



2012 Curriculum Catalog

Science 300

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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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Course Overview

Science 300 is a basic elementary course intended to expose students to the designs and patterns in God's physical universe. This course provides a broad survey of the major areas of science. Some of the areas covered in Science 300 include the human body, plants, animals, health and nutrition, matter, sound waves, earth science, and heat energy.

The course seeks to develop the student's ability to understand and participate in scientific inquiry. The units contain experiments and projects designed to build 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 a subject-matter knowledge base.

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

- Demonstrate a basic understanding of the systems in a human body.
- Discuss the process a plant goes through in order to grow.
- Explain the difference between types of animals.
- Determine which eating and care habits are the most healthy for students.
- Distinguish between the three phases of matter and describe their properties.
- Explain how sound travels.
- Describe why time and seasons change.
- Discuss how rocks are formed and how they change.
- Explain how heat is produced.

UNIT 1: YOU GROW AND CHANGE	
Assignment Titles	
1. Course Overview	11. Experiment: Taking Your Pulse
2. Your Body Breathes Air	12. Project: Bone Numbers
3. The Body Needs Oxygen	13. Quiz 3
4. Experiment: Breathing Patterns	14. Your Body is Different from an Animal
5. Experiment: Your Lungs	15. Quiz 4
6. Quiz 1	16. Special Project
7. Your Body Digests Food	17. Review Game
8. Experiment: Taste Test	18. Test
9. Quiz 2	19. Alternate Test
10. Your Body Exercises and Rests	20. Reference

UNIT 2: PLANTS	
Assignment Titles	
1. Plant Parts	10. Experiment: Plant a Piece of Potato
2. Experiment: Root Hairs	11. Experiment: Bean Plant
3. Experiment: Study a Stem	12. Quiz 3
4. Quiz 1	13. Special Project
5. Plant Growth	14. Review Game
6. Experiment: Grow Some Plants	15. Test
7. Quiz 2	16. Alternate Test
8. Plant Changes	17. Reference
9. Experiment: Watch Bean Seeds Grow	

UNIT 3: ANIMALS: GROWTH AND CHANGE
Assignment Titles

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|---|----------------------------------|
| 1. Animals and The Environment | 11. Quiz 2 |
| 2. Experiment: Hourly Temperature Changes | 12. How Animals Grow and Change |
| 3. Experiment: Heat Energy Comparison | 13. Project: Sow Bug Environment |
| 4. Project: Desert Locations | 14. Quiz 3 |
| 5. Quiz 1 | 15. Special Project |
| 6. How Animals are Different | 16. Review Game |
| 7. Animal Structures | 17. Test |
| 8. Project: Vertebrate Chart | 18. Alternate Test |
| 9. Eating and Breathing | 19. Reference |
| 10. Project: Sort Birds By Type | |

UNIT 4: YOU ARE WHAT YOU EAT
Assignment Titles

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|-----------------------------------|------------------------------------|
| 1. How to Build a Healthy Body | 10. How to Form Good Health Habits |
| 2. How to Build a Healthy Body-2 | 11. Caring for the Eyes and Body |
| 3. Quiz 1 | 12. Quiz 3 |
| 4. How to Plan for Healthy Eating | 13. Special Project |
| 5. Project: Breakfast Chart | 14. Review Game |
| 6. Project: Lunch Chart | 15. Test |
| 7. Project: Dinner Chart | 16. Alternate Test |
| 8. Project: Chart Totals | 17. Reference |
| 9. Quiz 2 | |

UNIT 5: PROPERTIES OF MATTER
Assignment Titles

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|---------------------------------|-----------------------------------|
| 1. Chemistry and Robert Boyle | 11. Experiment: Mass Measurement |
| 2. Experiment: Be a Chemist | 12. Experiment: Melting Ice Cubes |
| 3. Properties of Matter | 13. Chemical Changes |
| 4. Experiment: Volume | 14. Quiz 2 |
| 5. Experiment: Think about Mass | 15. Special Project |
| 6. Experiment: Is Air Matter? | 16. Review Game |
| 7. Project: Matter List | 17. Test |
| 8. Experiment: Is Water Matter? | 18. Alternate Test |
| 9. Quiz 1 | 19. Reference |
| 10. Physical Changes | |

UNIT 6: SOUNDS AND YOU
Assignment Titles

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|---------------------------------------|-------------------------------------|
| 1. Sounds are Made | 11. Sounds are Heard |
| 2. Experiment: Vibrations | 12. Experiment: Think About Hearing |
| 3. Quiz 1 | 13. Report: How Animals Hear |
| 4. Sounds are Different | 14. Quiz 3 |
| 5. How Do Sounds Travel? | 15. Special Project |
| 6. Experiment: Sound Patterns | 16. Review Game |
| 7. Report: Read and Write About Sound | 17. Test |
| 8. Experiment: High and Low Sounds | 18. Alternate Test |
| 9. Experiment: Loud or Soft? | 19. Reference |
| 10. Quiz 2 | |

UNIT 7: TIME AND SEASONS
Assignment Titles

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|-------------------------------------|------------------------|
| 1. How the Earth Moves | 9. Quiz 2 |
| 2. Experiment: The Earth | 10. Why Seasons Change |
| 3. Experiment: Night | 11. Quiz 3 |
| 4. Experiment: The Earth's Rotation | 12. Special Project |
| 5. Quiz 1 | 13. Review Game |
| 6. Why Time Changes | 14. Test |
| 7. Experiment: Different Times | 15. Alternate Test |
| 8. Report: Months | 16. Reference |

UNIT 8: ROCKS AND THEIR CHANGE
Assignment Titles

- | | |
|---|----------------------------------|
| 1. How Rocks are Formed: By Heat | 10. Report: Mount Rushmore |
| 2. Rocks Formed by Volcanoes | 11. Rocks are Used for Enjoyment |
| 3. How Rocks are Formed: By Pressure | 12. Quiz 3 |
| 4. Experiment: Bubbling Grains of Rock | 13. Special Project |
| 5. Quiz 1 | 14. Review Game |
| 6. Rocks are Changed by Wind and Water | 15. Test |
| 7. Rocks are Changed by Heat and Plants | 16. Alternate Test |
| 8. Quiz 2 | 17. Reference |
| 9. Rocks are Used for Building | |

UNIT 9: HEAT ENERGY
Assignment Titles

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|-----------------------------------|--|
| 1. Heat Energy (Part 1) | 10. Experiment: Changing Liquid to Gas |
| 2. Experiment: Feeling Friction | 11. Quiz 2 |
| 3. Experiment: Oxygen and Fire | 12. Heat Energy Affects Our Lives |
| 4. Heat Energy (Part 2) | 13. Quiz 3 |
| 5. Experiment: Static Electricity | 14. Special Project |
| 6. Quiz 1 | 15. Review Game |
| 7. What Heat Energy Is and Does | 16. Test |
| 8. Experiment: Water Molecules | 17. Alternate Test |
| 9. Movement of Heat Energy | 18. Reference |

UNIT 10: REVIEW
Assignment Titles

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|---------------------------------------|---|
| 1. Physical Change: Change in Man | 10. Experiment: How Sound Travels |
| 2. Physical Change: Change in Plants | 11. Experiment: Temperature Comparisons |
| 3. Physical Change: Change in Animals | 12. Quiz 3 |
| 4. Quiz 1 | 13. Special Project |
| 5. The Earth | 14. Review Game |
| 6. Seasons and Times | 15. Test |
| 7. Project: Rock Collection | 16. Alternate Test |
| 8. Quiz 2 | 17. Reference |
| 9. Sounds and Energy | |