its history, and use their main senses for observation of the world around them.
- **Structure of Matter (Part 1):** Students will describe elements and compounds in the terms of atoms and molecules.
- **Structure of Matter (Part 2):** Students will demonstrate a knowledge of the different changes in matter.
- **Health and Nutrition:** Students will learn how to develop good health habits.
- **Energy (Part 1):** Students will explain and give examples of the different types of energy.
- **Energy (Part 2):** Students will define magnetism and electricity and describe their relationship.
- **Machines (Part 1):** Students will define force and work, and evaluate the relationship that exists between work and energy.
- **Machines (Part 2):** Students will describe the different types of simple machines.
- **Balance in Nature:** Students will discuss the balance in nature regarding the different cycles.
- **Science and Technology:** Student will review the other units and explore careers in science and technology.

Unit 1: Science and Society		
Assignments		
General Science II	1. Course Overview	9. Essay: Da Vinci*
	2. Science Today	10. Limitations
	3. Post-Renaissance Science	11. Quiz 3
	4. Essay: Mendel	12. Special Project*
	5. Quiz 1	13. Test
	6. Today's Scientist	14. Alternate Test*
	7. Quiz 2	15. Reference
	8. Science and Technology	

Unit 2: Structure of Matter (Part 1)		
Assignments		
General Science II	1. Properties of Matter (1)	10. Compounds
	2. Experiment: Determining Volume	11. Mixtures
	3. Experiment: Metric Measurements*	12. Experiment: Mixtures
	4. Properties of Matter (2)	13. Quiz 3
	5. Quiz 1	14. Special Project*
	6. Atoms and Molecules	15. Test
	7. Molecules	16. Alternate Test*
	8. Quiz 2	17. Reference
	9. Elements	

Unit 3: Structure of Matter (Part 2)	
General Science II	Assignments
	1. Matter and Change
	2. Experiment: Phase Changes
	3. Solutions
	4. Chemical Changes
	5. Experiment: Forms of Change
	6. Nuclear Changes
	7. Quiz 1
	8. Acids
	9. Quiz 2
	10. Bases
	11. Experiment: Cabbage
	12. Quiz 3
	13. Salts
	14. Quiz 4
	15. Special Project*
	16. Test
	17. Alternate Test*
18. Reference	

Unit 4: Health and Nutrition	
General Science II	Assignments
	1. Foods and Digestion
	2. Quiz 1
	3. Diet
	4. Experiment: Food Record
	5. Quiz 2
	6. Nutritional Diseases
	7. Essay: Nutrition
	8. Quiz 3
	9. Hygiene
	10. Quiz 4
	11. Special Project*
	12. Test
	13. Alternate Test*
14. Reference	

Unit 5: Energy (Part 1)	
General Science II	Assignments
	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. Essay: Entropy*
	10. Quiz 3
	11. Special Project*
	12. Test
	13. Alternate Test*
14. Reference	

Unit 6: Energy (Part 2)	
General Science II	Assignments
	1. Magnetism
	2. Experiment: Magnetism
	3. Electricity and Magnetism
	4. Quiz 1
	5. Electricity
	6. Electrical Circuits
	7. Quiz 2
	8. Energy for the Future
	9. Experiment: Hot Dog Cooker*
	10. Quiz 3
	11. Special Project*
	12. Test
	13. Alternate Test*
14. Reference	

Unit 7: Machines (Part 1)	
General Science II	Assignments
	1. Distance
	2. Essay: Scientists
	3. Measuring Distance
	4. Quiz 1
	5. Force
	6. Force Vectors
	7. Quiz 2
	8. Work
	9. Work and Energy
	10. Quiz 3
	11. Special Project*
	12. Test
	13. Alternate Test*
14. Reference	

Unit 8: Machines (Part 2)	
General Science II	Assignments
	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. Experiment: Pencil Sharpener
9. Quiz 3	
10. Inclined Plane, Wedge, and Screw	
11. Quiz 4	
12. Special Project*	
13. Test	
14. Alternate Test*	
15. Reference	

Unit 9: Balance in Nature	
General Science II	Assignments
	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. Special Project*
	11. Test
	12. Alternate Test*
	13. Reference

Unit 10: Science and Technology	
General Science II	Assignments
	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. Special Project*
	15. Test
	16. Alternate Test*
17. Reference	

(*) Indicates alternative assignment