



monarch

2018 - 2019 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
	2. Science Today
	3. Post-Renaissance Science
	4. Essay: Mendel
	5. Quiz 1
	6. Today's Scientist
	7. Quiz 2
	8. Science and Technology
9. Essay: Da Vinci*	
10. Limitations	
11. Quiz 3	
12. Special Project*	
13. Test	
14. Alternate Test*	
15. Reference	

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

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

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

Unit 5: Energy (Part 1)		
Assignments		
General Science II	1. Mechanical Energy	8. Energy Conversion and Entropy
	2. Potential Energy	9. Essay: Entropy*
	3. Quiz 1	10. Quiz 3
	4. Other Forms of Energy	11. Special Project*
	5. Chemical Energy	12. Test
	6. Atomic Energy	13. Alternate Test*
	7. Quiz 2	14. Reference

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

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

Unit 8: Machines (Part 2)		
Assignments		
General Science II	1. Friction	9. Quiz 3
	2. Types of Friction	10. Inclined Plane, Wedge, and Screw
	3. Experiment: Friction Investigation	11. Quiz 4
	4. Quiz 1	12. Special Project*
	5. Levers	13. Test
	6. Quiz 2	14. Alternate Test*
	7. Wheel and Axle, Pulleys, and Gears	15. Reference
	8. Experiment: Pencil Sharpener	

Unit 9: Balance in Nature		
Assignments		
General Science II	1. Photosynthesis and Food	8. Resources
	2. Food	9. Quiz 3
	3. Quiz 1	10. Special Project*
	4. Natural Cycles	11. Test
	5. The Water Cycle	12. Alternate Test*
	6. Quiz 2	13. Reference
	7. Balance and Disruption	

Unit 10: Science and Technology		
Assignments		
General Science II	1. Basic Science	10. Life Science
	2. Characteristics of Matter	11. Quiz 3
	3. Matter in Change	12. Vocations in Science and Technology
	4. Quiz 1	13. Quiz 4
	5. Energy	14. Special Project*
	6. Chemical and Atomic Energy	15. Test
	7. Magnetism and Electricity	16. Alternate Test*
	8. Machines at Work	17. Reference
	9. Quiz 2	

(*) Indicates alternative assignment