



monarch

2017 - 2018 Curriculum Catalog

Science 400

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Science 400 Course Overview

Science 400 is a basic elementary course intended to expose students to the designs and patterns in God’s physical universe. This course builds on concepts taught in Science 300, providing a broad survey of the major areas of science. Some of the areas covered in Science 400 include the study of plants and animals, ecology, work and simple machines, electricity and magnetism, properties of water and matter, weather, solar system, and the different spheres of earth.

The course seeks to develop the student’s ability to understand and participate in scientific inquiry. The units contain experiments and projects to capitalize on children’s natural curiosity. The student will explore, observe, and manipulate everyday objects and materials in their environment. Collectively, this should help students develop and build on their subject-matter knowledge base.

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 different uses for plants.
- Discuss the differences among the ways that different animals act.
- Understand how people are responsible for preserving and conserving nature.
- Explain the different types of simple machines.
- Describe an electrical current and how it relates to magnetism.
- Demonstrate an understanding of the different properties of water.
- Observe weather and how it affects people.
- Describe our solar system.
- Discuss the three different spheres of the earth and how they interact.
- Explain the changes in seasons and time.

Unit 1: Plants	
Assignments	
Science 400	1. Course Overview
	2. Plant Life
	3. Plants Used As Food and Shelter
	4. Project: Things Made of Wood*
	5. Report: Read and Write*
	6. Plants Used For Enjoyment and Symbols
	7. Report: Flowers as State Symbols
	8. Report: Flower Paragraph*
	9. Quiz 1
	10. Parts of Plants
	11. How Plant Parts Function
	12. Experiment: Celery
	13. How Plant Parts Function (Part 2)
	14. How Plant Parts Function (Part 3)
	15. Quiz 2
	16. Special Project*
	17. Review Game
	18. Test
	19. Alternate Test*
	20. Reference

Unit 2: Animals	
Assignments	
1. How Animals are Structured	14. How Animals Act: Insects
2. Whales	15. Report: Honeybee Habits
3. Report: Types of Whales	16. Quiz 2
4. Birds	17. Animal Instinct
5. Reptiles and Fish	18. Man Protects Animals
6. Report: Writing about Fish*	19. Project: Animal Scrapbook*
7. Project: Observing Fish*	20. Quiz 3
8. How Animals Eat and Digest Food	21. Special Project*
9. How Animals Breathe	22. Review Game
10. Quiz 1	23. Test
11. How Animals Act: Mammals	24. Alternate Test*
12. How Animals Act: Salmon	25. Reference
13. How Animals Act: Birds	

Unit 3: Man and His Environment	
Assignments	
1. Ecology	17. Report: Forest Community*
2. Project: Your Environment*	18. Quiz 2
3. Resources	19. Misuse of the Environment
4. Food Chains	20. Project: Ask an Expert*
5. Ecosystem Populations	21. Report: Endangered Species*
6. Project: Populations*	22. Resource Conservation
7. Balance of Nature	23. Report: How to Save Energy*
8. Project: Make a Pyramid*	24. Environmental Preservation
9. Report: Rabbits in Australia*	25. Report: Special Treasures*
10. Quiz 1	26. Quiz 3
11. Water Communities	27. Special Project*
12. Experiment: Still Water Life*	28. Review Game
13. Land Communities	29. Test
14. Project: Human Communities	30. Alternate Test*
15. Report: Read and Write*	31. Reference
16. Project: Terrarium or Diorama*	

Unit 4: Machines	
Assignments	
1. Machines Are Needed: Work	13. Simple Machines: Wheel and Axle
2. Report: Galileo*	14. Simple Machines: Pulleys
3. Experiment: Gravity*	15. Experiment: Pulleys*
4. Machines Are Needed: Energy	16. Quiz 2
5. Quiz 1	17. Compound Machines
6. Simple Machines: Lever	18. Quiz 3
7. Experiment: Lever	19. Special Project*
8. Experiment: Seesaw*	20. Review Game
9. Simple Machines: Inclined Plane	21. Test
10. Experiment: Inclined Plane*	22. Alternate Test*
11. Simple Machines: Wedge and Screw	23. Reference
12. Experiment: Screw and Nail*	

Unit 5: Electricity and Magnetism		
Assignments		
Science 400	1. Electricity	13. Experiment: Make a Magnet
	2. Report: Thomas Edison	14. Experiment: Magnet Poles*
	3. Experiment: Static Electricity	15. Experiment: Testing a Magnet*
	4. Currents and Circuits	16. Experiment: Generate Electricity*
	5. Project: Conductors	17. Experiment: Electromagnet*
	6. Experiment: Wet Cell*	18. Report: Explorers*
	7. Project: Electric Objects*	19. Quiz 2
	8. Electrical Use and Safety	20. Special Project*
	9. Project: Fuses in Use	21. Review Game
	10. Quiz 1	22. Test
	11. Magnetism	23. Alternate Test*
	12. Experiment: Use a Magnet	24. Reference

Unit 6: Water and Matter		
Assignments		
Science 400	1. Water	11. Matter
	2. Experiment: Ice	12. Molecules and Atoms
	3. Experiment: Ice Volume*	13. Experiment: Molecules*
	4. Water as a Liquid	14. Elements
	5. Experiment: Potato*	15. Quiz 2
	6. Water as a Gas	16. Special Project*
	7. Experiment: Forming Dew*	17. Review Game
	8. Water as a Solvent	18. Test
	9. Experiment: Solubility	19. Alternate Test*
	10. Quiz 1	20. Reference

Unit 7: Weather		
Assignments		
Science 400	1. The Atmosphere	11. Quiz 2
	2. Experiment: Air and Space*	12. Prediction of Weather
	3. Temperature	13. Project: Thermometers*
	4. Experiment: Temperature	14. Quiz 3
	5. Air Pressure	15. Special Project*
	6. Experiment: Pressure	16. Review Game
	7. Quiz 1	17. Test
	8. Forces of Weather	18. Alternate Test*
	9. Sand and Dust Storms	19. Reference
	10. Report: Hurricanes*	

Unit 8: Our Solar System and the Universe		
Assignments		
Science 400	1. A Trip Through Space	12. Experiment: Moon Phases
	2. Our Big Universe	13. Quiz 2
	3. Report: Astronomy Instruments	14. The Stars and Space
	4. Essay: Astronomy*	15. Essay: Astrology*
	5. Quiz 1	16. The Milky Way and Other Galaxies
	6. The Sun	17. Quiz 3
	7. Essay: Ancient People*	18. Special Project*
	8. Movements	19. Review Game
	9. Report: Isaac Newton*	20. Test
	10. Heavenly Bodies Around the Sun	21. Alternate Test*
	11. Our Moon	22. Reference

Unit 9: The Planet Earth		
Assignments		
Science 400	1. The Air (Atmosphere)	11. Experiment: Shadows
	2. Experiment: Condensation	12. Earth's Land Formations
	3. Gases in the Atmosphere	13. Earth's Rotation and Revolution
	4. Quiz 1	14. Quiz 3
	5. The Water (Hydrosphere)	15. Special Project*
	6. Essay: Psalm 147*	16. Review Game
	7. Salt Water	17. Test
	8. Experiment: Currents*	18. Alternate Test*
	9. Quiz 2	19. Reference
	10. The Land (Lithosphere)	

Unit 10: Understanding God's Wonderful Creation		
Assignments		
Science 400	1. Review: The Solar System	12. Quiz 3
	2. Review: The Earth	13. Review: Ecology
	3. Quiz 1	14. Review: Conservation
	4. Review: Matter	15. Report: Passenger Pigeon*
	5. Review: Water	16. Quiz 4
	6. Review: Weather	17. Special Project*
	7. Project: Weather Scrapbook*	18. Review Game
	8. Quiz 2	19. Test
	9. Review: Electricity and Magnetism	20. Alternate Test*
	10. Project: Thomas Alva Edison*	21. Reference
	11. Review: Machines	

(*) Indicates alternative assignment