

MHS Curriculum Overview
Science

Last Updated June 2024

CER = Conclusions in Claim, Evidence, Reasoning format

<p>Biology 1 and 2 Gradebook standards</p> <ul style="list-style-type: none"> ● Biological Explanations ● Analyzing and Interpreting Data ● Scientific Reasoning <p>Topics of Study</p> <ul style="list-style-type: none"> ● Experimental design ● DNA & Cell cycle ● Protein Synthesis ● Evolution ● Ecology--Micro & Macro ● Human body systems 	<p>Advanced Biology Gradebook standards</p> <ul style="list-style-type: none"> ● Biological Explanations ● Graphing and Experimental Design ● CER <p>Topics of Study</p> <ul style="list-style-type: none"> ● Graphing and Experimental Design, and writing CERs ● Cell Biology ● DNA & Protein Synthesis ● Cell Cycle and Cancer 	<p>Advanced Biology 2 Gradebook standards</p> <ul style="list-style-type: none"> ● Biological Explanations ● Graphing and Experimental Design ● CER <p>Topics of Study</p> <ul style="list-style-type: none"> ● Genetics ● Evolution ● Human Body systems ● Ecology
<p>Physical Science Chemistry Gradebook standards</p> <ul style="list-style-type: none"> ● Critical Analysis of Scientific Content ● Lab Skills ● Data Analysis & Numeracy ● CER <p>Topics of Study</p> <ul style="list-style-type: none"> ● Chemistry Lab Skills ● Dimensional Analysis & Significant Figures ● Atomic Theory & Structure ● Bonding ● Chemical Equations & Types of Reactions 	<p>Physical Science Physics Gradebook standards</p> <ul style="list-style-type: none"> ● Physics Explanations ● Physics Math Skills ● Analyzing and Interpreting Data <p>Topics of Study</p> <ul style="list-style-type: none"> ● Kinematics ● Dynamics ● Energy 	<p>Chemistry 1 Gradebook standards</p> <ul style="list-style-type: none"> ● Critical Analysis of Scientific Content ● Lab Skills ● Data Analysis & Numeracy ● CER <p>Topics of Study</p> <ul style="list-style-type: none"> ● Chemistry Lab Skills ● Dimensional Analysis & Significant Figures ● Atomic Theory & Structure ● Quantum Mechanical Model & Electron Configurations ● Bonding ● Chemical Equations & Types of Reactions
<p>Chemistry 2 Gradebook standards</p> <ul style="list-style-type: none"> ● Critical Analysis of Scientific Content ● Lab Skills ● Data Analysis & Numeracy ● CER <p>Topics of Study</p> <ul style="list-style-type: none"> ● Chemistry Lab Skills ● The Mole & Stoichiometry ● Solution Stoichiometry ● Acids/Bases & Titrations ● Gas Laws 	<p>Environmental Science Gradebook standards</p> <ul style="list-style-type: none"> ● Environmental Science Explanations ● Lab Reports ● Critical Thinking <p>Topics of Study</p> <ul style="list-style-type: none"> ● Biodiversity Loss ● Water Quality and Land Use ● Soils and Agriculture ● Climate Change and Energy 	<p>Weather and Climate Gradebook standards</p> <ul style="list-style-type: none"> ● Earth Science Explanations ● Analyzing and Interpreting Data ● Earth Science Applications <p>Topics of Study</p> <ul style="list-style-type: none"> ● Atmosphere ● Lithosphere ● Hydrosphere ● Climate Change

<p>Biotechnology Gradebook standards</p> <ul style="list-style-type: none"> • Lab Skills • Lab Analysis & Conclusions • Scientific Explanations <p>Topics of Study</p> <ul style="list-style-type: none"> • DNA Extraction • Gel Electrophoresis • Restriction Enzymes • PCR • Transformation • DNA & Proteins • Genetic Testing • Genetic Modification 	<p>Space Science Gradebook standards</p> <ul style="list-style-type: none"> • Astronomy Explanations • Analyzing and Interpreting Data • Astronomy Applications <p>Topics of Study</p> <ul style="list-style-type: none"> • Earth's place in space & history of modern astronomy • Tour of the Solar System • Beyond the solar system • Modern Space Exploration 	<p>Physics 1 Gradebook standards</p> <ul style="list-style-type: none"> • Lab Skills • Conclusions + CER • Concept Comprehension • Numeracy <p>Topics of Study</p> <ul style="list-style-type: none"> • Kinematics • Balanced Forces • Unbalanced Forces
<p>Physics 2 Gradebook standards</p> <ul style="list-style-type: none"> • Lab Skills • Conclusions + CER • Concept Comprehension • Numeracy <p>Topics of Study</p> <ul style="list-style-type: none"> • Work and Energy • Momentum and Collisions • Mechanical Waves 	<p>Anatomy 1 Gradebook standards</p> <ul style="list-style-type: none"> • Structure / Function Relationships • Interdependence • Homeostasis • Practice / Preparation <p>Topics of Study</p> <ul style="list-style-type: none"> • Anatomical Language • Overview of Body Systems • Histology (tissues) • Digestive System • Respiratory System • Circulatory System • Excretory System 	<p>Anatomy 2 Gradebook standards</p> <ul style="list-style-type: none"> • Structure / Function Relationships • Physiology • Homeostasis • Dissection Practicum • Practice / Preparation <p>Topics of Study</p> <ul style="list-style-type: none"> • Continuation of Anatomical Language and histology • Nervous System • Muscular System • Endocrine System • Skeletal System • Integumentary System
<p>AP Physics 1 and 2 Gradebook standards</p> <ul style="list-style-type: none"> • Formal Lab Write-Ups • Unit Tests <p>Topics of Study</p> <ul style="list-style-type: none"> • Mechanics • Rotational Motion • Fluids • Thermodynamics • Optics • Electricity and Circuit • Magnetism • Modern Physics 	<p>AP Chemistry 1 and 2 Gradebook standards</p> <ul style="list-style-type: none"> • Laboratory Documentation • Laboratory Conclusions • Critical Analysis of Scientific Content <p>Topics of Study</p> <ul style="list-style-type: none"> • Atomic Structure & Properties • Molecular & Ionic Compound Structure and Properties • Intermolecular Forces and Properties • Chemical Reactions • Kinetics • Thermodynamics • Equilibrium • Acids & Bases • Applications of Thermodynamics 	<p>AP Biology 1 and 2 Gradebook standards</p> <ul style="list-style-type: none"> • Biological Explanations • Labs 1 - Variables, Data, Stats • Labs 2 - CERA (Claim, Evidence, Reasoning, and Analysis of Errors) <p>Topics of Study</p> <ul style="list-style-type: none"> • Chemistry of Life • Cell Structure & Function • Cell Energetics • Cell Communication and Cell Cycle • Heredity • Gene Expression and Regulation • Natural Selection • Ecology

<p>Principles of Engineering Gradebook standards</p> <ul style="list-style-type: none"> ● Demonstrate Engineering Design (ENG2) ● Maintain technological products and systems (ENG5) ● Critical Thinking (4C1) ● Communicate and collaborate with Others (4C3) <p>Topics of Study Project Lead the Way based activities:</p> <ul style="list-style-type: none"> ● Energy and Power ● Materials and Structures ● Control Systems - Robotics and Programming ● Statistics and Kinematics 	<p>Environmental Field Studies Gradebook standards</p> <ul style="list-style-type: none"> ● Environmental Science Explanations ● Reflections on Applications ● Service Project <p>Topics of Study</p> <ul style="list-style-type: none"> ● Energy (sources, conservation, net-zero buildings) ● Waste Management ● Food Production ● Habitat Restoration and Resource Management 	
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