American Heritage School Science Curriculum
Kindergarten

Unit Focus	Amount of Time	Content
TERM 1 Providential Foundations		Lay the foundation for the subject. Discuss why we study science Define key terminology God's purposes for the subject The principles which govern the subject: Order, Matter, God's principle of Individuality, Motion, Life
The Scientific Method		Introduce the scientific method and skills needed: inference, estimation, comparison, observation, conclusions
Zoology		Introduce the study of zoology:
Invertebrates		Introduce invertebrate zoology: Protozoans Porifera (sponges) Coelenterates Echinoderms Worms Arthropods Mollusks Labs: Collecting bugs, bug boxes, art.
TERM 2 Vertebrates		Introduce vertebrate zoology: Amphibians Reptiles Fish Birds Mammals Lab: Animal Show
TERM 3		Introduce anatomy See God's principle of design in their body systems

		Discuss proper stewardship of bodies: health and nutrition Lab: Health and nutrition
Stewardship of our Bodies		Discuss the stewardship we have over our bodies
TERM 4 Botany		Present botany Discuss the basic parts of the plant and their functions--root, stem and leaves Discuss what plants need in order to grow Discuss diversity in plants Discuss the oxygen cycle Labs: leaf pressing and collection

American Heritage School Science Curriculum
First Grade

Unit Focus	Amount of Time	Content
TERM 1 Providential Foundations Creation		Lay the foundation for the subject. Discuss why we study science Define key terminology God's purposes for the subject The principles which govern the subject: God's Principle of Individuality, Christian Self-Government, Order and Magnitude
Zoology		Lay the Scriptural foundation for zoology Define and discuss classifications (1 Corinthians 15:39) Lab: Animal show
Zoology		Review invertebrates
Zoology		Review and discuss vertebrates: Mammals: their characteristics and habitats
TERM 2 Animals of the Scriptures---God created animals for our pleasure		Introduce the animals of the scriptures: God created animals for our pleasure and for their fulfillment of purpose. Discuss their usefulness and the spiritual lessons that God teaches through them: Sheep Goats Camels Donkeys Deer Lion Oxen
TERM 3 Human Anatomy and Physiology		Lay the Scriptural foundations for study of anatomy and physiology Define the terminology Discuss the history of anatomy and physiology Discuss Benjamin Rush---American physician Lab: body models

Physiology: Creation of Man		Discuss the creation of man in the image of God: Spirit Soul Body
Physiology: Cell		All of the below information is studied at a very basic level: Discuss the cell as the basic unit of an organism
Physiology: framework of the body, skin, skeleton and muscles		Discuss the framework of the body: skin, skeleton, muscles and basic body systems Discuss the skeletal system Discuss the muscular system Discuss the skin Talk about the following: Cells and Skin Skeleton and Muscles Hart and Kidneys Bladder and Spleen Stomach, Small and Large Intestines Liver and Lungs Eyes, Ears, Mouth, Nose and Tongue (five senses)
TERM 4 Physiology: Body Systems		Introduce and define the term "system" Study the circulator system Study the nervous system---including the senses Study the digestive system Study the respiratory system
Stewardship of our Bodies		Discuss the stewardship we have over our bodies

American Heritage School Science Curriculum
Second Grade

Unit Focus	Amount of Time	Content
TERM 1 Providential Foundations		Lay the foundation for the subject. Discuss why we study science Define key terminology God's purposes for the subject The principles which govern the subject: Order, Matter, God's principle of Individuality, Motion, Life
TERM 2 Astronomy		Lay the scriptural foundations for astronomy Define astronomy Review significant history of astronomy through Copernicus and Galileo Present and discuss our solar system and the planets
Astronomy		Discuss the earth; the moon and its phases Discuss gravity and tides Discuss days and seasons Discuss Sir Isaac Newton and his law of gravitation Do a sky observation activity
Astronomy		Discuss the earth and sun Discuss the stars and constellations
TERM 3 Oceanography		Define Oceanography Lay the scriptural foundations of the subject Discuss the elements of oceanography Introduce the life of Matthew Maury--Father of Oceanography Discuss and define waves, tides, currents, the ocean floor Visit a marine science museum Lab: sea floor wave bottles
TERM 4 Geology		Introduce the study of Geology Define and lay the scriptural foundation

		Introduce and discuss minerals and crystals Study rock types Labs: open geodes, crystal candy
Layers of the Earth		Introduce the layers of the earth Study the crust, mantle, etc. Study types of soil
Meteorology		Introduce and define meteorology Lay the scriptural foundation for meteorology Study weather forecasting Review the weather instruments Study the atmospheric layers Study the water cycle Study different types of clouds

American Heritage School Science Curriculum
Third Grade

Unit Focus	Amount of Time	Content
TERM 1 & 2 Foundations		Discuss the scriptural foundation for science: Define the terms Discuss God's purposes for the subject of science Discuss the principles of the subject Include: God's Principle of Individuality, Christian Self-Government, and Unity with Diversity
Cytology		Introduce Cytology (study of cells) Discuss the scriptural foundation Discuss the key terms and definitions Discuss the characteristics of living things Lab: shrinky dink cells
Robert Hooke		Discuss the life and contributions of Robert Hooke Discuss Cell structure Compare and contrast plant and animal cells Microscopic observation of cells Do an osmosis experiment (if time permit)
Famous Discoveries		Discuss Louis Pasteur---Bacteria Discuss Dr. William Harvey--Blood circulation Discuss Anton van Leeuwenhoek--Microscopic cells Discuss Matthew Schleiden and Theodor Schwann---cells
TERMS 3 & 4 Ornithology		Lay the scriptural foundation of ornithology Discuss characteristics of birds and their body structure Discuss the characteristics and care of bird feathers Discuss the individuality of beaks Discuss the individuality of feet Discuss nest building Discuss the unique qualities of bird nests

		Discuss the unique qualities of bird eggs Discuss the hatching of eggs Discuss bird migration Make a bird house Go on a bird watching expedition-watching birds around home Labs: owl pellets, bird show, bird houses, bird report

American Heritage School Science Curriculum
Fourth Grade

Unit Focus	Amount of Time	Content
TERM 1 Physics		Discuss the scriptural foundation for physics Define key terms Discuss the history of physics Discuss the study of forces and motions including experiments and research concerning friction and inertia, action and reaction and the laws of motion Discuss the contributions of Isaac Newton Discuss the pendulum, simple machine including levers Inclined planes, wedges, gears and pulleys Lab: rocket car races
TERM 2 Physics		Do a science/invention project Discuss the scientific method of research Lab: Invention fair
TERM 3 Botany		Discuss the scriptural foundations for botany Define the key terms Discuss the history of botany Discuss taxonomy-very brief Discuss Carol von Linnaeus, "Father of Modern Taxonomy"
TERM 4 Botany		Discuss morphology of plants Discuss physiology of plants Discuss plant ecology Discuss the contributions of John Bartram, pioneer American botanist Discuss plant pathology Discuss the contributions of Luther Burbank

American Heritage School Science Curriculum
Fifth Grade

Unit Focus	Amount of Time	Content
Foundations		Establish the definition and scriptural purpose for science. According to Scriptures, all areas of science and their branches have their roots in the six days of creation. Identify the scriptural foundations of Science: Hebrews 1:10; Moses 1: 2 through 5; D&C 136: 32; Psalms 8: 32; Moses 2 and 3.ns Establish an open environment to discuss questions or issues relating to science and faith Review the purpose for the study of science; A deeper understanding of the miracle of Heavenly Father's creation of the heavens will be interwoven with each lesson. Gain a love for God and an appreciation for His nature and the masterful design of His universe, and learn the responsibility of good stewardship the earth and its resources wisely. Review the principles of each subject to be covered in the academic year. Review class expectations and discuss the objectives of the quarters subject matter
TERM 1 The celestial sphere: Astronomy		Introduce the subject of astronomy and discuss the celestial sphere in relation scriptural references. Review these related scriptural foundations and how they are interwoven with science. Define the related vocabulary as part of each lesson. Word study as applicable. Discuss the universe; galaxies, stars, constellations, nebulas, and their formation, Discuss concepts of space and time: Sir Isaac Newton (1642-1727) Discuss the eight planets, and the "lesser" planets and planetoids. Discuss asteroids, comets and meteors. Discuss the Earth and moon. Include the phenomena of moon phases, tides, and eclipses Discuss the exploration of space
TERM II The atmosphere: Meteorology		Introduce the subjects of Meteorology and Climatology. Discuss the discuss weather in relation scriptural references and foundations (in all lessons) Define the related vocabulary as part of each lesson Discuss the water cycle and its importance and relate to Utah. Discuss the movement of the atmosphere to include wind belts due to earth's rotation and fronts Discuss cloud types and cloud formation

		Discuss weather regions of the United States and do map project. Discuss weather forecasting and track local forecast for a week: Blaise Pascal Class project for quarter is to photograph ten clouds that fit four major categories
TERM III: The lithosphere: geology		Introduce the subjects of Geology and Physical Geography and relate to the scriptural foundation of the creation of the earth. Incorporate in each lesson. Define the related vocabulary as part of each lesson. Discuss the composition of the earth and related tectonics. Discuss major land formations; continents, ocean basins, mountains, lowlands, river basins, and other distinctive features. Discuss earthquakes and volcanoes. Discuss minerals and ores Discuss rocks and fossils Discuss weathering (erosion), Wind, rain, water, mass wastage, gravity, etc. Project for quarter is to photograph 10 distinctive geological formations and define.
TERM IV: The hydrosphere: oceanography		Introduce the subject of Oceanography and discuss the scriptural foundations and references of the hydrosphere, oceanography. Incorporate references in each lesson Define the related vocabulary as part of each lesson. Word search as applicable. Discuss the oceans and seas, bays, straights, currents, etc. and do map project in class: Matthew Maury (1806-1873) Discuss ice caps, glaciers, and ice shelves and their importance to world climates and wildlife. Discuss the ground water system, and relate to Utah

American Heritage School Science Curriculum
Sixth Grade

Unit Focus	Amount of Time	Content
Foundations		Establish the definition and scriptural purpose for science. (Definition in the Noah Plan-pg. 274) According to Genesis, all areas of science and their branches have their roots in the six days of creation. Psalms 19:1 "The heavens declare the glory of God; and the firmament sheweth His handiwork." Define the key words and scriptural foundations Identify the scriptural principles of the subject Principles to be reviewed this year: Sovereignty of God God's Principle of Individuality Principle of "Conscience Is the Most Sacred of All Property." The Principle of Christian Self-Government God organized all things that He created God created all things with a divine orderliness and design. God's perfect creation is complete and will yet be finished in its fullest fulfillment God uses creation to teach eternal truths
TERM 1 Botany		Define botany and botanical terms Identify and discuss the scriptural foundations for botany Introduce the scientific method Discuss the plants of the scriptures: 1. Flowering seed plants 2. Plant Structure Do a laboratory activity Discuss Angiosperms Discuss the Nitrogen cycle Discuss Monocots and Dicots Do a lab activity

		Discuss grasses Discuss broadleaf trees---internal and external structure and the function of leaves Discuss the structure of flowers Discuss fruit and seed formation Read George Washington Carver aloud Select a science fair topic
TERM 2 Botany Continued		Discuss the structure of woody stems Identify and discuss the Lord's purposes for trees Discuss plant hormones and tropisms Discuss herbaceous stems Discuss vegetative reproduction Discuss the classification system: Carolus Linnaeus Discuss conifers and gymnosperms Discuss vascular and nonvascular plants Discuss ferns and spore producing plants Discuss mosses and liverworts Discuss algae Discuss fungi, molds, and lichens
TERM 3 &4 Zoology		Define Zoology and zoological terms Discuss the scriptural foundations of zoology Define and discuss the characteristics of mammals Discuss classifications---Orders II and III Discuss birds Discuss the anatomy, physiology and reproduction of selected groups of animals Discuss cold-blooded animals: 1. Amphibians 2. Fish 3. Arthropods--insects 4. Arachnids 5. Crustaceans 6. Mollusks 7. Echinoderms 8. Rotifers

		9. Coelenterates 10. Porifers 11. Worms Discuss single--celled animals--protozoa Discuss creationism

American Heritage School Science Curriculum
Seventh Grade

Unit Focus	Amount of Time	Content
TERM I Foundations of Physical Science		Principles for this year: 1. God created all things 2. God holds all things together 3. The source of all energy and life is God and was created by Him and for Him 4. Energy cannot be created or destroyed 5. Matter and energy continuously produce changes in the world in a downward trend 6. God's Principle of Individuality 7. Heritage of Christian Character 8. Conscience is the Most Sacred of All Property. (The application of scientific data to technology demands moral integrity) Lay the scriptural foundation and origin of physical science Define the vocabulary Discuss the rudiments of the physical sciences Discuss the American Christian philosophy of science Do a historical overview of the physical sciences Discuss outstanding individuals, their character and contributions to the world of science and Christianity Do a Christian History Timeline of the Physical Sciences
TERM II		Discuss the scriptural foundation of chemistry 1. God organized the elements of the universe and the earth 2. The earth and its elements were given to man to subdue and steward 3. Chemical elements are described in the scriptures 4. God used chemicals in His plan for Old Testament worship. 5. Chemical principles frequently demonstrate spiritual truths Define the vocabulary of chemistry Present a timeline of chemistry and the chain of Christianity:

		1. Robert Boyle---"Father of Chemistry" 2. Joseph Priestley 3. John Dalton 4. The Scientific method: -Galileo demonstrated that scientific principles must be based on observation an experimentation, not logic alone -Scriptural reasoning in the scientific method: identify the law/principle; observe and record; measure and record; application of the law of principle/facts; general application Discuss Matter 1. Measurement of matter 2. Properties of matter 3. Classification of matter: Periodic Table of the Elements, a revelation of God's masterpiece of design 4. Elements, compounds and mixtures Discuss chemical equations Discuss chemical reactions Discuss Inorganic Chemistry Discuss Organic Chemistry: 1. Structure of organic molecules 2. Biochemistry and the study of cell chemistry Do weekly chemistry labs, demonstrations and experiments
TERMS 3 & 4		Discuss the scriptural foundation and origin of physics Discuss and define the vocabulary of physics Present a timeline of physics and the Chain of Christianity 1. Nicholas Copernicus 2. Leonardo Da Vinci 3. Galileo 4. Sir Isaac Newton---"Father of Modern Physics" 5. William Gilbert 6. Albert Einstein 7. Michael Faraday
		Discuss machines Discuss waves and sound

		Discuss energy Discuss heat (thermodynamics) 1. Expansion 2. Contraction Discuss Electricity circuits 1. Simple 2. Series Discuss Magnetism 1. Magnets and magnetism defined and practically applied 2. Michael Faraday (1791-1867) Discuss Electricity 1. The nature of electricity 2. Basic principles of direct current and alternating current 3. Parallel Discuss Magnetism---magnetic fields and properties Discuss Vibration Discuss Sound Discuss Light Discuss Electronics
		Do weekly physics labs, demonstrations and experiments
		Complete a science project

American Heritage School Science Curriculum
Eighth Grade

Unit Focus	Amount of Time	Content
Foundations		Principles of Focus for the year: God created everything in His universe according to His nature and character Everything He created is unique and distinct, and sustained by Him As the God of order, His created universe reflects His character trait of orderliness God created His entire universe: perfect fulfillment of His creations will yet be seen God is the source of all power from whom all energy originates Humans must nourish themselves to sustain the activities of life---energy for growth, repair and reproduction. Since life may only arise from other living things, a living human being can only begin from existing living human beings. The human body is composed of different parts which operate independently yet in harmony with all of its other parts simultaneously God so loves the world that He imparts a portion of His divine knowledge and wisdom to humans, who reveal this understanding and comprehension of His universe in His timing, to assist Mankind in its battle against the ravages of sin. God created man in his own image…male and female created He them as separate and unique creations.
TERM I		Introduce and discuss the distinction between a Latter-day Saint Christian study of human anatomy and physiology Discuss the skeletal system: the anatomy of a bone, joints, calcium, purpose and function Discuss the cell: its anatomy and operations Discuss the compound microscope: construction and usage Discuss the muscular system: identification, movement, tendons, etc.
TERM II		Discuss the nervous system: brain, neurons, nerves, spinal cord, senses, etc. Discuss the respiratory system: anatomy, inspiration, carbon dioxide, etc. Discuss the circulatory system: blood, the heart, veins, arteries, etc. Begin the science project
TERM III		Discuss the digestive system: nutrition, the stomach and intestines, etc.

		Discuss the excretory system: excretion, urinary system, kidneys, nephron, etc. Continue working on and complete the science project
TERM IV		Discuss the endocrine system: hormones, glands, disorders, etc. Discuss the integumentary system: skin, hair, etc. Discuss the study of human genetics and the reproductive system