



Homeschool Online Science Courses Curriculum

Physical Science & Basic Chemistry Grade: 9	Biology Grade: 10	Environmental Science Grades: 11-12
Orientation Date: Sept. 4 Start Date: Sept. 5	Orientation Date: Sept. 4 Start Date: Sept. 5	Orientation Date: Sept. 4 Start Date: Sept. 5

ASSIGNMENTS

<p>1) Online Research using the following websites:</p> <ul style="list-style-type: none"> • Ed Puzzle • National Geographics • PBS Nova Learning • Physical Science / Prentice Hall Textbook <p>2) Teacher and student Meetings:</p> <ul style="list-style-type: none"> • Every 2 Weeks <p>Your teacher will meet with each student to discuss academic content and understanding of all essential questions and scientific vocabulary. Parents have a choice of meeting at their home or teacher’s meeting site.</p> <p>Meeting Site: To be announced</p> <p>3) Science Experiences</p> <ul style="list-style-type: none"> • Every 2 Weeks <p>Students will complete labs and projects that will be</p>	<p>1) Online Research using the following websites:</p> <ul style="list-style-type: none"> • Ed Puzzle • National Geographics • PBS Nova Learning • Biology Concepts and Connections Textbook <p>2) Teacher and student Meetings:</p> <ul style="list-style-type: none"> • Every 2 Weeks <p>Your teacher will meet with each student to discuss academic content and understanding of all essential questions and scientific vocabulary. Parents have a choice of meeting at their home or teacher’s meeting site.</p> <p>Meeting Site: To be announced</p> <p>3) Science Experiences</p> <ul style="list-style-type: none"> • Every 2 Weeks <p>Students will complete labs and projects that will be</p>	<p>1) Online Research using the following websites:</p> <ul style="list-style-type: none"> • Ed Puzzle • National Geographics • PBS Nova Learning • Environmental Science Textbook <p>2) Teacher and student Meetings:</p> <ul style="list-style-type: none"> • Every 2 Weeks <p>Your teacher will meet with each student to discuss academic content and understanding of all essential questions and scientific vocabulary. Parents have a choice of meeting at their home or teacher’s meeting site.</p> <p>Meeting Site: To be announced</p> <p>3) Science Experiences</p> <ul style="list-style-type: none"> • Every 2 Weeks <p>Students will complete labs and projects that will be</p>
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done online and at the teacher's meeting site.

Online labs will be done on the following websites:

- Gizmo Virtual Lab
- PhET Lab Simulations
- PBS Learning Labs

Online labs will be done at student's home.

There will also be four labs/research projects done at the following sites:

- Cincinnati Zoo
- University of Cincinnati
- Newport Aquarium
- Kings Island

After every science experience, students will submit a scientific research report to the teacher which will include the Scientific Method/CER format.

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All students will be a part of the "End of the Year Student Showcase" in May. Students will display research that can help our society.

ASSESSMENTS

- Vocabulary and Content Mini Test
- Critical Thinking & Skills
- Understanding of Ohio Science Education Standards

Science Units / Quarter 1

A. Matter

- Classifying Matter
- Properties of Matter
- Changes of Matter
- Matter and Energy
- Changes of State
- Fluids
- Behavior of Gases

B. Unit Wrap Up

- Skills Assessments
- Mini Test

A. Science Inquiry

- Skills in Answering Scientific Questions
- Critical Thinking Skills in Solving Science Problems
- Scientific Measurements & Tools

B. Ecology/Genetics

- Life as a Hunter Experience
- Relationships Experience
- Analyzing Animal Behaviors Experience
- Macromolecules of Life

C. Unit Wrap Up

- Skills Assessments
- Mini Tests

A. Science Inquiry

- Skills in Answering Scientific Questions
- Critical Thinking Skills in Solving Science Problems
- Scientific Measurements & Tools

B. Environmental Issues

- Nature of Science Diagrams
- Understanding the Environment case Study
- Power Point of Major Environmental Issues
- Ecological Organization Level Study

C. Unit Wrap Up

- Skills Assessments
- Mini Tests

Science Units / Quarter 2

A. Chemistry

- Development of Atomic Theory
- Structure of Atoms
- Modern Atomic Theory
- Organizing the Elements
- Exploring the Periodic Table
- Families of Elements
- Compounds and Molecules

A. Genetics

- Family Tree Experience
- Mendel Experience
- Journey into the Chromosomes Experience
- DNA Versus RNA Expedition
- Genetic Variations in Skin Color Experience

B. Unit Wrap Up

A. Biosphere

- Designing a Biosphere Model
- Investigating Earth Cycles
- Parts of an Ecosystem Study

B. Human Populations

- Historical Timeline

<ul style="list-style-type: none"> • Ionic and Covalent Bonding • Compound Names and Formulas • Chemical Reactions <p>B. Unit Wrap Up</p> <ul style="list-style-type: none"> • Skills Assessments • Mini Tests 	<ul style="list-style-type: none"> • Skills Assessments • Mini Tests 	<ul style="list-style-type: none"> • Creating and Understanding Data <p>C.. Biomes and Biodiversity</p> <ul style="list-style-type: none"> • World Biomes Map Project • Biodiversity Study <p>D. Unit Wrap Up</p>
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Science Units / Quarter 3

<p>A. Stoichiometry</p> <ul style="list-style-type: none"> • Law of Conservation in Masses • Balancing Equations • Molar Mass <p>B. Nuclear Changes</p> <ul style="list-style-type: none"> • What is Radioactivity? • Nuclear Fission and Fusion • Nuclear Equations <p>C. Physics</p> <ul style="list-style-type: none"> • Motion • Newton Laws <p>D. Unit Wrap Up</p> <ul style="list-style-type: none"> • Skills Assessments • Mini Tests 	<p>A. Microscopic World</p> <ul style="list-style-type: none"> • Cellular Study of Living Organisms • Photosynthesis and Cellular Respiration Diagrams • Invisible Living and Nonliving Organisms Expedition • Bacteria and Viruses Invasion <p>B. Protein Synthesis</p> <ul style="list-style-type: none"> • Mutation Factory • Protein Factory <p>C. Unit Wrap Up</p> <ul style="list-style-type: none"> • Skills Assessments • Mini Tests 	<p>A. Air</p> <ul style="list-style-type: none"> • Constructing the Atmosphere • Gases in the Air Diagrams • Exploring the Environmental Issues in the Air • Indoor Pollutants Problems <p>B. Water</p> <ul style="list-style-type: none"> • Water Resources Graph and Data Tables • How We Get Water Story • Water Pollutants in Our World News Reports • Water Treatments Procedures <p>C. Unit Wrap Up</p> <ul style="list-style-type: none"> • Skills Assessments • Mini Tests
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Science Units / Quarter 2

<p>A. Physics</p>		
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- Work and Energy
- Heat and Temperature
- Waves
- Electricity and Magnetism
- Thermodynamics and Projectile Motion

B. Unit Wrap Up

- Skills Assessments
- Mini Tests

A. Ecology

- Constructing Earth Biosphere
- Energy Flow in an Ecosystem Study
- Relations in an Ecosystem Study
- On Safari Project in World's Biomes

B. Unit Wrap Up

- Skills Assessments
- Student Presentation

A. Land

- Land Uses and Planning Diagrams and Maps
- Environmental Issues Dealing with the Land Story
- Recycling Reduce and Reuse Posters

B. Food and Agriculture

- Global Food Problem Study

C.. Alternative Resources

- Viewing the Natural Resources
- Answers to the Problem
- Sustainable World Project

D. Unit Wrap Up

- Skills Assessments
- Mini Tests

Grading Policy

Each assignment will be worth a certain number of points. The total points earned will be divided by the total possible points multiplied by 100 %. Assignments include the following:

- Research
- Unit Vocabulary
- Virtual Labs
- In-Person Labs & Activities
- Projects
- Data and Observations
- Science Skills Check/Assessment

2024-2025 Academic Calendar

SEMESTER 1

September 5 and 6	Meet the Teacher/Orientation
September 9	Quarter 1 Begins and On-line Course Begins
September 16, 17, 18	Teacher and Student Progress Meeting
September 26	Coop (Labs and Activities)
October 2 and 3	Teacher and Student Progress Meeting
October 10	Coop (Labs and Activities)
October 15 and 16	Teacher and Student Progress Meeting
October 24	Coop (Labs and Activities)
November 1	Quarter 1 Ends
November 4	Quarter 1 Grades reported to Student and Parents
November 5	No School
November 6	Quarter 2 Begins and On-line Course Open
November 12 and 13	Teacher and Student Progress Meeting
November 21	Coop (Labs and Activities)
November 27-29	Thanksgiving Break
December 5	Coop (Labs and Activities)
December 11 and 12	Teacher and Student Progress Meeting
December 19	Coop (Labs and Activities)
December 20 to January 3	Winter Break
January 6	Online Course Open
January 14 and 15	Teacher and Student Progress Meeting
January 20	No School

January 23	Coop (Labs and Activities)
January 24	End of Quarter 2 and Semester 1
January 27	Grades Reported to Student and Parents

SEMESTER 2

January 27	Semester 2 and Quarter 3 Starts. Online Course Open for students.
February 6	Coop (Labs and Activities)
February 11 & 12	Teacher and Student Progress Meeting
February 17	No School
February 20	Coop (Labs and Activities)
February 24 & 25	Teacher and Student Progress Meeting
March 6	Coop (Labs and Activities)
March 10 & 11	Teacher and Student Progress Meeting
March 20	Coop (Labs and Activities)
March 28	End of Third Quarter
March 31	Grades Reported to Students and Parents
April 1	Quarter 4 Starts. Online Class Open
April 3	Coop (Labs and Activities)
April 8 & 9	Teacher and Student Progress Meeting
April 14-18	Spring Break/No School
April 21	Online Class Open
April 29-30	Teacher and Student Progress Meeting
May 1	Coop (Labs and Activities)
May 6-7	Teacher and Student Progress Meeting
May 15	Coop (Labs and Activities)

May 23

End of Quarter 4

May 26-29

End of the Year Exam

May 30

Student Presentation/Awards Ceremony