



# Portals

## Leaders Course Descriptions

### Contact Us

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# Portals

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It's just so convenient to have everything put together and planned out!

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We have all grown in our faith and relationship with God through our daily Bible lessons.

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# Scope & Sequence

This course catalog was developed to provide you with an overview of the coursework that your high school student will complete while participating in the Portals program. There are multiple courses in each disciplinary area. Bible, History, Literature, and English are all designed to work in concert with one another, reinforcing learning across subject areas. It is recommended that you take all of these courses together, as shown in the Scope & Sequence below. Math and Science are based on individual student placement upon entering the program, and should be selected according to each student’s developmental level and high school graduation requirements.

As partners in your child's education, we encourage your input, questions, and feedback. Every aspect of Portals is designed to serve your needs, and make the organization of learning as easy as possible so you have time for the work and joy of teaching and discipleship.

May God bless you and your family abundantly!

Leaders (High School)				
	School Year (Y1) 2023, 2026, 2029	School Year (Y2) 2024, 2027, 2030	School Year (Y3) 2025, 2028, 2031	School Year (Y4) Senior Year
Bible	NT Survey	OT History	OT Worship	Commentary Project & Teaching
History & Civics	Church History	World History	American Government & Current Issues	Classic Literature & Missions
Literature	Readers	Readers	Readers	Readers
English	Family Almanac	Gazette	Novel in a Year	Building a Business
Science	Home Sciences	Physics	Biology	Chemistry
		Adv. Physics	Adv. Biology	Adv. Chemistry
Math	Math U See - Geometry	Math U See - Algebra II	Math U See - Pre-Calculus OR Internship	Church Service Internship & Survey

Based on individual student placement when starting the Portals program

## Course Description:

This two semester sequence is the first round through the New Testament, covering Matthew, Hebrews, Acts, Romans, Ephesians, 2 Thessalonians, 1 Timothy and Revelation. Topics covered include Jesus's life, death and resurrection; the early church and missions; expectations, exhortations and encouragements for life in Christ; and end times. Students explore Jesus's calling for the Church, their spiritual gifts and many of the key images used throughout the New Testament. Projects include invitations to pray, opportunities to serve, strategies for study, and ideas for application. Bible readings are supplemented with digital resources that allow for further exploration. Grading is based on understanding as demonstrated in discussions, written assignments and project artifacts.

## Concepts Covered:

**Matthew** - Birth of Jesus, Ministry of Jesus, Crucifixion, Resurrection

**Hebrews** - Salvation, Eternal King and Priest, New Covenant, Faith

**Acts** - Pentecost, Holy Spirit, Church, Martyrs, Gentiles, Persecution, Missions

**Romans** - Gentiles, Law, Righteousness, Israel, Liberty

**Ephesians** - Christ-centered, Gifts, New Life, Relationships, Responsibilities, Armor

**2 Thessalonians** - Judgement, Perseverance, Prayer, Work

**1 Timothy** - Unity, Roles, Examples, Rules, Encouragement, Warnings

**Revelation** - Churches, The Lamb, Judgements, Beast, Babylon, Millennium

## Texts:

- The Bible (any version)
- Strong's Concordance

## Course Description:

This two semester sequence is the first round through the Old Testament, covering Genesis, Exodus, Numbers, Joshua, Judges, Ruth, 1 and 2 Samuel, 1 and 2 Kings, and Jonah. Topics covered include creation, sin, promises, covenants, slavery, rebellions, judges, kingdoms, prophets and deliverance. Students explore the origin of life and creation; the reason for evil in the world; God's faithfulness despite rebellion; the consequences of sin; and the promise of redemption. Projects include invitations to pray, opportunities to serve, strategies for study, and ideas for application. Bible readings are supplemented with digital resources that allow for further exploration. Grading is based on understanding as demonstrated in discussions, written assignments and project artifacts.

## Concepts Covered:

**Genesis** - Creation, Fall, Flood, Languages, Covenants, Promises, Patriarchs, Joseph

**Exodus** - Slavery, Plagues, Red Sea Crossing, Wilderness, Sinai, Law

**Numbers** - Spies, Rebellions, Priests, Attacks, Balaam

**Joshua** - Rahab, Crossing the Jordan, Jericho, Conquest, Dividing the Land

**Judges** - Deborah, Gideon, Jotham, Jephthah, Samson, Crimes and Consequences

**Ruth** - Naomi, Boaz, Redemption

**1 Samuel** - Hannah, Calling, The Ark, King Saul, David, Feats, Hiding, Abigail, Fleeing

**2 Samuel** - King David, The Ark, Bathsheba, Heirs, Struggles for Power, Return

**1 Kings** - King Solomon, The Temple, Israel Divided, Good and Bad Kings, Elijah

**2 Kings** - Elisha, Assyria, King Hezekiah, King Josiah, Babylon, Captivity

**Jonah** - Disobedience, Swallowing, Praying, Evangelizing, Repenting

## Texts:

- The Bible (any version)
- The 100 Most Important Events in Christian History
- Seven Men Who Rule the World from the Grave



Y2 texts available for purchase

## Course Description:

This two semester sequence is the second round through the Old Testament, covering Leviticus, 1 & 2 Chronicles, Psalms, Daniel, Song of Songs, and Ezra . Topics covered include Law, Worship, history, poetry and song, prophetic voice, marriage and family, and calling towards work and professional life. Projects include invitations to pray, opportunities to serve, strategies for study, and ideas for application. Bible readings are supplemented with digital resources that allow for further exploration. Grading is based on understanding as demonstrated in discussions, written assignments and project artifacts.

## Concepts Covered:

**Leviticus** - Mosaic Law and foundations of legal codes, worship and religious practice.

**1 & 2 Chronicles** - History of Judah

**Psalms** - Poetry, Prophetic voice, well being, coping, and wellness.

**Daniel** - Historical review of Babylonian era, prophetic voice, dreams, and integrity.

**Song of Songs** - Biblical courtship, marriage, sex education, and poetry.

**Ezra** - Taking on projects, calling, and working with others.

## Texts:

- The Bible (any version)

## Course Description:

This course can be one or two semesters. The intent of the course is for the learner to gain workplace or ministerial experience and thoughtful exploration of working with others. The learner is to spend 5-10 hours per week in an internship setting along routes that are viable paths the student wants to pursue. Weekly seminar style conversations will highlight themes throughout the year and discussion to cover practical applications. Final assessment is a recommendation letter or workplace evaluation to be conducted by the employer or ministry supervisor.

## Concepts Covered:

**On Ramping** - Humility, judgment, showing readiness to learn, giftedness

**Contributions** - Talent development, +10% rule, adding value in the workplace.

**Interpersonal Relations** - Learning styles, personality types, awareness, service leadership.

**Workplace Environment** - Types, conflict resolution, references, networking, and leadership.

**Task Management** - Overview/oversight, direction, tools for managing projects, communication skills, and representation of data.

**Spiritual & Personal Goals** - Prayer and work, calling, setting goals and taking steps, mentorship and seeking advice

**Commentary** - Cumulative review of scripture around workplace application, biblical thinking, and establishing order in life decisions.

## Texts:

- The Bible (any version)

## Course Description:

This two semester sequence is a literature-based approach to Modern History through the lens of the growth of Christianity worldwide. Topics covered include theology, denominations, schisms, wars, reformations, missions, martyrs, and more. Students explore the inauguration of the Church; the spread of the Gospel through missions; the impact of Christianity on the culture, government, technology and society; the development of traditions and more. Projects include analyzing art, cooking historical meals, participating in spiritual practices, interviewing community members, and listening to traditional music. This course uses a number of quality texts that provide a Christian perspective on historical events. Books are supplemented with digital resources that allow for further exploration. Grading is based on understanding as demonstrated in discussions, written assignments and project artifacts.

## Texts:

- **The Story of Christianity** - Beginning of Christianity to present day
- **More Than A Carpenter** - Historical accuracy of the biblical accounts of Jesus
- **The 100 Most Important Events in Christian History** - Over two thousand years of Christian history from Jesus to Christianity in the 21st century
- **From Jerusalem to Irian Jaya** - 5-8th centuries AD Early Middle Ages
- **What if Jesus Had Never Been Born?** - Potential consequences of Jesus' absence throughout history
- **The Church of the East** - 1st century AD to the 14th century AD
- **The Jesus I Never Knew** - Life and teachings of Jesus Christ as depicted in the Gospels



## Course Description:

This two semester sequence is a literature-based approach to world history from ancient history through the 16th century. Topics covered include ancient civilizations including nomadic pre-history, Egypt, Sumer, Israel, Babel, Assyria, China, Africa, Phoenicians, Babylon, Crete, Mycenaens, Persia, Greece, Americas, Rise of Rome, Aryans, Mauryans, Pax Romana, Christ, Fall of Rome, Britannia, Byzantium, India, Islam, Maori, Franks, Jihad, Charlemagne, Norse, England, Knights, Japan, Crusades, Diaspora, Mongols, Russia, Ottomans, Plague, Wars of Europe, Catholicism, Ghana/Mali, Moghuls, Exploration, Mayan/Incan, Martin Luther, Renaissance, Reformation, and Science. Students explore the differences in religious belief, culture, social structure, economy, technology across the ancient world and some of the major changes and developments that occurred. This course uses a number of quality texts that provide a Christian perspective on historical events. Books are supplemented with digital resources that allow for further exploration. Grading is based on understanding as demonstrated in discussions, written assignments and project artifacts.

## Texts:

- **Notgrass Exploring World History Part 1** - Ancient through Renaissance
- **The Bible Jesus Read** - Creation through Prophets
- **Cory's Ancient Fragments** - Primary source historical documents
- **Desire of the Everlasting Hills** - 1st century AD Roman Empire
- **St. Benedict's Rule for Monasteries** - 6th century AD, Fall of the Western Roman Empire
- **Byzantium** - 10th century AD, Byzantine Empire
- **God's Battalions** - Late 11th to late 13th century AD, Crusades
- **Peony** - Late 19th or early 20th century, Kaifeng, China
- **New Foxe's Book of Martyrs** - Various narratives throughout eras



Y2 texts available for purchase

## Course Description:

This two semester sequence is a literature-based approach to American history from pre-Constitutional inception to modern proceedings. Topics covered include: pre-American tribal agreements, exploration territorial law, settlement charters, magna carta, Declaration of Independence, Constitutional text and Amendments, constitutional challenges, Sharia Law, reconstruction law, patent law, 'just war' dialogues, New Deal socialization, democracy, republic, socialism, nationalism, communism, and globalization, global law movement, immigration law, digital law, privacy, and voting rights. Students explore the differences in religious belief, culture, social structure, economy, technology, human legal solutions and some of the major changes and developments that occurred. Books are supplemented with digital resources that allow for further exploration. Grading is based on understanding as demonstrated in discussions, written assignments and project artifacts.

## Texts:

- **Basic American Government** - Year long text and overview
- **The Iron Peacock** - Puritan society and settlers
- **Bury My Heart At Wounded Knew (Brown)** - Tribal law and application
- **Behind Rebel Lines** - Constitutional challenges and impact
- **Selecting a President** - Electoral process
- **The Hiding Place** - National Socialism
- **The U.S. Supreme Court** - Legal process and precedence setting
- **Money, Possessions, and Eternity** - Government and the individual
- **Next** - Innovation and governmental impacts
- **Outliers** - Change and societal impact of the individual

## Course Description:

This one semester internship is a project-based approach to American Civic education. Learners will engage in a political campaign, internship in a government office, and/or participate in party Basic Political Organizational Unit or local community events and activities. The goal is to be exposed to and participate in the political process from caucuses to administration of office.

## Concepts Covered:

- **Internship Practice** – Journaling and weekly discussions to process and make meaning of experiences in the internship experience.

## Course Description:

This two semester sequence uses great literature to connect students with history, build on timeless themes, and expose them to quality writing. Students learn to think about the foundational truths of the past and apply them to their lives today. Themes include faith, suffering, forgiveness, healing, perseverance, community and hope. The literature is sequenced to complement the Church History course and provide stories and examples set within those people groups studied. This allows for interdisciplinary lesson design and thematic modules. The books are supplemented with digital resources that allow for further exploration. Grading is based on understanding demonstrated in discussions, written assignments and project artifacts.

## Texts:

- **The Best of Father Brown** – Early 20th century
- **Oliver Twist** – Early 19th century England
- **The Ramsay Scallop** – 13th century, Post Crusades
- **A Solitary Blue** – Mid-to-late 1980s
- **Pride and Prejudice** – Late 18th century England Georgian era
- **Moon Over Manifest** – World War I Great Depression
- **Till We Have Faces** – Ancient Greek myth of Cupid and Psyche
- **Twelfth Night** – Fictional city of Illyria
- **The Hawk and the Dove** – 14th century, before the Reformation
- **The Wounds of God** – 14th century, before the Reformation
- **Jane Eyre** – Early 19th century England
- **Pilgrim's Progress** – Symbolic and allegorical
- **A Parcel of Patterns** – 1665, during the Great Plague
- **The Screwtape Letters** – Early 20th century Britain
- **The Shining Company** – Late 6th century Britain, Dark Ages or Early Medieval period
- **What Hearts** – 1950's to early 1960's, America
- **Robinson Crusoe** – late 17th and early 18th centuries

## Course Description:

This two semester sequence uses great literature, both nonfiction and fiction, to connect students with history, build on timeless themes, and expose them to quality writing. Students learn to think about the foundational truths of the past and apply them to their lives today. Themes include faith, leadership, perseverance, courage, and more. The literature is sequenced to complement the World History course and provide stories and examples set within those people groups studied. This allows for interdisciplinary lesson design and thematic modules. The books are supplemented with digital resources that allow for further exploration. Grading is based on understanding demonstrated in discussions, written assignments and project artifacts.

## Texts:

- **Noah: Man of Destiny** - Biblical fiction account of Noah and the flood found in the Book of Genesis.
- **The Priest** - Biblical fiction account of Aaron and the Exodus from Egypt
- **Cory's Ancient Fragments** - 2nd millennium BC to the 3rd century BC, Ancient Near East
- **Odyssey of Homer** - 12-11th centuries BC, Late Bronze Age
- **Confessions of Augustine** - 354 to 386 AD, Roman North Africa
- **Mohammad: Prophet and Statesman** - 7th century AD, Arabia
- **The Ballad of the White Horse** - Late 9th century AD, Battle of Ethandun
- **Pillars of the Earth** - 12th century England, Fictional town of Kingsbridge
- **World Without End** - 14th century England, Fictional Kingsbridge
- **Travels of Marco Polo** - 1271 and 1295, Asia, Yuan Dynasty
- **New Foixe's Book of Martyrs** - 16th and 17th centuries and more



Y2 texts available for purchase

## Course Description:

This two semester sequence uses great literature, both nonfiction and fiction, to connect students with American history, build on timeless themes, and expose them to quality writing. Students learn to think about the foundational truths of the past and apply them to their lives today. Themes include liberty, justice, the pursuit of happiness, courage, and unity with others. The literature is sequenced to complement the American History course and provide stories and examples set within those people groups studied. This allows for interdisciplinary lesson design and thematic modules. The books are supplemented with digital resources that allow for further exploration. Grading is based on understanding demonstrated in discussions, written assignments and project artifacts.

## Texts:

- **The Tempest & Amos Fortune** – Exploration and colonization
- **Tale of Two Cities & Poe** – Revolution, exploration, republics, and American exceptionalism
- **Hemingway & Twain** – American growth, toughness, and industrialization
- **Goodbye Mr. Chips** – American service leadership, reconstruction, post-Civil war writing and influences
- **Brave New World** – Futurism, citizenship, invention, and science fiction
- **Death of a Salesman** – American theater, motion pictures, entertainment literature, and the roots of pop culture.
- **Fahrenheit 451 & Enders Game** – Literature and technology, material and spiritual cultures, fantasy and reality, wealth.
- **The Wave** – Socialism and Communism, Biblical boldness, writing for activism, moral quandary.
- **Murder on the Orient Express** – Mystery writing, plot development, modern and global context and conversation, inter-cultural conversations.

## Course Description:

This two semester sequence builds on years of reading classic and contemporary books throughout the Portals curriculum. The course assumes past Portals exposure and new-to-Portals learners should take Literature I, II, or III. The onset of this course is a design process for the course to develop a reading list that further informs a career path or area of interest for the learner. "Readings" will vary based on the profession and may include trade journals, histories, manuals, video, research papers, biographies, and/or interviews. The book list is submitted for review by the teacher and approved for the year. The assessment for the course includes reviews, oral or written, of each of the reading elements and a summative paper on the profession or a key topic within the profession selected.

## Texts:

- Determined by the teacher and student

## Course Description:

This comprehensive writing project centers on the compilation of an almanac. Students pick topics and prompts that interest them in various genres including descriptive, expository, scientific, poetic, technical, narrative and persuasive. Writing prompts cover topics such as nature, society, family, faith, community, current events, personal interests, politics and more. Examples include recalling a childhood memory, recording an interview with a grandparent, maintaining data on weather patterns, composing a ballad and creating a business plan. The course includes over seventy writing prompts along with twenty-four lessons in creating an almanac and editing. The mentor text for this course is the Farmer's Almanac. Grading is based on writing consistency and completion of an almanac that includes a wide variety of genres.

## Concepts Covered:

**Descriptive** – Memories, nature journals, reflections

**Expository** – Interviews, testimonies, proposals

**Scientific** – Logs, predictions, data, profiles, research, studies

**Narrative** – Memories, news, stories, life lessons

**Poetic** – Aphorisms, sonnets, ballads,

**Technical** – How to, guides, codes, manuals

**Persuasive** – Debates, arguments, marketing, campaigns

## Texts:

- Farmer's Almanac



## Course Description:

Throughout the course of the year, learners will develop, design, and write for a monthly Gazette to exercise writing shorter pieces for an audience. The balance of writing well, while under a deadline, creates workplace experiences in the course. Students pick topics and prompts that interest their audience and write to inform and entertain an audience. Gazette editions can be thematic or generalized based on learner target audiences. Every month, the course returns learners to the planning board to cycle the publication rotation again. Grading is based on writing consistency and completion of an almanac that includes a wide variety of genres.

## Concepts Covered:

**Descriptive** - Memories, nature journals, reflections

**Expository** - Interviews, testimonies, proposals

**Scientific** - Logs, predictions, data, profiles, research, studies

**Narrative** - Memories, news, stories, life lessons

**Poetic** - Aphorisms, sonnets, ballads,

**Technical** - How to, guides, codes, manuals

**Persuasive** - Debates, arguments, marketing, campaigns

## Texts:

- Select examples and readings will be provided as links directly in the daily lesson plans



Y2 texts available for purchase

## Course Description:

Throughout the course of the year, learners will develop, design, and write a novel. The level and depth of the novel will vary based on the developmental level of the writer and the expectations they have for the story and audience. The course is designed to introduce writers to a larger project and mapping over the course of a school year toward completion. Each module covers a different stage of the writing process and guides the writer from beginning to publication. Grading is based on writing, project management, consistency, and the completion of a novel.

## Concepts Covered:

**Module 1** – The Hero’s Journey

**Module 2** – Building a Story Outline

**Module 3** – Building Protagonists and Antagonists

**Module 4** – Refining the Story Outline

**Module 5** – Writing for the Reader

**Module 6** – Advancing a Subplot and Weaving Elements

**Module 7** – Rising Tension, Climax, and Resolution

**Module 8** – Test Readers, Editing, and Revisions

**Module 9** – Preparation for Publication

## Texts:

- Select examples and readings will be provided as links directly in the daily lesson plans

## Course Description:

This is a senior level course in career, life, and trade in the form of a course long process in developing a small business plan and executing that plan with initial steps. Part of an education is the capacity to operate within the culture and have the tools necessary to work and produce value. Modules will be primarily prompted to develop the various elements of a business plan with the intent to attempt to start a business for profit with Christian ethics and values exercised. Assessments include not only the business plan, but also quantitative and qualitative measures of productivity of the enterprise.

## Unit Outline:

**Module 1** - Problem/Need Identification and Solving

**Module 2** - Project Management

**Module 3** - Introduction to Business Applications

**Module 4** - Personal Finance and Projections

**Module 5** - Market Research and Prototyping

**Module 6** - Branding

**Module 7** - Advertising and Promotion

**Module 8** - Financial Accounting

**Module 9** - Management and Organizational Growth

**Module 10** - Business Plan and Proof of Concept

## Texts:

- Reading provided in lesson plans

## Course Description:

This two semester sequence is a survey of many of the life skills needed to maintain a home, manage a household and pursue a healthy lifestyle. Topics include canning, composting, gardening, wiring, and painting in addition to the traditional home economic skills like cooking, sewing, first aid, exercise and nutrition. Using resources created by professionals, students gain practical experience in caring for a house such as the HVAC systems, appliances, waste disposal systems and structural integrity. Grading for this course is based on students' successful completion of each life skill covered.

## Unit Outline:

**Module 1** – Automobiles, Painting, Harvest, Composting

**Module 2** – Canning, Winterizing, Candles, Food Prep

**Module 3** – Nutrition, Diet, Exercise, Lotions

**Module 4** – HVAC, Baking, Hospitality, Oils

**Module 5** – Plumbing, Laundry, Pet Care, Appliances

**Module 6** – Insulation, Virus/Diseases, Organization, Electricity

**Module 7** – Cooking, Cardio Health, First Aid, Sewing

**Module 8** – Masonry, House Safety, Gardening, Power Tools

**Module 9** – Septic Systems, Confections, Grilling, Framing

## Texts:

- None (Content provided directly in lesson plans)



Y2 texts available for purchase

## Course Description:

This two semester sequence is an introduction to how living organisms are designed, how they interact with one another, and how they interact with their physical environment. Topics covered include classification, chemical processes, RNA and DNA, cells, photosynthesis, cellular respiration and reproduction, and biotechnology. A survey of the different kinds of organisms found in nature and the various types of ecosystems is also provided as students explore the biogeochemical cycles that keep environments hospitable to life. The laboratory components include observing with microscopes, practicing dissection, identifying stages of mitosis, examining enzymes and fungi, culturing bacteria and more. Text: *Discovering Design with Biology*, by Dr. Paul Madtes Jr. and Dr. Jay L. Wile. Supplemental resources and enrichment activities are integrated by Portals Academy. Grading for this course is based on the forty plus possible experiments along with sixteen content modules, review, and test assessments.

## Unit Outline:

**Module 1** – The Characteristics of Life, Metabolism, Homeostasis, Stimulus, Adaptation, Reproduction and heredity, DNA, Growth and development, Nomenclature, Philosophy of Science, The Scientific Method, Energy Flow, Energy in Chemicals, Natural Selection. Experiments, Review and Test.

**Module 2** – Water, Carbohydrates, Lipids, Proteins, Nucleic Acids, Chemical Evolution. Experiments, Review and Test.

**Module 3** – Cell theory, Prokaryotes, Eukaryotes, Organelles, Membrane Transport, ATP, Photosynthesis, Cellular Respiration, Evolution: Endosymbiotic Theory. Experiments, Review and Test.

**Module 4** – Cell Cycle, Apoptosis, Budding, Binary Fission, Mitosis, Meiosis, Human Life Cycle, Reproduction and Artificial Intelligence. Experiments, Review and Test.

**Module 5** – Gregor Mendel and Simple Inheritance, Patterns of Inheritance, Non-Mendelian Inheritance, Environment and Genetics, Human Genome, Project and Linkage, Chromosomal and Nucleotide Abnormalities, Evolution: Mutations and Information. Experiments, Review and Test.

**Module 6** – Biotechnology, Restriction Endonucleases, Gel Electrophoresis, Polymerase Chain Reaction (PCR), DNA Analysis, Genetic Engineering, Biotechnology Products, Gene Therapy, Genomics, CRISPR, Bioethics. Experiments, Review and Test.

## Unit Outline Cont:

**Module 7** – Microbiology, Archaea, Eubacteria, Classification of Bacteria, Viruses, Viroids, and Prions, Evolution Challenges. Experiments, Review and Test.

**Module 8** – Fungi, Protists, Symbiosis, Diseases Caused by Fungi, Evolution – Classification Using Phylogenetics. Experiments, Review and Test.

**Module 9** – Invertebrate Characteristics, Porifera, Ctenophora and Cnidaria, Platyhelminthes, Echinodermata, Mollusca, Nematoda, Annelida, Arthropoda, Chordata, Challenges for Evolution. Experiments, Review and Test.

**Module 10** – Vertebrate Characteristics, Fish, Agnatha, Chondrichthyes, Osteichthyes, Amphibians, Caudata, Anura, Apoda – Caecilians, Evolution of Fish to Amphibians. Experiments, Review and Test.

**Module 11** – Reptiles, Birds, Mammals, Challenges for Evolution. Experiments, Review and Test.

**Module 12** – Primates, Humans, Nervous System, Cardiovascular System, Immune System, Digestive System, Respiratory System, Renal System, Reproductive Systems, Imago Dei, Human Evolution. Experiments, Review and Test.

**Module 13** – Plants, Root System, Stem System, Leaf System, Flowers, Fruits, and Seeds, Non-vascular, Seedless Vascular, Seed-Making, Angiosperm Explosion. Experiments, Review and Test.

**Module 14** – Germination, Photosynthesis, Vascular System Movement, Nitrogen Fixation, Reproduction, Growth, Photoperiodism, Plant Hormones, Tropism, Plants and Personhood. Experiments, Review and Test.

**Module 15** – Energy Flow, Global Biogeochemical Cycles, Climate, Soil, Conservation Biology, Biodiversity, Drivers of Change, Sustainability, Climate Change. Experiments, Review and Test.

**Module 16** – Interactions in Populations and Communities, Population growth, Ecological succession, Ecosystems and the Biosphere, Fine-Tuning in Ecosystems. Experiments, Review and Test.

## Texts:

- Berean Builders: Discovering Design through Biology
  - Textbook
  - Tests
  - Lab Kit



Y2 texts available for purchase

## Course Description:

This two semester sequence is a comprehensive survey of modern descriptive, inorganic, and physical chemistry for students with a good exposure to general chemistry in earlier grades. Topics covered include atomic structure and molecular theory, the nature of matter, chemical equations, stoichiometry, polyatomic ions, acid/base equilibria, solubility equilibria, phases of matter, thermodynamics, kinetics, and reductions or oxidation reactions. Examples are drawn from chemical, biological, and materials systems. The laboratory components include an introduction to quantitative measurements, investigation of the properties of the important elements and their compounds, and experiments associated with the common ions and their separation and more. The course includes over forty possible experiments along with sixteen content modules, review, and test assessments.

## Unit Outline:

**Module 1** - Measurement and Units - Metric System, Manipulating Units, Conversion, Derivations, Making Accurate Measurements, Scientific Notation, and Density. Experiments, Review and Test.

**Module 2** - Law of Conservation, Elements and Compounds, Law of Definite Proportions, Dalton's Theory, Law of Multiple Proportions, Rutherford's Model, Fission, and Isotopes. Experiments, Review and Test.

**Module 3** - Periodic Table, Inverse Proportions, Waves, Frequency, The Bohr Model, and Spectroscopy. Experiments, Review and Test.

**Module 4** - Atomic Orbitals, Particle Duality, Electron Configurations, Ions and Ionic Compounds, Atomic Bonding, Periodic Table Changes, and Electrolytes. Experiments, Review and Test.

**Module 5** - Covalent Compounds, Lewis Dot Structure, Single/Double/Triple Bonds, Atomic Radius, VSEPR Theory, Molecular Polarity, Molecular Shapes, and Colloids. Experiments, Review and Test.

**Module 6** - Physical Change and Conversion, Density, Phase Symbols, Balancing Equations, Chemical Reactions, Decomposition, Displacement, and Combustion. Experiments, Review and Test.

**Module 7** - Stoichiometry, Mole Conversions, Hygroscopy, Anhydrous Materials, Limiting Reactants, and Applications of Stoichiometry. Experiments, Review and Test.

## Unit Outline Cont:

**Module 8** – Chemical Experimentation Theory, Data Collection, Calculating Percent Yield, Empirical Formulas, Conversion from Molecular to Empirical Formulas, Calculating Percent Compositions, and Polyatomic Ions. Experiments, Review and Test.

**Module 9** – Solutions, Use of Solutions in Chemistry, Composition and Concentration, Solvents, Pressure and Temperature in Relation to Solvents, Matter Phases in Chemistry, Displacement, and Using Molarity in Chemistry, and Beer's Law. Experiments, Review and Test.

**Module 10** – Boyle's Law, Barometers and Chemistry, Combined Gas Law, Extrapolation and Reliability of Testing, Ideal Gas, Mole Fractions, and Dalton's Law of Partial Pressures. Experiments, Review and Test.

**Module 11** – Acids, Bases, Litmus Testing, Identification of Acids and Bases, Neutralization, Universal Indicator, Titrations, Dilution Issues, and Titration Indicators. Experiments, Review and Test.

**Module 12** – Reduction, Oxidation, Redox Reactions, Calculation of Oxidization, Color Indicators in Reduction and Oxidation, Galvanic Cells, Anodes and Cathodes, Cells and Batteries, and Electroplating. Experiments, Review and Test.

**Module 13** – Heat and Temperature, Unit Conversions, Joule, Heat Capacity, Calorimetry, Latent Heat, Chemical Heat Conversion Calculations, Exothermic and Endothermic Reactions, Potential and Kinetic Energy, Chain Reactions in Atomic and Nuclear Energy. Experiments, Review and Test.

**Module 14** – Thermodynamics, Use of Bond Energy, Enthalpy, Calculation of Reactions, ThermoChemical Equations, Laws of Thermodynamics, Entropy, and Gibbs Free Energy. Experiments, Review and Test.

**Module 15** – Kinetics Reactions, Reaction Rates, Collision Theory, Charting Reactions, Catalysts and Activations, Hetero and Homogeneous Catalysts, and Catalytic Converters. Experiments, Review and Test.

**Module 16** – Chemical Equilibrium, Constant Calculations, Reaction Quotient, LeChatelier's Principle, Predicting Equilibrium and Shifting Equilibrium, and Oscillating Reactions. Experiments, Review and Test.

## Texts:

- Berean Builders: Discovering Design through Chemistry
  - Textbook
  - Tests
  - Lab Kit



Y2 texts available for purchase



## Course Description:

This two semester sequence is an introduction to the basics of physics. Topics covered include Newton's Laws of Motion, Newton's Law of Universal Gravitation, work, energy, and power, waves, sound, and light, electrical potential, electric fields, circuits, resistance, and current, magnetism, and magnetic fields. The laboratory components include measuring the acceleration due to gravity, making a one-dimensional Newton's Cradle, making simple circuits, and making an electromagnet. Text: *Discovering Design with Physics*, by Dr. Jay L. Wile. Supplemental resources and enrichment activities are integrated by Portals Academy. Grading for this course is based on the thirty five plus possible experiments along with sixteen content modules, review, and test assessments.

## Unit Outline:

**Module 1** – Sir Isaac Newton, Speed, Velocity, Displacement, First Law of Motion, Motion. Experiments, Review and Test.

**Module 2** – The Mathematical Definition of Acceleration, Graphs, Newton's Second Law, Equations of Motion, Free Fall, Measuring the Acceleration Due to Gravity, Difference Between Mass and Weight. Experiments, Review and Test.

**Module 3** – Newton's Third Law, Force, Friction, Tension, Air Resistance. Experiments, Review and Test.

**Module 4** – Two-Dimensional Vectors, Adding and Subtracting, Mathematical Properties of Two-Dimensional Vectors, Adding Vectors Analytically. Experiments, Review and Test.

**Module 5** – Two-Dimensional Motion, Projectiles, Gravity's Effect, Range Equation, Measuring Velocity, Air Resistance. Experiments, Review and Test.

**Module 6** – Translational Equilibrium, Accelerometer, Static Translational Equilibrium, Dynamic Translational Equilibrium, Measuring the Coefficient of Static Friction, Non-Equilibrium Motion on an Incline, Analyzing the Translational Motion of Two Objects, Rotational Motion, Rotational Equilibrium. Experiments, Review and Test.

**Module 7** – Uniform Circular Motion, Centripetal Force, Terms and Equations, Gravity, Centripetal Force, Earth, Solar System, Kepler's Laws, Centrifugal Force. Experiments, Review and Test.

**Module 8** – Work and Energy, Kinetic and Potential Energy, Friction, Work, Rotational Energy, Energy and Power, Household Energy and Power. Experiments, Review and Test.

## Unit Outline Cont:

**Module 9** – Momentum, Impulse, Time, Conservation of Momentum, Collisions, Angular Momentum. Experiments, Review and Test.

**Module 10** – Hooke’s Law, Periodic Motion in a Mass/Spring System, Properties of a Mass/Spring System, Terminology and the Use of Equation, Energy in a Mass/Spring System, Simple Pendulum, Friction, Keeping Time. Experiments, Review and Test.

**Module 11** – Kinds of Waves, Sound Waves, Wavelength, Frequency, and Amplitude, Doppler Effect, Light Waves. Experiments, Review and Test.

**Module 12** – Law of Reflection, Flat Mirrors, Curved Mirrors, Ray Tracing, Concave Spherical Mirrors, Convex Spherical Mirrors, Refraction, Snell’s Law, Rainbows, Converging, Refraction and Diverging Lenses, Corrective Lenses. Experiments, Review and Test.

**Module 13** – Charging Objects, Induction and Conduction, Electrostatic Force, Centripetal Force, Multiple Charges, Electric Field, Conductors, Insulators, Michael Faraday. Experiments, Review and Test.

**Module 14** – Electric Potential, Potential Difference, Rating of a Battery, Leyden Jar, Capacitor, Electric Circuits, Conventional Current. Experiments, Review and Test.

**Module 15** – Current Flow, Ohm’s Law, Simple Circuits, Series, Parallel Circuits and Fuses, Circuit Breakers, Capacitors and Multiple Batteries, André–Marie Ampère. Experiments, Review and Test.

**Module 16** – Magnets, Poles, Basic Law of Magnetism, Magnetic Fields, Speed of Light, Electricity, Ørsted’s Experiment, Faraday’s Law of Magnetic Induction. Experiments, Review and Test.

## Texts:

- Berean Builders: Discovering Design through Physics
  - Textbook
  - Tests



Y2 texts available for purchase

## Course Description:

This course uses manipulatives to illustrate and teach math concepts with the Math-U-See Text. Learners build understanding via using a mastery-based approach suitable for various learning styles. The course covers points, rays, lines, sets, angles/lines, polygons, perimeter, circles, volume, radicals, pythagorean theorem, proofs, congruency, transformations, and initial trigonometry concepts. Learners have testing with each unit, projects, and progression measures.

## Unit Outline:

**Module 1** – Points, rays, lines, and line segments

**Module 2** – Set theory

**Module 3** – Types of angles and lines

**Module 4** – Polygons

**Module 5** – Perimeter and area

**Module 6** – Circles and ellipses

**Module 7** – Volume and surface area of solids

**Module 8** – Radicals

**Module 9** – Pythagorean theorem

**Module 10** – Logic and proofs

**Module 11** – Congruency and similarity

**Module 12** – Transformations

**Module 13** – Trigonometric functions

## Texts:

- Math-U-See Geometry Universal Set



Y2 texts available for purchase

## Course Description:

This course uses manipulatives to illustrate and teach math concepts with the Math-U-See Text. Learners build understanding via using a mastery-based approach suitable for various learning styles. The course covers Scientific notation, operations, polynomials, fractional exponents, binomials, quadratic formulas, discriminants, ratios, graphing, and equation solving. Learners have testing with each unit, projects, and progression measures.

## Unit Outline:

**Module 1** – Scientific Notation

**Module 2** – Operations with radicals

**Module 3** – Factoring polynomials

**Module 4** – Fractional exponents

**Module 5** – Imaginary and complex numbers

**Module 6** – Binomial theorem

**Module 7** – Quadratic formula

**Module 8** – Discriminants

**Module 9** – Ratios and unit multipliers

**Module 10** – Graphs of lines

**Module 11** – Conic sections: circles, ellipses, parabolas, and hyperbolas

**Module 12** – Solving systems of equations to solve problems

## Texts:

- Math-U-See Algebra II Universal Set



Y2 texts available for purchase

## Course Description:

This course uses manipulatives to illustrate and teach math concepts with the Math-U-See Text. Learners build understanding via using a mastery-based approach suitable for various learning styles. The course covers functions, cofunctions, sines, cosines, trigonometric expressions, radian measure, vectors, logarithms, graphing, sequence and series, inequalities, radicals, and absolute values. Learners have testing with each unit, projects, and progression measures.

## Unit Outline:

**Module 1** - Functions and cofunctions

**Module 2** - Trigonometric expressions and identities

**Module 3** - Laws of sines and cosines

**Module 4** - Radian measures

**Module 5** - Polar equations and graphs

**Module 6** - Vectors

**Module 7** - Logarithms

**Module 8** - Graphing trigonometric functions

**Module 9** - Sequences and series

**Module 10** - Equations and inequalities with radicals and absolute values

**Module 11** - Limits

## Texts:

- Math-U-See Pre-Calculus Universal Set



Y2 texts available for purchase

## Course Description:

This is a senior level course in career, life, and trade in the form of an internship and advising process for learners to develop interest, skill, and experience within a certain field of practice. The primary activity of the course is an internship experience with supplemental devotionals and projects. Modules will be primarily journal prompts and tools that supplement the workplace internship. Assessments include a course long journal keeping, gift/talent evaluations, and a final internship performance review by the cooperating supervisor.

## Unit Outline:

**Module 1** – Trade exploration and identifying a course internship

**Module 2** – Applications and Interviews

**Module 3** – Semiotic Systems and Workplace Culture

**Module 4** – Skill building

**Module 5** – Workplace concepts

**Module 6** – Advancement and performance reviews

**Module 7** – Life-Work Balance and Spiritual Calling

**Module 8** – Networking and Good Will

**Module 9** – Exiting a Workplace on Good Terms

## Texts:

- None (select readings provided in daily lesson plans)



Y2 texts available for purchase



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