CURRICULUM

MIDDLE SCHOOL COURSE DESCRIPTIONS

BIBLE

FIFTH & SIXTH GRADE

COURSE DESCRIPTION

The purpose of this class is to guide the students through reading key passages in the New Testament. Our goal will be to see Christ as a real person - a person whose life prompted a whole new way of thinking about redemption and a life lived in obedience to God. We will also memorize Ephesians 6 over the course of the year.

COURSE SKILLS

The students who completes this course should:

- Have an introductory level knowledge of each book of the New Testament.
- Be familiar with themes in the Gospels, Epistles, and Revelation.
- Be able to use the methods discussed in class for personal study of the Scripture.
- Memorize a chapter of the New Testament.

ESSENTIAL THEMES FOR STUDY

- The similarities and differences of intention and audience among the gospel writers.
- The various depictions of Christ throughout the New Testament and how they communicate a full, real person.
- Trends that identify the various epistle writers. (thematic and grammatical)
- The importance of a close reading of Scripture when studying the Bible.

SEVENTH GRADE BIBLE

COURSE DESCRIPTION

This course is an introduction to the background and content of the Book of Acts. Special attention will be given to the historical situation of the early Church; main events and persons in the first century Church; the prime role of the Holy Spirit in bringing the gospel message to the ends of the earth; the extensive references to the Old Testament by the church fathers; and Paul's evangelical journeys to the Gentiles. This course provides a foundation for the Old and New Testament Survey course and more advanced Bible courses, such as Systematic Theology and Apologetics.

COURSE OBJECTIVES

- Active Thinking - sound, fact based reasoning
- Effective Communicating - writing and speaking with persuasive form
- Integrated Understanding - demonstrating a grasp of the relationship between diverse concepts
- Meaningful Application - toward the solution of human problems and challenges
- Sharpening a Christian Worldview

COURSE SKILLS

The student who completes this course should:

- Be able to reason through Scripture and defend one's beliefs by pointing to specific chapters and verses in Acts and elsewhere in the Bible.
- Be able to discuss and argue persuasively about Acts and the early church.
- Be able to cross-reference to develop a deeper understanding of the relationship that Acts has to the whole Bible.
- Apply the lessons and theological truths learned in Acts to his or her daily life.

ESSENTIAL COURSE THEMES

Fall Semester

- Introduction to Acts
- Historical background
- Persecution leading to the spread of The Way
- The formation of the early church and the first martyr
- Peter's vision and missionary work to Jews and Gentiles
- Peter's defense before the church at Jerusalem

Spring Semester

- Paul's conversion
- The first missionary journey
- The Jerusalem council and the debate about Gentile observance of the law
- The second and third missionary journeys
- Paul's trial and journey to Rome

EIGHTH GRADE BIBLE

COURSE DESCRIPTION

The 8th Grade Bible Course at Northeast Christian Academy is a survey course of the character of God Himself—what is known by theologians as "theology proper." The class is conducted in a style combining instructor lecture and class discussion.

COURSE OBJECTIVES

- Know what they believe about God from Scripture and why they believe it and how to articulate a specific point of view and defend it in open discussion.
- Learn to think biblically and express their views accordingly.
- Grow in the understanding of the Bible and its utter inerrancy, reliability, and sufficiency.
- Acquire a foundational understanding of the character of God as revealed in the Old and New Testaments.

COURSE SKILLS

- Understand how to correctly interpret the Bible based on evangelical hermeneutical principles.
- Be aware of the controversies surrounding different interpretations of the Scriptures, making comparisons to the very words of Scripture.
- Further develop student writing skills to persuasively argue a specific point of view, using correct grammar, spelling, punctuation, capitalization, and an ever-expanding vocabulary.

COURSE THEMES

Essential themes studied during the course will include the following:

- The Character and Nature of God as Revealed in the Bible
- The Progressive Revelation of Important Biblical Doctrines
- The Will of God for All of His Creation
- The Application of Basic Interpretive Principles for the Major Genres of the Bible

LANGUAGE ARTS

FIFTH GRADE

COURSE DESCRIPTION

5th grade is a pivotal year for grammar and language arts learning. Students will be solidifying grammar, spelling, and language mechanic (punctuation) skills. Students will expand reading skills to a more in-depth understanding of figurative language, literary devices, plot, character and analysis. Students will continue to expand and develop foundational writing skills such as voice, expression, and organization.

COURSE OBJECTIVES

- Read orally and individually at or above grade level books with 85-90% accuracy.
- Read for information, to predict outcomes, draw conclusions, sequence events, make inferences, recall facts and details, and distinguish fact from opinion.
- Produce written work: book reports, narrative essays, business letters, persuasive essays, research reports, creative stories, poetry, and written instructions.
- Recognize and utilize the five steps to the writing process: planning, drafting, proofreading, finalizing, and publishing.

COURSE SKILLS

- Define and identify figurative language including metaphors, similes, onomatopoeia, imagery, repetition, alliteration, imagery, repetition, alliteration, etc.
- Create and label a plot pyramid and utilize pyramid to analyze literary plot.
- Identify story elements, point of view, tone, and mood within a novel.
- Read grade level textbooks (using SQ3R or similar techniques) to comprehend.
- Utilize reference materials such as dictionaries, thesauruses, encyclopedias, to extend and retain information.
- Acquire and use extensive vocabulary through wide reading, context clues, and the use of Vocabulary Workshop.
- Write using standard conventions and mechanics.
- Revise and edit own writing using standard editing notations.
- Identify and label parts of speech- nouns, pronouns, verbs, helping verbs, prepositions, adverbs, adjectives, article adjectives, interjections and conjunctions

COURSE THEMES

Essential themes studied during the course will include the following:

- Reading, examining, and interpreting good literature and writing
- Improving reading comprehension
- Identification of primary parts of speech to enhance future foreign language learning
- Expansion of vocabulary with emphasis upon Greek and Latin roots
- Composing grade appropriate writings – narrative, creative, persuasive, research, poetry

SIXTH GRADE LANGUAGE ARTS

COURSE DESCRIPTION

6th Grade Language Arts continues to build upon the foundation laid in the elementary grades. Grammar and mechanics skills are practiced and applied to writing. Vocabulary study becomes more focused in scope. Writing is concentrated on organizing and developing the three-paragraph essay. Elements of literature are taught through the reading of novels, poetry, short story and mythology.

COURSE OBJECTIVES

- Understand the listening process, and be able to follow spoken directions, listen to various oral presentations and stories, and respond appropriately in discussion.
- Read with increased comprehension by identifying main idea and details, forming generalizations, summarizing, drawing conclusions, determining author's purpose, distinguishing fact and opinion, making predictions, paraphrasing, identifying point of view, making inferences, identifying cause and effect.
- Read a variety of texts for different purposes, i.e. to research, to understand, to interpret, to enjoy, analyze and compare.
- Read fluently and with understanding in texts at appropriate difficulty levels, both silently and aloud.
- Increase vocabulary by using context clues, analyzing word structure, finding synonyms and antonyms and memorizing definitions along with other strategies found in Vocabulary Workshop.

COURSE SKILLS

- Develop speaking skills by reading aloud a variety of texts, and presenting projects.
- Identify various elements of literature within assigned novels, poetry and short stories.
- Annotate novels to identify elements of literature.
- Understand and identify various grammar elements i.e... eight parts of speech, parts of the sentence, phrases and clauses and kinds of sentences.
- Diagram sentences showing understanding of sentence structure.
- Organize and write three and five paragraph essays, i.e. narrative, expository, descriptive, and informational. Write business and personal letters using proper format.
- Proofread for correct usage (modifier, verb and pronoun), spelling, punctuation, capitalization, fragments and run-ons.

COURSE THEMES

Essential themes studied through literature will include the following:

Social Class Structure
Heroes and Heroines
Coming of Age
Friendship
Neglect/Abuse
Fate
Power of Love, Hate and Forgiveness
Freedom
Faith
Temporary vs. Eternal
Danger and Courage
Adventure
Quest

SEVENTH GRADE LANGUAGE ARTS

COURSE DESCRIPTION

7th Grade Language Arts prepares the middle school student to begin thinking more critically and to become more independent in his/her learning practices. The elements of grammar, vocabulary, literature and writing, although taught separately at times, become well integrated as the student engages in more advanced writing assignments and classroom discussion. The student is also challenged to become more organized, not only in the management of his/her schedule and supplies, but also in the processes of thinking and writing.

COURSE OBJECTIVES

- Demonstrate the ability to listen critically by following spoken directions, taking organized notes, and engaging in productive literary discussions.
- Speak clearly and appropriately for different purposes, i.e. presentation of projects and/or speeches, classroom discussion, and recitation of prose/poetry.
- Read fluently and with understanding in texts at appropriate difficulty levels, both silently and aloud.
- Read a variety of texts for different purposes, i.e. to research, to understand, to interpret, to enjoy, analyze and compare.
- Write three and five paragraph essays, i.e. narrative, persuasive, descriptive, expository, expressive, literary responses, correspondence, and character analysis.
- Increase vocabulary by using context clues, analyzing word structure and various other strategies found in Vocabulary Workshop.

COURSE SKILLS

- Increase reading comprehension by using a variety of strategies with texts of increasing levels of difficulty, i.e. identifying main idea, forming generalizations, summarizing, drawing conclusions, determining author's purpose, distinguishing fact and opinion,
- Identify various elements of literature within assigned novels, poetry and short stories.
- Annotate novels to identify elements of literature.
- Apply appropriate levels of grammar conventions i.e. understanding and identifying: eight parts of speech, parts of a sentence, phrases and clauses, sentence structure.
- Diagram sentences showing understanding of sentence structure.
- Apply writing strategies, i.e. *t*he writing process, consider audience and purpose, evaluating and revising
- Proofread for correct usage (modifier, verb and pronoun), spelling, punctuation, capitalization, fragments and run-ons, as well as MLA format.

COURSE THEMES

Course themes that will be studied during the course will include the following:

Coming of Age/Self-Discovery
Prejudice/Stereotype
Forces of Nature
War
Courage/Honor
Friendship
Loyalty
The Noble Sacrifice
Freedom
Betrayal
Journey/Quest
Family

EIGHTH GRADE LANGUAGE ARTS

COURSE DESCRIPTION

8th Grade Language Arts provides and reinforces a solid foundation in reading, writing, vocabulary and critical thinking skills. As the students continue the quest to become more independent in their learning practices, they will be provided the opportunity to read widely in classic and contemporary selections, informational texts, and a variety of literary genres. Through this reading and systematic word study, students will increase comprehension and become more developed in their ability to think critically and write persuasively.

COURSE OBJECTIVES

- Understand the listening process, and be able to follow spoken directions, listen to various oral presentations and stories, and respond appropriately in discussion.
- Develop speaking skills by reading aloud a variety of texts, and presenting projects.
- Read with increased comprehension by identifying main idea and details, forming generalizations, summarizing, drawing conclusions, determining author's purpose, distinguishing fact and opinion, making predictions, paraphrasing, identifying point of view, making inferences, identifying cause and effect.
- Read a variety of texts for different purposes, i.e. to research, to understand, to interpret, to analyze, to synthesize, to evaluate and compare.
- Read fluently and with understanding in texts at appropriate difficulty levels, both silently and aloud.

COURSE SKILLS

- Identify various elements of literature within assigned novels, poetry and short stories. Annotate novels and keep dialectical journals to identify elements of literature.
- Increase vocabulary by using context clues, analyzing word structure, finding synonyms and antonyms and memorizing definitions along with other strategies found in *Vocabulary Workshop.*
- Understand and identify various grammar elements i.e. parts of speech, parts of the sentence, phrases and clauses and kinds of sentences in order to write persuasively.
- Organize and write various five paragraph essays, i.e. narrative, expository, persuasive, and descriptive.
- Identify and write a good thesis statement.
- Write business and personal letters using proper format.
- Proofread for correct usage (modifier, verb and pronoun), spelling, punctuation, capitalization, fragments and run-on sentences.

COURSE THEMES

Course themes that will be studied during the course will include the following:

Coming of Age/Self-Discovery
Prejudice/Stereotype
Forces of Nature
War
Courage/Honor
Friendship
Loyalty
The Noble Sacrifice
Freedom
Betrayal
Journey/Quest
Family
Purpose

MATH

FIFTH GRADE

COURSE DESCRIPTION

The fifth grade math course includes the fundamental functions of mathematics (addition, subtraction, multiplication, division) and related topics (story problems, averaging, Roman numerals, rounding and converting measures) In addition, the course presents an introduction to decimals, geometry, fractions, temperature, and graphs.

COURSE GOALS

The students will:

- Master all addition, subtraction, multiplication, and division fact using correct terminology.
- Understand place value to the billions.
- Review borrowing and carrying.
- Master multiplication problems with up to four digits in the multiplier.
- Master division problems with up to three digits in the divisor.
- Review story problems.
- Review number averaging.
- Review Roman numerals.
- Understand rounding off whole numbers, decimals, and money.
- Understand English and metric measures.

- Convert measures within the same system and solve measurement equations.
- Understand fractions, including:
    - Terminology.
    - Solving problems containing fractions.
    - Adding and subtracting fractions and mixed numbers with a common denominator or having to find a common denominator.
    - Recognizing proper and improper fractions.
    - Changing mixed numbers to improper fractions and changing improper fractions to mixed or whole numbers.
    - Writing a remainder as a fraction.
    - Multiplying fractions using cancellation.
    - Writing a fraction as a decimal.
    - Working division problems involving fractions.
- Understanding factoring.
- Find the least common multiple.
- Understand divisibility rules.
- Understand decimals, including:
    - Writing decimals as fractions.
    - Adding, subtracting, multiplying, and dividing decimals.
    - Comparing decimals.
    - Renaming decimals.
    - Recognizing terminating and repeating decimals.
    - Learning common fraction and decimal equivalents.
- Convert from Celsius scale to Fahrenheit scale and from Fahrenheitto Celsius.
- Solve equations.
- Read and draw pictographs, bar graphs, and line graphs.
- Read scale drawings.
- Recognize geometric shapes and figures.
- Find the perimeter of a rectangle and a square using the formulas.

BIBLICAL GOALS

- To develop within the student an understanding of the predictability, exactness and clarity of math as a reflection of God's nature.
- To demonstrate that numbers, counting, accuracy in measurement and absolutes are evidence of the character of God.
- Math is God's gift to man to create orderliness, accuracy, and preciseness.

OBJECTIVES WITH COURSE OUTLINE

- First Nine Weeks
    - Review counting sequences.
    - Review place value to the billions
    - Compare and order whole numbers
    - Round whole numbers
    - Master decimal place value to the thousandths
    - Compare and order decimals
    - Round decimals
    - Problem solve using decimals
    - Add and subtract whole number and decimals
    - Estimate whole number sums
    - Add and subtract large whole numbers
    - Add and subtract numbers with place values that include tenths and hundredths, and thousandths.
    - Memorize the properties of addition
    - Estimate decimal differences
    - Formulate equivalent decimals
    - Become familiar with the process of solving two step problems
    - Memorize the properties of multiplication
    - Multiply multiples of 10,100, 1000
    - Identify least common multiples
    - Evaluate factors and least common factors
    - Multiply by one digit factors
    - Estimate products
- Second Nine Weeks
    - Multiply two and three digit factors
    - Problem solve using two digit factors
    - Memorize the rules of division
    - Explore divisibility
    - Understand quotients and remainders
    - Estimate quotients
    - Divide by two and three digit numbers
    - Calculate averages
    - Divide with zero as a quotient
    - Divide using larger numbers
    - Investigate division patterns
    - Estimate quotients with one and two digit divisors
    - Adjust and estimate quotients
    - Multiply and divide decimals
    - Estimate decimal products
    - Multiply a decimal by a whole number
    - Multiply with zeros
    - Divide decimals by whole numbers
    - Divide decimals using zeros
    - Divide decimals by 10, 100, 1000
- Third Nine Weeks
    - Investigate Geometric Principals

Line relationships

Naming rays and angles

Construct and manipulate pantomimes (emphasize rotation, reflection and slides)

Recognize and name polygons and quadrilaterals

Solids

Investigate the relationship of polygons and solids

Circles

Line symmetry

Motion in geometry, congruence and similarity

Number Theory and Fractions

Review meaning of fractions

Relationship of fractions and decimals

Prime and composite numbers

Simplify fractions

Least common multiples

Improper fractions and mixed numbers

Problem solve using fractions

Geometry and fractions

Add and subtract like fractions

Add and subtract mixed numbers

Rename and subtract mixed numbers

Estimate fractional sums and differences

Find least common denominators

Multiply fractions

Multiply fraction and whole numbers

Multiply whole numbers

Estimate fractional products

Divide by fractions

Problem solve using fractions

- Fourth Nine Weeks

Ratios and Proportions

explore ratios, proportions and percent

find equal ratios

solve proportions

solve decimals and per cent

Measurement

customary units of measurement. of capacity, time, weight, temperatures

Metric units of measure of length, capacity and mass

Area, perimeter, and volume.

area of rectangles.
area of triangles.

finding irregular surface area. d. find volume.

Overview of Statistics, graphing and probability

METHODOLOGY

- Textbook exercises.
- Lecture.
- Board/overhead projector work.
- Student's individual whiteboard work.
- Speed drills (multiplication).
- Games.
- Manipulative.
- Flashcards.

EVALUATION

- Student class work and homework.
- Tests.
- Speed drill proficiency.
- Class participation.
- Observation.

RESOURCES

- Math 5, Harcourt, 2003.
- Student white boards.
- Overhead visuals.
- Games.
- Manipulative.
- Flashcards.

SIXTH GRADE MATH

COURSE DESCRIPTION

Mathematics is important to everyday life and it shapes our understanding of the world around us. In the sixth grade, students should explore mathematics through a curriculum that focuses on geometry, number theory, rational numbers, measurement, fractions, decimals, percents, algebraic concepts, statistics, and probability. Students should be encouraged to solve complex and meaningful problems. Students should acquire understanding by using manipulative, working in groups, utilizing technology, and completing written and creative projects.

COURSE GOALS

- Students will review and build upon elementary math concepts.
- Students will develop the use of estimation as a mental math skill.
- Students will be introduced to integers, variables, and simple one and two step equations.
- Students will practice management of self and time to a greater degree as students mature.
- Students will be expected to actively listen and participate in class.
- Students will practice note-taking skills by keeping an active notebook.

- Students will engage in research that is useful to assigned projects in class.
- Students will determine study skills that work for them and begin to build productive study habits for acquiring mathematical concepts.
- Students will use technology to broaden their understanding of mathematical concepts. i.e. Computer web-sites and calculators.

BIBLICAL GOALS

- Understand that a student's ability to comprehend and work with numbers is a gift from God.
- Recognize that the consistency of mathematical truths demonstrate the orderliness, precision, and consistency of God.
- Understand that God designed man to be creative and that the expression of creativity often requires mathematical understanding.
- Understand that mathematics is an opportunity for a student to glorify God by giving his best.
- Understand that the systematic application of properties in mathematics can be applied to systematic study and application of Scriptural principles.
- Encourage each student to seek to know God's calling for his life.
- Reflect Christ's love toward others by showing respect, forgiveness and mercy.
- Grow in his openness and appreciation of correction and guidance.
- Practice diligence, doing his work "as for the Lord."

INSTRUCTIONAL OBJECTIVES

Number Operation and Quantitative Reasoning
Representation of Numbers (teks 2006/2007)

- Students will be able to compare and order non-negative rational numbers
- Students will be able to generate equivalent forms of rational numbers
- Students will be able to use integers to represent real-life
- Students will be able to write prime factorizations using exponents
- Students will be able to identify factors of positive integers, greatest common factors, and least common multiples
- Students will be able to model addition and subtraction involving fractions with objects pictures, words and numbers
- Students will be able to use addition and subtraction to solve using fractions with objects, pictures, words and numbers
- Students will be able to use multiplication and division of whole numbers to solve problems including equivalent ratios and rates
- Students will be able to estimate and round to approximate reasonable results and to solve problems where exact answers are not required
- Students will be able to use order of operations to simplify whole number expressions (without exponents) in problem solving situations

Patterns, relationships, and algebraic thinking

- Students will be able to use rations to describe proportional situations
- Students will be able to represent ratios and percents will concrete models, fractions and decimals
- Students will be able to use ratios to make predictions in proportional situations
- Students will be able to use tables and symbols to represent and describe proportional and other relationships such as those involving conversions, arithmetic sequences (with a constant rate of change) perimeter and area
- Students will be able to use tables of data to generate formulas representing relationship involving perimeter, area, volume of a rectangular prism, etc.
- Students will be able to formulate equations from problem situations described by linear equations

Patterns, relationships, and algebraic thinking

- Students will be able to use angle measurements to classify angles as acute, obtuse, or right
- Student will be able to identify relationships involving angles in triangles and quadrilaterals
- Student will be able to describe the relationship between radius, diameter, and circumference of a circle
- Student will be able to locate and name points on a coordinate plane using ordered pairs of non-negative rational numbers

Measurement

- Student will be able to estimate measurements (including circumference) and evaluate reasonableness of results
- Student will be able to select and use appropriate units, tools, or formulas to measure and to solve problems involving length (including perimeter) area, time, temperature, volume, and weight
- Student will be able to measure angles
- Student will be able to convert measure within the same measurement system (customary and metric) based on relationships between units

Probability and Statistics

- Student will be able to construct sample spaces using lists and tree diagrams
- Student will be able to find the probabilities of a simple event and its complement and describe the relationship between the two
- Student will be able to select and use an appropriate representation for presenting and displaying different graphical representations of the same data including line plot, line graph, bar graph, and stem and leaf plot
- Student will be able to identify mean (using concrete objects and pictorial models), median, mode, and range of a set of data
- Student will be able to sketch circle graphs to display data
- Student will be able to solve problems by collecting, organizing, displaying, and interpreting data

Underlying processes and Mathematical Tools

- Student will be able to identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics
- Student will be able to use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness
- Student will be able to select or develop an appropriate problem solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem
- Student will be able to select tools such as real objects, manipulative, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems
- Student will be able to communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models
- Student will be able to evaluate the effectiveness of different representations to communicate ideas
- Student will be able to make conjectures from patterns or sets of examples and non examples
- Student will be able to validate his/her conclusions using mathematical properties and relationships

COURSE OUTLINE

- First Nine Weeks
  - Chapter 1: Number Patterns and Algebra
  - Chapter 2: Statistics and Graphs
  - Chapter 3: Adding and Subtracting Decimals
  - Chapter 4: Multiplying and Dividing Decimals
- Second Nine Weeks
  - Chapter 5: Fractions and Decimals
  - Chapter 6: Adding and Subtracting Fractions
  - Chapter 7: Multiplying and Dividing Fractions
- Third Nine Weeks
  - Chapter 8: Algebra: Integers
  - Chapter 9: Algebra: Solving Equations
  - Chapter 10: Ratio, Proportions, and Percents
  - Chapter 11: Probability
- Fourth Nine Weeks
  - Chapter 12: Measurement
  - Chapter 13: Geometry: Angles and Polygons
  - Chapter 14: Geometry: Measuring Area and Volume

METHODOLOGY

Methods used will be an attempt to reach all learning styles within the classroom setting

- Individual problem solving with student textbooks, student journal writing, student demonstration, student projects, student drawing, student teaching, student flash cards
- Cooperative problem-solving using group projects, group experiments; group games
- Manipulative problem-solving both individually and cooperatively

EVALUATION

- Major grades will consist of projects and exams – 50%
- Minor grades will consist of journal entries, homework, student productivity and participation in the classroom – 50%

RESOURCES

- *Applications and Concepts: Course 1*, Glencoe, 2001
- *Applications and Concepts: Course 2*, Glencoe, 2001
- National Council on Teachers of Mathematics articles and website

SEVENTH GRADE MATH

HONORS PRE-ALGEBRA

COURSE DESCRIPTION

Mathematics is important to everyday life and it shapes our understanding of the world around us. In the seventh grade, students should understand algebraic principles as a tool for reasoning and problem-solving. For success in Algebra, students in Pre-Algebra should concentrate on reading and problem-solving skills, representing or picturing algebraic concepts, applying algebra to real-world situations, and increasing retention of formulas and equations. Much time should be given to a thorough understanding of problem solving and solving equations with fractions. Manipulatives, group work, technology and written projects all are useful methodologies at this level.

COURSE GOALS

- Students will review and build upon math concepts already learned.
- Students will continue to develop the use of estimation as a mental math skill.
- Students will be introduced to solving multi-step equations and inequalities.
- Students will become problem-solvers.
- Students will practice management of self and time to a greater degree as students mature.
- Students will be expected to actively listen and participate in class.
- Students will practice note-taking skills by keeping an active notebook.
- Students will engage in research that is useful to assigned projects in class.
- Students will determine study skills that work for them and begin to build productive study habits for acquiring mathematcal concepts.

- Students will use technology to broaden their understanding of mathematical concepts. i.e. Computer web-sites and calculators.

BIBLICAL GOALS

Students will learn to appreciate the complexity of God by their exploration of mathematics. Mathematics is logical and presents itself in such a pure form that it can lead to an appreciation of Creator God. When students realize the majesty of God, they can then better appreciate their role as a created person loved by this God.

INSTRUCTIONAL OBJECTIVES

Introduction

- Within a well-balanced mathematics curriculum, the primary focal points at Grade 8 are using basic principles of algebra to analyze and represent both proportional and non-proportional linear relationships and using probability to describe data and make predictions.
- Throughout mathematics in Grades 6-8, students build a foundtion of basic understandings in number, operation, and quanttative reasoning; patterns, relationships, and algebraic thinking; geometry and spatial reasoning; measurement; and probability and statistics. Students use concepts, algorithms, and properties of rational numbers to explore mathematical relationships and to describe increasingly complex situations. Students use algebraic thinking to describe how a change in one quantity in a relationship results in a change in the other; and they connect verbal, numeric, graphic, and symbolic representations of relationships. Students use geometric properties and relationships, as well as spatial reasoning, to model and analyze situations and solve problems. Students communicate information about geometric figures or situations by quantifying attributes, generalize precedures from measurement experiences, and use the procedures to solve problems. Students use appropriate statistics, representations of data, reasoning, and concepts of probability to draw conclusions, evaluate arguments, and make recommendations.
- Problem solving in meaningful contexts, language and communication, connections within and outside mathematics, and formal and informal reasoning underlie all content areas in mathematics. Throughout mathematics in Grades 6-8, students use these processes together with graphing technology and other mathematical tools such as manipulative materials to develop conceptual understanding and solve problems as they do mathematics.

Knowledge and skills

Number, operation, and quantitative reasoning. The student understands that different forms of numbers are appropriate for different situations.

- Compare and order rational numbers in various forms including integers, percents, and positive and negative fractions and decimals
- Select and use appropriate forms of rational numbers to solve real-life problems including those involving proportional relationships
- Approximate (mentally and with calculators) the value of irrational numbers as they arise from problem situations (such as π, $\sqrt{2}$)
- Express numbers in scientific notation, including negative exponents, in appropriate problem situations

Number, operation, and quantitative reasoning. The student selects and uses appropriate operations to solve problems and justify solutions.

- Select appropriate operations to solve problems involving rational numbers and justify the selections
- Use appropriate operations to solve problems involving rational numbers in problem situations
- Evaluate a solution for reasonableness
- Use multiplication by a constant factor (unit rate) to represent proportional relationships

Patterns, relationships, and algebraic thinking. The student identifies proportional or non-proportional linear relationships in problem situations and solves problems.

- The student is expected to generate a different representation of data given another representation of data (such as a table, graph, equation, or verbal description)

Patterns, relationships, and algebraic thinking. The student uses graphs, tables, and algebraic representations to make predictions and solve problems.

- Predict, find, and justify solutions to application problems using appropriate tables, graphs, and algebraic equations
- Find and evaluate an algebraic expression to determine any term in an arithmetic sequence (with a constant rate of change)

Geometry and spatial reasoning. The student uses transformational geometry to develop spatial sense.

- Generate similar figures using dilations including enlargements and reductions
- Graph dilations, reflections, and translations on a coordinate plane

Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.

- Draw three-dimensional figures from different perspectives
- Use geometric concepts and properties to solve problems in fields such as art and architecture
- Use pictures or models to demonstrate the Pythagorean Theorem
- Locate and name points on a coordinate plane using ordered pairs of rational numbers

Measurement. The student uses procedures to determine measures of three-dimensional figures.

- Find lateral and total surface area of prisms, pyramids, and cylinders using concrete models and nets (two-dimensional models)
- Connect models of prisms, cylinders, pyramids, spheres, and cones to formulas for volume of these objects

- Estimate measurements and use formulas to solve application problems involving lateral and total surface area and volume

Measurement. The student uses indirect measurement to solve problems.

- Use the Pythagorean Theorem to solve real-life problems
- Use proportional relationships in similar two-dimensional figures or similar three-dimensional figures to find missing measurements

Measurement. The student describes how changes in dimensions affect linear, area, and volume measures.

- Describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionally
- Describe the resulting effect on volume when dimensions of a solid are changed proportionally

Probability and statistics. The student applies concepts of theoretical and experimental probability to make predictions.

- Find the probabilities of dependent and independent events
- Use theoretical probabilities and experimental results to make predictions and decisions
- Select and use different models to simulate an event

Probability and statistics. The student uses statistical procedures to describe data.

- Select the appropriate measure of central tendency or range to describe a set of data and justify the choice for a particular situation
- Draw conclusions and make predictions by analyzing trends in scatter plots
- Select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, stem and leaf plots, circle graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams, with and without the use of technology

Probability and statistics. The student evaluates predictions and conclusions based on statistical data.

- Evaluate methods of sampling to determine validity of an inference made from a set of data
- Recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis

Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.

- Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics
- Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness
- Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem
- Select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems

Underlying processes and mathematical tools. The student communicates about Grade 8 mathematics through informal and mathematical language, representations, and models.

- Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models
- Evaluate the effectiveness of different representations to communicate ideas

Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions.

- Make conjectures from patterns or sets of examples and non examples
- Validate his/her conclusions using mathematical properties and relationships

COURSE OUTLINE

- First Nine Weeks
  - Chapter 1: The Tools of Algebra
  - Chapter 2: Integers
  - Chapter 3: Equations
  - Chapter 4: Factors and Fractions
- Second Nine Weeks
  - Chapter 5: Rational Numbers
  - Chapter 6: Ratios, Proportion, Percent
  - Chapter 7: Linear Equations, Inequalities, Functions
- Third Nine Weeks
  - Chapter 8: Functions and Graphing
  - Chapter 9: Applying Algebra to Geometry
  - Chapter 10: Two-Dimensional Figures
- Fourth Nine Weeks
  - Chapter 11: Three-Dimensional Figures
  - Chapter 12: Statistics and Probability
  - Chapter 13: Polynomials and Nonlinear Functions

METHODOLOGY

Methods used will be an attempt to reach all learning styles within the classroom setting

- Individual problem solving with student textbooks, student journal writing, student demonstration, student projects, student drawing, student teaching, student flash cards

- Cooperative problem-solving using group projects, group experiments; group games
- Manipulative problem-solving both individually and cooperatively

EVALUATION

- Major grades will consist of projects and exams – 50%
- Minor grades will consist of journal entries, homework, student productivity and participation in the classroom – 50%

RESOURCES

- *Pre-Algebra* Glencoe, 2001
- *Applications and Concepts: Course 2*, Glencoe, 2001
- National Council on Teachers of Mathematics articles and website

EIGHTH GRADE MATH

ALGEBRA I

(One Upper School Credit)

COURSE DESCRIPTION

Algebra I should reinforce an understanding of the reasons for learning algebra and thus should consist of applying and connecting algebraic principles to other areas of mathematics, other disciplines, and real-life applications. The course should engage all learning styles by using manipulatives as well as traditional teaching methods.

This course is designed to introduce in-depth algebraic concepts while giving students time to master solving algebraic expressions and equations and other geometric concepts in preparation for continued study of Algebra I in 9th grade. Students in this course will have the opportunity to take Geometry during the summer following their 9th grade year and then transition to the advanced math track, culminating in AP Calculus during the senior year. If students elect to stay on the level track, they will have a solid algebraic foundation sufficient to continue the study of mathematics through Pre Calculus.

COURSE GOALS

- Students will review and build upon math concepts already learned
- Students will solve multi-step equations and inequalities
- Students will become algebraic problem-solvers
- Students will practice management of self and time to a greater degree as students mature
- Students will be expected to actively listen and participate in class
- Students will practice note-taking skills by keeping an active notebook
- Students will engage in research that is useful to assigned projects in class
- Students will determine study skills that work for them and begin to build productive study habits for acquiring mathematical concepts
- Students will use technology to broaden their understanding of mathematical concepts. i.e. Computer web-sites and calculators

BIBLICAL GOALS

- Students will learn to appreciate the complexity of God by their exploration of mathematics.
- Students will recognize that the intricacy of creation, the precision required for good design, whether it be God's or man's, and the ability to predict much of what occurs all are truth that may be unlocked through Algebra.
- Students will discover that the algebraic principals are ar result of God's creation and a reflection of His nature and that they may be used to glorify God.
- Students will understand that a student's ability to comprehend and work with numbers is a gift from God.
- Students will understand that the systematic application of properties in mathematics can be applied to systematic study and application of Scriptural principles.
- Students will reflect Christ's love toward others by showing respect, forgiveness and mercy.
- Students will practice diligence, doing his work "as for the Lord."

INSTRUCTIONAL OBJECTIVES

Basic Understandings

- Foundation concepts for upper school mathematics. As presented in Grades K- 8, the basic understandings of number, operation, and quantitative reasoning; patterns, relationships, and algebraic thinking; geometry; measurement; and probability and statistics are essential foundations for all work in upper school mathematics. Students will continue to build on this foundation as they expand their understanding through other mathematical experiences.
- Algebraic thinking and symbolic reasoning. Symbolic reasoning plays a critical role in algebra; symbols provide powerful ways to represent mathematical situations and to express generaliztions. Students use symbols in a variety of ways to study relationships among quantities.
- Function concepts. A function is a fundamental mathematical concept; it expresses a special kind of relationship between two quantities. Students use functions to determine one quantity from another, to represent and model problem situations, and to analyze and interpret relationships.
- Relationship between equations and functions. Equations and inequalities arise as a way of asking and answering questions involving functional relationships. Students work in many situations to set up equations and inequalities and use a variety of methods to solve them.
- Tools for algebraic thinking. Techniques for working with functions and equations are essential in understanding underlying relationships. Students use a variety of representations (concrete, pictorial, numerical, symbolic, graphical, and verbal), tools, and technology (including, but not limited to, calculators with graping capabilities, data collection devices, and computers) to model mathematical situations to solve meaningful problems.

- Underlying mathematical processes. Many processes underlie all content areas in mathematics. As they do mathematics, students continually use problem- solving, language and communication, and reasoning (justification and proof) to make connections within and outside mathematics. Students also use multiple representations, technology, applications and modeling, and numerical flency in problem-solving contexts.

Knowledge and Skills

Foundations for functions. The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways.

- Describe independent and dependent quantities in functional relationships
- Gather and record data and use data sets to determine functional relationships between quantities
- Describe functional relationships for given problem situations and write equations or inequalities to answer questions arising from the situations
- Represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities
- Interpret and make decisions, predictions, and critical judgments from functional relationships

Foundations for functions. The student uses the properties and attributes of functions.

- Identify and sketch the general forms of linear (y = x) and quadratic (y = x2) parent functions
- Identify mathematical domains and ranges and determine reasonable domain and range values for given situations, both continuous and discrete
- Interpret situations in terms of given graphs or creates situations that fit given graphs
- Collect and organize data, make and interpret scatter plots (including recognizing positive, negative, or no correlation for data approximating linear situations), and model, predict, and make decisions and critical judgments in problem situations

Foundations for functions. The student understands how algebra can be used to express generalizations and recognizes and uses the power of symbols to represent situations.

- Use symbols to represent unknowns and variables
- Look for patterns and represent generalizations algebraically

Foundations for functions. The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations.

- Find specific function values, simplify polynomial expressions, transform and solve equations, and factor as necessary in problem situations
- Use the commutative, associative, and distributive properties to simplify algebraic expressions
- Connect equation notation with function notation, such as y = x + 1 and f(x) = x + 1

Linear functions. The student understands that linear functions can be represented in different ways and translates among their various representations.

- Determine whether or not given situations can be represented by linear functions
- Determine the domain and range for linear functions in given situations
- Use, translate, and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions

Linear functions. The student understands the meaning of the slope and intercepts of the graphs of linear functions and zeros of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.

- Develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations
- Interpret the meaning of slope and intercepts in situations using data, symbolic representations, or graphs
- Investigate, describe, and predict the effects of changes in m and b on the graph of y = mx + b
- Graph and write equations of lines given characteristics such as two points, a point and a slope, or a slope and y-intercept
- Determine the intercepts of the graphs of linear functions and zeros of linear functions from graphs, tables, and algebraic representations
- Interpret and predict the effects of changing slope and y-intercept in applied situations
- Relate direct variation to linear functions and solve problems involving proportional change

Linear functions. The student formulates equations and inequalities based on linear functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation.

- Analyze situations involving linear functions and formulate linear equations or inequalities to solve problems
- Investigate methods for solving linear equations and inequalities using concrete models, graphs, and the properties of equality, select a method, and solve the equations and inequalities
- Interpret and determine the reasonableness of solutions to linear equations and inequalities

Linear functions. The student formulates systems of linear equations from problem situations, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation.

- Analyze situations and formulate systems of linear equations in two unknowns to solve problems

- Solve systems of linear equations using concrete models, graphs, tables, and algebraic methods
- Interpret and determine the reasonableness of solutions to systems of linear equations

Quadratic and other nonlinear functions. The student understands that the graphs of quadratic functions are affected by the parameters of the function and can interpret and describe the effects of changes in the parameters of quadratic functions.

- Determine the domain and range for quadratic functions in given situations
- Investigate, describe, and predict the effects of changes in a on the graph of y = ax2 + c
- Investigate, describe, and predict the effects of changes in c on the graph of y = ax2 + c
- Analyze graphs of quadratic functions and draw conclusions

Quadratic and other nonlinear functions. The student understands there is more than one way to solve a quadratic equation and solves them using appropriate methods.

- Solve quadratic equations using concrete models, tables, graphs, and algebraic methods
- Make connections among the solutions (roots) of quadratic equations, the zeros of their related functions, and the horizontal intercepts (x- intercepts) of the graph of the function

Quadratic and other nonlinear functions. The student understands there are situations modeled by functions that are neither linear nor quadratic and models the situations.

- Use patterns to generate the laws of exponents and apply them in problem-solving situations
- Analyze data and represent situations involving inverse variation using concrete models, tables, graphs, or algebraic methods
- Analyze data and represent situations involving exponential growth and decay using concrete models, tables, graphs, or algebraic methods

COURSE OUTLINE

- First Nine Weeks
  - Chapter 1: The language of Algebra
  - Chapter 2: Real Numbers
- Second Nine Weeks
  - Chapter 3: Solving Linear Equations
  - Chapter 4: Graphing Relations and Functions
  - Chapter 5: Analyzing Linear Equations
- Third Nine Weeks
  - Chapter 6: Solving Linear Inequalities
  - Chapter 7: Solving Systems of Linear Equations and Inequalities
- Fourth Nine Weeks
  - Chapter 8: Polynomials
  - Chapter 9: Factoring
  - Chapter 10: Quadratic Equations *(If time permits)*

BIBLICAL GOALS

Students will learn to appreciate the complexity of God by their exploration of mathematics. Mathematics is logical and presents itself in such a pure form that it can lead to an appreciation of Creator God. When students realize the majesty of God, they can then better appreciate their role as a created person loved by this God.

METHODOLOGY

Methods used will be an attempt to reach all learning styles within the classroom setting

- Individual problem solving with student textbooks, student journal writing, student demonstration, student projects, student drawing, student teaching, student flash cards
- Cooperative problem-solving using group projects, group experiments; group games
- Manipulative problem-solving both individually and cooperatively

EVALUATION

- Major grades will consist of projects and exams – 60%
- Minor grades will consist of journal entries, homework, student productivity and participation in the classroom – 40%

RESOURCES

- *Algebra 1,* Glencoe, 2001
- National Council on Teachers of Mathematics articles and website

EIGHTH GRADE MATH

HONORS ALGEBRA I

(One Upper School Credit.)

COURSE DESCRIPTION

Mathematics is important to everyday life and it shapes our understanding of the world around us. In the seventh grade, students should understand algebraic principles as a tool for reasoning and problem-solving. For success in Algebra, students in Pre Algebra should concentrate on reading and problem-solving skills, representing or picturing algebraic concepts, applying algebra to real-world situations, and increasing retention of formulas and equations. Much time should be given to a thorough understanding of problem solving and solving equations with fractions. Manipulatives, group work, technology and written projects all are useful methodologies at this level.

COURSE OUTLINE

- First Nine Weeks
  - Chapter 1: The language of Algebra
  - Chapter 2: Real Numbers

Chapter 3: Solving Linear Equations

Chapter 4: Graphing Relations and Functions

- Second Nine Weeks

  Chapter 5: Analyzing Linear Equations

- Third Nine Weeks

  Chapter 6: Solving Linear Inequalities

  Chapter 7: Solving Systems of Linear Equations and Inequalities

- Third Nine Weeks

  Chapter 8: Polynomials

  Chapter 9: Factoring

- Fourth Nine Weeks

  Chapter 10: Quadratic Equations

  Chapter 11: Radical Expressions and Triangles

  Chapter 12: Rational Expressions and Equations

  Chapter 13: Statistics *(If time permits)*

  Chapter 14: Probability *(If time permits)*

SCIENCE

FIFTH GRADE

COURSE DESCRIPTION

The philosophy of the science teachers of Northeast Christian Academy is that all aspects of the universe were created by God; that He created man specially and individually; that He sustains His creation by His power; and that He has commanded man to have dominion over this creation. To obey this divine command, man must seek to understand God's creation. As Copernicus said, Christians seek "to think God's thoughts after Him." NCA considers the study of science as an act of obedience to God, a sacred trust.

COURSE GOALS

- Understand basic grade-level scientific principles and concepts.
- Develops elf-confidence in the study of science.
- Record and make notes related to data and findings in order to describe conclusions about and reactions to science and its processes both orally and in writing.
- Appreciate God's creation and understand his responsibility as its caretaker.

BIBLICAL GOALS

- Understand that secular culture tends to perceive only the human realm and thus considers scientific inquiry or human reason as the path to all knowledge, but that Christians recognize God as the Creator and Sustainer of all creation and source of ultimate truth.
- Gain an appreciation for and an understanding of God's creation with its complexity and orderliness.
- Understand that God designed a perfect harmony of relationships among humans, animals, plants, and non-living things, but that sin disrupted this unity and balance.
- Realize that science is an important tool in learning about the natural laws of God.
- Realize that people have the responsibility to be good stewards of God's creation.
- Recognize that science can explain how events occur in the material world but not why and how the Bible sets the correct context for ultimate causes and infinite relations.

OBJECTIVES WITH SCOPE AND SEQUENCE

Unit D, F: Matter and Light

- Define matter
- Explain mass and volume.
- Explain that different types of matter have different properties.
- Explain that all matter is composed of atoms.
- Describe the structure of an atom.
- Explain how atoms differ from one another.
- Explain what information can be learned from the periodic table.
- Name common elements and their uses.
- Explain that atoms join to form molecules.
- Use chemical formulas to find out what atoms are in molecules.
- State that not all matter is made of molecules.
- Compare the properties of acids and bases.
- Test common liquids to determine whether they are acids or bases.
- Explain that acids and bases react to produce salt and water.
- Review the states of matter.
- Explain the structure of the particles in each state.
- Explain that a physical change is a change in the state, size, or shape of matter.
- Name physical changes.
- Make and separate a mixture.
- Explain that a chemical change creates a new substance.
- Name chemical changes.

Unit D, F: Matter and Light

- Review sources of light.
- State that light is a form of radiant energy.
- Explain that light travels in waves.
- Review that light travels in all directions in a straight line from the source.
- Explain what happens when light waves hit an object.
- Explain regular and irregular reflection
- Explain refraction.
- Explain how concave and convex lenses transmit light.
- List uses of concave and convex lenses.

- Explain how concave, convex and plane mirrors.
- List uses of concave, convex and plane mirrors.
- Describe how white light can be broken into colored light.
- Explain how we see color.
- Identify the seven colors of the visible spectrum.
- Name some other electromagnetic waves.
- Explain how by products of chemical changes can be harmful.
- Describe how light is presented in the Creation account.

Unit E: Geology

- Describe four characteristics of minerals.
- Name similarities and differences among minerals.
- Explain how a rock is different from a mineral.
- List some properties of rocks.
- Classify rocks according to their properties.
- Explain how igneous rocks are formed.
- Name some igneous rocks.
- Explain how sedimentary rocks form.
- Name some sedimentary rocks.
- Explain how metamorphic rocks form.
- Name some metamorphic rocks.
- Explain the rock cycle.
- Explain some uses of rocks and minerals.
- State that the earth is made of rock.
- Describe the layers of the earth.
- Explain that the earth's crust is made up of plates.
- Explain how these plates move.
- Explain what causes volcanoes.
- Describe how earthquakes are measured.
- Explain what causes volcanoes.
- Name and describe different kinds of volcanoes.
- Explain parts of the water cycle.
- Describe how water shapes the land.
- Describe how geology fits with Day 2 and 3 of the Creation account

Unit A: Plants (living cells)

- Explain how microscopes can help us study God's world.
- Demonstrate competence with a microscope.
- State that a cell is the basic unit of life.
- Describe the structure of an animal cell.
- Describe the structure of a plant cell.
- Explain how plant cells are different from animal cells.
- Explain that mitosis produces offspring that are identical to the parent cell.
- Explain how cells reproduce by mitosis.
- Explain that mitosis produces offspring that are not identical to either of parent cells.
- Explain how cells reproduce by meiosis.
- Explain that chromosomes are made of DNA.
- Identify genes as the parts of a chromosome that carry traits.
- Explain how plants produce food.
- Explain how photosynthesis is important in creation.
- Explain a typical seed plant life cycle.
- Identify plants as monocots or dicots.
- Describe the structure of a flower.
- Explain some ways that seeds travel.
- Describe how seeds are designed for their method of travel.
- Explain how water and food moves through plants.
- Explain how plants grow.
- Explain how plants reproduce without seeds in nature.
- Explain how people can help plants reproduce without seeds.
- Explain the different life cycles of plants.
- Identify plants as annuals, biennials or perennials.

Unit B: The Solar System and Beyond

- Identify Constellations.
- Identify key stars.
- Describe star movement.
- Explain origins of the constellations.
- Differentiate Planets.
- Describe telescope types.
- Classify solar system non-planetary objects.
- Compare planetary distances.
- Explain theories of solar sytem formation.
- Measure planet sizes.
- Name inner planets.
- Name outer planets.
- Compare and Contrast composition of inner planets.
- Compare and Contrast composition of outer planets.
- Compare star color.
- Explain how stars differ from one another.
- Describe a photometer.
- Explain a nebula.
- Describe the life cycle of a star.
- Classify galaxies.
- Compare the Milky Way and other galaxies.
- Explain free fall.
- Explain requirements for surviving in space.
- Describe the Bible's view of Extraterrestrials.

Unit D: Populations and Ecosystems

- Describe environmental factors.
- State how people can be environmental factors.
- Describe non-living factors that affect organisms.
- Define and describe microclimate.
- Describe living factors that affect organisms.
- Design an organism to fit specific factors.
- Describe cultural factors that affect organisms.
- Name ways that people can help the environment.
- Describe some causes of air pollution.
- Explain how air pollution affects plants and animals.
- Explain how people can reduce air pollution.
- Describe some causes of land pollution.
- Explain how land pollution affects plants and animals.
- Explain how people can reduce land pollution.
- Describe some causes of water pollution.
- Explain how water pollution affects plants and animals.
- Explain how people can reduce water pollution.
- Explain what makes animals different from other animals.
- Name the external parts of an insect.
- Explain how animals are classified.
- Classify animals.
- Name the body systems of various animals.
- Explain how these body systems function.
- Explain why animals need protection.
- Describe how animals are designed to stay safe.
- Explain incomplete metamorphosis.
- Explain complete metamorphosis.
- Name animals that go through complete and incomplete metamorphosis.
- Name animals that are helpful and harmful to people, plants and animals.
- Explain how animals are important in creation.

Unit C: Energy, Work, and Machines

- Define structure.
- List considerations for building and judging structures.
- Identify three types of strength.
- Explain when each type of strength would be important.
- Explain that structures can be made stronger by changing their shape.
- Compare the relative strengths of various shapes.
- Explain the origin of the arch.
- Describe how arches support weight.
- Explain how arches are used in structures.
- Describe four kinds of bridges.
- Explain considerations involved in building each type of bridge.
- Explain the structure and functions of towers.
- Build a tower.
- Explain roller coaster energy
- Compare friction and work
- Explain simple machines
- Demonstrate the use of pulleys and levers
- Describe a wheel and axle
- Explain Compound Machines

METHODOLOGY

- Demonstration
- Discussion
- Experiments
- Hands on activities
- Project and library reports
- Hand outs
- Field trips
- Videos
- Blackline Masters

EVALUATION

- Tests and quizzes
- Class participation
- Class discussion
- Completion of projects and assignments
- Blackline Masters

RESOURCES

- *Science*, Discovery Works Concordia Edition, Concordia Publishing House, St. Louis, MO 1999
- Experiment and projects up plies
- School and classroom libraries
- Videos
- United Streaming

SIXTH GRADE SCIENCE

COURSE DESCRIPTION

The philosophy of the science department of Northeast Christian Academy is that all aspects of the universe, including all forms of life, were created by God; that He created man specially and individually; that He sustains His creation by His power; and that He has commanded man to have dominion over this creation. To obey this divine command, man must seek to understand God's creation. As Copernicus said, we seek "to think God's thoughts after Him."

We consider the study of science as an act of obedience to God, a sacred trust.

COURSE GOALS

- To help the student determine his value system and understand how a Christian approaches the study of science.
- To clarify the different philosophies regarding the origin of the universe.
- To develop in the student a love and appreciation of God's creativity and provision as seen in the living organisms within the world.
- To help the student understand his role in this world.
- To introduce to the student the key elements necessary for him to continue with further studies of the sciences and the accompanying special studies.
- To help the student understand and use the scientific method.
- To help the student utilize the tools of science.
- To help the student understand the processes that shape and affect the earth, the solar system, and the universe.

BIBLICAL GOALS

- Understand that God is the Creator of all things.
- Exhibit the Christ-like character trait of faith and the application of that faith.
- Appreciate that God is a God of order and that His creation follows certain laws, some of which are known and some of which are yet to be discovered.
- Recognize that we have a mandate from God to rule and subdue His creation. (Genesis 1:17)
- Demonstrate that the Bible and science are not in conflict.
- Love all truth as God's truth.
- Demonstrate good stewardship of the gifts God has given mental, spiritual, and material.
- Respect and properly use creation.

INSTRUCTIONAL OBJECTIVES

- Follow the scientific method involving experimentation, observation, research, and various other activities.
- Identify God's hand in creation.
- Describe man's role asap art of creation.
- Take notes from a lecture and document all necessary investigative aspects in pursuance of a specific activity.

Understand Light and Energy

- Review sources of light
- State that light is a form of radiant energy
- Explain that light travels in waves and particles
- Review that light travels in all directions in a straight line from the source
- Explain what happens when light waves hit an object
- Explain reflection
- Explain refraction
- Explain concave, convex, and plane mirrors
- List uses of concave, plane and convex mirrors
- Describe how white light can be broken into colored light
- Explain how we see color
- Identify the seven colors of the visible spectrum
- Name some other electromagnetic waves
- Explain the Bible's description of light in the creation account
- Define Matter, Mass and Volume
- Explain Matter, Mass and Volume
- Explain properties of matter
- Describe the structure of an atom
- Explain that atoms form molecules and compounds
- Describe how to use the periodic table
- Compare acids and bases
- Test liquids to determine alkalinity or acidity
- Review states of matter
- Name physical and chemical changes
- Make and separate a mixture

The Hydrosphere

- Explain how the hydrosphere began in the days of creation
- Explain the hydrologic cycle
- List the parts of the hydrologic cycle
- Describe the causes of water pollution
- Describe the physical characteristics of oceans
- Explain how the ocean affects undersea topography
- Determine how the ocean affects the hydrosphere
- Describe the fresh water aspects of the hydrologic cycle
- Determine fresh water's part in the hydrologic cycle
- Describe weather patterns
- List kinds of clouds
- Determine characteristics of clouds
- Differentiate extreme weather including: tornadoes, hurricanes, and thunderstorms
- List forms of precipitation
- Determine extreme weather's impact on the gulf coast

The Solid Earth/Plants

- Recall the creation story
- Differentiate igneous, metamorphic and sedimentary rocks
- Explain the rock cycle
- List properties of rocks
- Classify rocks according to properties

- Explain how a rock is different from a mineral
- Name similarities and differences among minerals
- Describe the layers of the earth
- Explain that the earth is made of plates
- Describe how the plates move
- Explain what causes earthquakes
- Explain what causes volcanoes
- Differentiate types of volcanoes
- Identify main characteristics of a plant
- Explain how plants produce food
- Explain how photosynthesis is important in creation
- Determine two main types of seed plants
- Explain typical seed plant life cycle
- Differentiate monocots and dicots
- Describe the structure of a flower
- Explain pollination
- Explain seed travel
- Explain how seed plants grow
- Describe how seed design fits method of travel
- Explain how food and water move through the plant
- Explain how plants grow
- Explain how plants reproduce w/o seeds in nature
- Explain the life cycles in plants
- Identify plants as annuals, biennials or perennials

Populations and Ecosystems

- Describe environmental factors
- State how people can be environmental factors
- Describe non-living factors that affect organisms
- Define and describe microclimate
- Describe living factors that affect organisms
- Design an organism to fit specific factors
- Describe cultural factors that affect organisms
- Name ways that people can help the environment
- Describe some causes of air pollution
- Explain how air pollution affects plants and animals
- Explain how people can reduce air pollution
- Describe some causes of land pollution
- Explain how land pollution affects plants and animals
- Explain how people can reduce land pollution
- Describe some causes of water pollution
- Explain how water pollution affects plants and animals
- Explain how people can reduce water pollution
- Explain what makes animals different from other animals.
- Name the external parts of an insect.
- Explain how animals are classified.
- Classify animals.
- Name the body systems of various animals.
- Explain how these body systems function.
- Explain why animals need protection.
- Describe how animals are designed to stay safe.
- Explain incomplete metamorphosis.
- Explain complete metamorphosis.
- Name animals that go through complete and incomplete metamorphosis.
- Name animals that are helpful and harmful to people, plants and animals.
- Explain how animals are important in creation.

Work and Machines

- Define structure
- Define work
- Define machine
- Calculate the amount of work done by a machine
- List types of simple machines
- Determine how each machine increases output effort
- Define power
- Calculate the amount of power is used in various machines

METHODOLOGY

Presentation of Material

- Class lecture - students add lecture notes to notes taken over assigned textbook reading
- Daily reading assignments
- Laboratory and investigation exercises
- Discussions solicited by teacher regarding material in review

Special Projects

- Audio Visuals and guest speakers will be used to enrich presentation of materials
- Field trips to planetariums, museums, zoos, industrial plants, research institutes, etc.
- Science Fair Projects including back-drop and research paper demonstrating all steps us scientific method
- Construction of a ‘to scale’ solar system to be completed by each student
- Construction of a ‘geologic notebook’ containing all geological areas covered in class and visuals collected by student
- A collection of newspaper articles relating to earth science phenomenon, a noted scientist report, weather report phenoenon, or other pertinent copy relating to earth science

EVALUATION

- Tests
- Quizzes
- Class participation/class discussion
- Laboratory procedures/activities
- Projects, reports (including Science Fair)

RESOURCES

- *Science*, Discovery Works Concordia Edition (6th Grade), Concordia Publishing House, St. Louis, MO 1999
- Experiment and project supplies
- School and classroom libraries
- Videos
- United Streaming

SEVENTH GRADE SCIENCE

COURSE DESCRIPTION

The philosophy of the science department of Northeast Christian Academy is that all aspects of the universe, including all forms of life, were created by God; that He created man specially and individually; that He sustains His creation by His power; and that He has commanded man to have dominion over this creation. To obey this divine command, man must seek to understand God's creation. As Copernicus said, we seek "to think God's thoughts after Him." We consider the study of science as an act of obedience to God, a sacred trust.

COURSE GOALS

- To help the student determine his value system and understand how a Christian approaches the study of science.
- To clarify the different philosophies regarding the origin of the universe.
- To develop in the student a love and appreciation of God's creativity and provision as seen in the living organisms within the world.
- To help the student understand his role in this world.
- To introduce to the student the key elements necessary for him to continue with further studies of the sciences and the accompanying special studies.
- To help the student understand and use the scientific method.
- To help the student utilize the tools of science.
- To help the student understand the processes that shape and affect the earth, the solar system, and the universe.

BIBLICAL GOALS

- Understand that God is the Creator of all things.
- Exhibit the Christ-like character trait of faith and the application of that faith.
- Appreciate that God is a God of order and that His creation follows certain laws, some of which are known and some of which are yet to be discovered.
- Recognize that we have a mandate from God to rule and subdue His creation. (Genesis 1:17)
- Demonstrate that the Bible and science are not in conflict.
- Love all truth as God's truth.
- Demonstrate good stewardship of the gifts God has given-mental, spiritual, and material.
- Respect and properly use creation.

INSTRUCTIONAL OBJECTIVES

- Follow the scientific method involving experimentation, observation, research, and various other activities.
- Identify God's hand in creation.
- Describe man's role as a part of creation.
- Take notes from a lecture and document all necessary investigative aspects in pursuance of a specific activity.

OBJECTIVES WITH SCOPE AND SEQUENCE

Unit 1: Light and Energy

- Understand the biblically derived framework of science, faith, and reason as it pertains to man and his study of the earth.
- Explain the place of light and energy in the sequence of creation
- Review sources of light
- State that light is a form of radiant energy
- Explain that light travels in waves and particles
- Review that light travels in all directions in a straight line from the source
- Explain what happens when light waves hit an object
- Explain reflection
- Explain refraction
- Explain concave, convex, and plane mirrors
- List uses of concave, plane and convex mirrors
- Describe how white light can be broken into colored light
- Explain how we see color
- Identify the seven colors of the visible spectrum
- Name some other electromagnetic waves
- Explain the Bible's description of light in the creation account
- Define Matter, Mass and Volume
- Explain Matter, Mass and Volume
- Explain properties of matter
- Describe the structure of an atom
- Explain that atoms form molecules and compounds
- Describe how to use the periodic table
- Compare acids and bases
- Test liquids to determine alkalinity or acidity

- Review states of matter
- Name physical and chemical changes
- Make and separate a mixture

Unit 2: Hydrology and Meteorology

Goals

- Understand the topography of the sea floor, the composition of sea water and the motion of the ocean water.
- Understand the existence of glaciers, how they move and their effect on the surrounding environment.
- Understand the great resource man has called 'water' and how that 'water' is contained in underground reservoirs and the results of its great dissolving power.

Objectives

- List the components of sea water.
- Describe tides and waves and what causes them as well as the effects of seashore erosion.
- Name and locate the various global sea currents.
- Label a diagram of the sea floor.
- Describe the various types of glaciers, how they are formed, how they move, and the results of glacial erosion.
- Explain how the Ice Age is consistent with the Biblical record
- Explain what the water table is and why it is important.
- List, describe, and tell how the various cave structures are formed.

Unit 3: Geology and Botany

Goals

- Understand the biblically derived framework of science, faith, and reason as it pertains to man and his study of the earth.
- Understand the earth's design, structure, and history.
- Understand the components of minerals and the identification of the minerals in nature.
- Understand the difference between sedimentary, igneous, metamorphic rocks and fossils.
- Understand the origin, characteristics, types, names, and forecasting of earthquakes and volcanoes.
- Understand the earth's changes as brought about by weathering, mass wasting and stream erosion.

Objectives

- State the first and second laws of thermodynamics.
- Explain the Fall of Man, the Flood, and various other catastrophes and the effect it had on the earth and man.
- Distinguish between fallacies and false arguments as pertaining to the earth and its origin.
- Discuss the major tenets of creationism, evolutionism, catastrophism, and uniformitarianism.
- Discuss the dating methods and the problems inherent w/each one.
- Perform the necessary experiments to determine the identity of a mineral.
- Distinguish between various types of minerals, rocks, and fossils.
- Distinguish between mountains and hills and the development of each.
- Explain what an earthquake is, how it can be measured, and how instrumentation permits man to forecast the occurrence of an earthquake.
- Compare and contrast the areas on the earth where earthquakes are more likely occur and the plate tectonics theory that is connected with earthquake occurrence.
- Describe the types of volcanoes and the development of each type.
- Compare and contrast mass wasting and erosion.

Unit 4: Astronomy

Goals

- Understand the relationship that the Earth's movement has with the sun and the other celestial bodies.
- Understand the Moon's motion and origin and man's pursuit to gain access to it.
- Understand the characteristics, classification, and origin of the planets, minor planets, comets, and meteors.
- Understanding the stars and the tools with which scientists through the ages have used to map and describe them.

Objectives

- Explain the geocentric and heliocentric theories.
- List the major discoveries in the history of astronomy.
- Tell how calendars were developed.
- List and tell the major discoveries of several scientists
- Explain how we know that the earth moves and distinguish between the rotation and the revolution of the earth.
- Identify the phases of the moon and the various types of telescopes.
- Identify several constellations, galaxies, and individual stars on a star map and know how to read a star map.
- Describe the characteristics of different stars.
- Explain the sun's size, energy generation capacity, components, layers, and effects earth and its energy resources.
- Explain the various characteristics, components, discoveries, movements, patterns of revolution and rotation, of the major planets.
- Contrast and compare the minor celestial bodies and their effects on the earth.
- Discuss the beginnings, tragedies, conquests, discoveries of space exploration as it has evolved into the space program that exists today, as well as the scientists involved in that pursuit.

Unit 5: Living Organisms

Goals

- Understand the various types of reproductive methods of organisms and the basic similarities involved in simple cell division.
- Understand the synthesis of proteins, and the basic structure of the DNA molecule as it contains the basic elements for the continuation of the inherited traits of an organism.
- Understand the varying mutations representative in nature and the process by which the mutations occur.
- Understand the terms evolution and natural selection and how the theory involving the terms came to be along with the ramifications of the theory itself.

Objectives

- Discuss the complete process involved in mitotic cell division and animals that display, order to reproduce themselves.
- Identify the structures and functions of the flower and through these how pollination and fertilization occur.
- Discuss external and internal fertilization and the various organisms representative of each.
- Discuss the process by which chromosomes go through the reproductive process to become the offspring organism.
- Discuss Mendel's work with genetics and the progress that has been made since his first investigatory observations.
- Explain how proteins are synthesized and what structures are involved.
- Demonstrate the use of the Punnett square and how it can be used to determine various inherited traits.
- Describe how sex-linked traits are inherited.
- Discuss the various mutations and the resulting characteristics of the organism displaying those inherited traits.
- Discuss the conception of the theory of evolution and all arguments for and opposing its view.

Unit 5: Health

Goals

- Understand the structure of the human body including the individual systems, their functions and the delicacy of the body as it undergoes the stresses upon it.
- Understand the cellular, systematic balance of the humanoid circulatory system and the organs and processes involved in its success.
- Understand the body's ability to make energy from the food items taken into it and the cellular processes involved in this activity.
- Understand how the human body maintains control of its functions and sustains itself with its environment.

Objectives

- Discuss the functions, structures, and processes involved in the voluntary and involuntary systems of the human body's support and movement.
- Describe how the body repairs itself from burns, broken bones and cuts.
- Describe the effects of different types of drugs on the human body.
- Discuss the homeostasis of the human body.
- Describe the function of erythrocytes, leukocytes, platelets, blood plasma within the circulatory system of the human body.
- Describe a blood transfusion.
- Discuss the physical cause of Christ's death on the cross and the spiritual significance of Christ's death on the cross.
- List several organs that can be transplanted and why sometimes there is a rejection.
- Describe the process by which metabolism takes place.
- List and describe the structures of the digestive system.
- Describe chemical digestion of carbohydrates, proteins, and lipids.
- Discuss the related problems when one smokes, has an ulcer, or a virus attacks their system.
- Name and describe the function and structures of the two systems that control and coordinate the body's activities.
- Describe the endocrine system and the function it plays in the balance of the human body.
- Discuss the process that the body goes through as it matures physically.

METHODOLOGY

Presentation of Material

- Class lecture: students add lecture notes to notes taken over assigned textbook reading and outlining
- Daily reading assignments
- Laboratory and investigative exercises
- Class discussions/demonstrations led by students/teacher regarding material in review

Special Projects *(Optional)*

- Videos and guest speakers
- Field trips
- Science Fair projects including display and research paper demonstrating all steps of the scientific method
- Collection of current newspaper/magazine articles relating to technological advances in the areas of the physical sciences

EVALUATION

- Tests / Quizzes
- Class participation/class discussion
- Laboratory procedures/activities
- Projects, reports (including Science Fair)

RESOURCES

- *Earth Science,* Holt Science and Technology, Holt, Rinehart and Winston, 2004
- *Life Science*, Holt Science and Technology, Holt, Rinehart and Winston, 2004
- *Association of Christian Schools International Science Fair Coordinator's Handbook, ACSI, 2007*

EIGHTH GRADE SCIENCE INTEGRATED PHYSICS AND CHEMISTRY (IPC)

COURSE DESCRIPTION

The philosophy of the Science Department of Northeast Christian Academy is that all aspects of the universe were created by God; that He created man specially and individually; that He sustains His creation by His power; and that He has commanded man to have dominion over this creation. To obey this divine command, man must seek to understand God's creation. As Copernicus said, Christians seek "to think God's thoughts after Him." NCA considers the study of science as an act of obedience to God, a sacred trust.

COURSE GOALS

- To help the student determine his value system and understand how a Christian approaches the study of science.
- To clarify the different philosophies regarding the origin of the universe.
- To develop in the student a love and appreciation of God's creativity and provision as seen in the interaction of matter and energy.
- To help the student understand his role in this world.
- To introduce to the student the key elements necessary for him to continue with further studies of the sciences and the accompanying special studies.
- To help the student understand and use the scientific method.
- To help the student utilize the tools of science.
- To help the student understand, distinguish, and classify the various types of matter and the properties and measurement of such matter.

BIBLICAL GOALS

- To understand that God is the Creator of all things.
- To exhibit the Christ-like character trait of faith and the application of that faith.
- To appreciate that God is a God of order and that His creation follows certain laws, some of which are known and some of which are yet to be discovered.
- To recognize that we have a mandate from God to rule and subdue His creation. (Genesis 1:17)
- To demonstrate that the Bible and science are not in conflict.
- To love all truth as God's truth.
- To demonstrate good stewardship of the gifts God has given—mental, spiritual, and material.
- To respect and use creation properly.

INSTRUCTIONAL OBJECTIVES

- Demonstrate laboratory skills including observation, data collection, graphing, and reading scientific instrumentation.
- Use the scientific method during investigations to critique scientific ideas. Write and communicate scientific ideas properly
- Write, explain and solve physical problems.
- Express the contributions of scientists throughout history.
- Recognize examples of uniform and accelerated motion and the effects of forces on the motion of objects.
- Describe the physical and chemical properties of matter.
- Describe atomic structure.
- Identify the relationship between work and energy.
- Identify pure substances, mixtures and elements.
- Explain the development of the periodic table.
- Describe kinetic and potential energy and their transformations.
- Describe chemical bonding, chemical properties and molecular forces.
- Name chemical compounds and their formulas.
- Write and balance chemical equations.
- State and explain the Kinetic Theory and use the gas laws.
- Describe acids and bases.
- Describe and identify gravitational, electrical and magnetic forces.
- Compare types of electrical circuits.
- Identify the characteristics and behavior of sound and light waves.
- Explain the relationship between chemistry and physics.
- Identify and describe the 6 kinds of simple machines and identify ways In which they are used in daily life.
- Identify ways in which physical and chemical concepts affect daily life.

OBJECTIVES WITH SCOPE AND SEQUENCE

Unit 1: What Matters to the Christian?

Goals

- To understand the fundamental aspects of science and the proper role of the Christian in making value judgments in science.
- Understand the great benefits of studying and applying the study of science.
- Understand the orderly approach of using the scientific method when investigating problems and discovering solutions.

Objectives

- Identify the fundamental activity of science and bias in science.

- Define science.
- Compare and contrast pure science, applied science, technology.
- Recognize questions that science cannot answer.
- Describe the harmony between science and the Bible.
- List the benefits of studying science.
- Order the steps of the scientific method.
- Describe how the scientific method is used to solve problems, the three ways to verify a solution, and the spirit of reverence and awe that should pervade the work of a scientist that examines God's creation.
- Identify problems for which the scientific method is not appropriate.
- State two limitations of observations.
- Identity the major limitations of science.

Unit 2: A Description of Matter

Goals

- Understand the properties of matter and the definition of matter.
- Understand the application of the concept of uncertainty in measurements and the laws of conservation of mass regarding chemical and physical changes.
- Understand how to determine volume, density, and mass.
- Understand how to determine the differences between physical and chemical properties of matter and how liquids, solids, and gases differ from one another.
- Understand phase changes.
- Understand the differences among atoms, elements, compounds, solutions, and mixtures.

Objectives

- State the definition of matter in terms of its general properties.
- Identify SI prefixes and the SI units of length, mass, and volume.
- Compare and contrast mass and weight.
- Apply the law of conservation of mass to chemical and physical changes.
- Explain the concept of uncertainty in measurements.
- Write numbers in scientific notation.
- Compare and contrast physical and chemical properties.
- Describe the differences among solids, liquids, and gases.
- Describe the kinetic model of matter, physical changes in matter, and the relationship between phase changes and temperature changes.
- List the phases of matter.
- Define element and compound.
- Identify an atom as the smallest possible piece of an element.
- Explain the difference between elements and compounds.
- Distinguish between heterogeneous and homogeneous mixtures.
- List the four characteristics of a mixture.
- Describe the relationships between solutions and pure substances.

Unit 3: The Structure of Matter

Goals

- Understand the different atomic models as represented by Dalton, Thomson, Rutherford, and Bohr.
- Understand the nuclear atom and the processes of fission and fusion.
- Understand the rules governing electron dot configuration.
- Understand the periodic law and the properties of the elements that place them in the families of the periodic table.
- Understand how to read a periodic table of the elements.
- Understand how elements react with one another.
- Understand the concept of chemical bonding.

Objectives

- Describe two situations that require models.
- Describe the Dalton, Thompson, Rutherford, Bohr, and quantum atomic models.
- List and locate the three types of particles in an atom.
- Apply the rules that govern an electron's placement in an atom.
- State the periodic law.
- Identify the alkali-metal, alkaline-earth metal, halogen, and noble-gas families on the periodic table and the areas of the periodic table that contain metals, nonmetals, and metalloids.
- Recognize the characteristics common to elements in the same family.
- Describe three types of chemical bonds.
- Recognize the type of bond that will form in a given group of atoms.

Unit 4: The Chemistry of Matter

Goals

- Understand the concept of chemical changes.
- Understand how to write chemical formulas and balance chemical equations.
- Know the types of reactions occurring between chemicals.
- Understand the differences between solutions, solvents, and solutes and the principle that governs miscibility.
- Understand the properties and actions of acids and bases.
- Understand the concept of neutralization.

Objectives

- State the criteria for determining whether a chemical change has occurred.
- Identify the oxidation state of an element in a compound.
- Give the formulas of common polyatomic ions.
- Write binary formulas from oxidation numbers.
- Balance chemical equations.
- State the name of a binary or a ternary compound when given its formula.

- Compare and contrast the five types of reactions.
- Identify a chemical reaction as endothermic and exothermic reactions.
- Explain how to tell whether a solution is unsaturated, saturated, or supersaturated and tell how to make a supersaturated solution.
- Compare and contrast solutions, heterogeneous mixtures, suspensions, and colloids.
- Describe the structure of polar molecules, especially water.
- List the causes of freezing point depression and boiling point elevation.
- Explain miscibility and immiscibility and give examples of each.
- State the Arrhenius and Bronsted-Lowery definitions of acids and bases.
- List the properties of acids, bases, and salts.
- Identify strong acids and bases.
- Interpret a pH scale.
- Describe the process by which acids and bases neutralize each other.
- Write balanced equations for neutralization reactions.

Unit 5: The Motion of Matter

Goals

- Understand the differences among motion, force, and work.
- Understand the types of forces.
- Understand the six simple machines and how they affect work.
- Understand the mechanical advantage of simple machines.
- Understand Newton's three laws of motion.
- Understand the terms of speed, velocity, and acceleration as relating to motion.
- Understand the equations involving distance, acceleration, work, force, and mechanical advantage.
- Understand the forms of energy and the transformations of energy in common devices.
- Understand the use of equations to determine potential energy, kinetic energy, and momentum.
- Understand the laws of conservation of energy and momentum.

Objectives

- Identify two types of contact forces.
- Explain the advantages and disadvantages of friction.
- Compare and contrast work and power.
- Solve equations involving distance, acceleration, work, force, and mechanical advantage.
- Distinguish between speed and velocity..
- State Newton's three laws of motion and use the three laws to describe motion.
- Identify the forms of energy.
- Identify the energy transformations accomplished by common devices.
- Solve energy equations.
- Apply the laws of conservation of energy and momentum.

Unit 6: The Energy of Matter

Goals

- Understand the kinetic theory
- Understand temperature, calorie, specific heat, heat of fusion, and heat of vaporization.
- Understand the relationship between the Fahrenheit, Celsius and Kelvin scales.
- Understand the effects of thermal expansion.
- Understand static electricity, current electricity, and the law of charges.
- Understand insulators, semiconductors, and conductors.
- Understand the units of charge, electromotive force, resistance, and electrical power.
- Understand Ohm's law and the flow of electrons in series and parallel circuits.
- Understand the magnetic lines of force.
- Understand ferromagnetic, paramagnetic and diamagnetic materials.
- Understand how electricity can be generated from magnetic fields.
- Understand the operation of transformers.

Objectives

- Describe the kinetic theory of thermal energy, the three methods of heat transfer, and the effects of thermal expansion.
- Explain temperature, calorie, specific heat, heat of fusion, and heat of vaporization.
- Compare and contrast an object's temperature with the amount of thermal energy it possesses.
- Convert temperatures from one temperature scale to another.
- Calculate the number of calories required to raise the temperature of a material.
- Identify the relationship between a material's specific heat and its ability to store thermal energy.
- Compare and contrast static and current electricity.
- Compare and contrast insulators, semiconductors, and conductors.
- Describe the process that produces static electricity.
- Explain how a battery works.
- Diagram the flow of electrons in series and parallel circuits.
- Explain how fuses and circuit breakers protect electrical circuits.
- State and apply the law of charges.
- Identify the units of charge, electromotive force, resistance, and electrical power.
- Calculate resistances by using Ohm's law.
- Draw magnetic lines of force produced by common types of magnets.

- Compare and contrast ferromagnetic, paramagnetic, and diamagnetic materials.
- Describe the domain theory of magnetic materials.
- Explain how electricity can be generated from magnetic fields.
- Explain the operation of transformers.
- Explain how electric motors work.
- Apply the left-hand rule to draw magnetic lines of force produced by current-carrying wires and solenoids.

Unit 7: The Energy of Waves

Goals

- Understand the terminology of the structure of waves and the equation used to determine a missing quantity in a wave.
- Understand how waves are reflected, refracted, interfered, and destroyed.
- Understand the distinguishing features of wave lengths.
- Understand the electromagnetic spectrum.
- Understand the characteristic features of sound waves and the methods by which they are measured.
- Understand the principle of acoustics applied to reverberations, dead spots, and sound reflection.
- Understand the terms Doppler effect, resonance, pitch, loudness, and quality.
- Understand the distinguishing features of the sounds of musical instruments.
- Understand the differences and similarities between light waves and sound waves.
- Understand the visible light spectrum, luminous and illuminated objects, and real and virtual images.
- Understand the laws of reflection and refraction.
- Understand the different types of lenses and mirrors.

Objectives

- Identify the crests, troughs, wavelengths, amplitudes, and frequencies of a graphed wave.
- List the main characteristics and uses of the major classes of waves in the electromagnetic spectrum.
- Solve for the missing quantity of a wave.
- Compare and contrast longitudinal waves with transverse waves and constructive interference with destructive interference.
- Describe how waves are reflected and refracted and the relationship between frequency, wavelength, and energy of waves.
- Describe the compressions and rarefactions of sound waves, the Doppler effect, and the four classes of musical instruments.
- Identify the characteristics of waves that affect the pitch, loudness, quality of a sound.
- Explain the cause of resonance.
- Use the decibel scale to indicate the loudness of sounds.
- Apply general principles of acoustics to describe reverberations, dead spots, and sound reflection.
- Identify visible light's relative position in the electromagnetic spectrum.
- List in order the colors in the visible spectrum.
- Compare and contrast luminous objects with illuminated objects and real with virtual images.
- Define the measurements light-year and candela.
- State the inverse square law of illumination.
- Draw the paths of light rays reflected by mirrors and the paths of light rays refracted by lenses.

Unit 8: Some Matters of Technology

Goals

- Understand the engineering terms with reference to stress, strain, flexible, elastic, fatigue, and flex.
- Understand construction and feasibility of structures that accommodate stresses such as arches, I-beams, and columns.
- Understand the varying gear systems and their use in altering motion.
- Understand the vacuum tube diode and its use in alternating currents.
- Understand the types of semiconductors.
- Understand the process of radio transmission and reception.
- Understand the process of television transmission and reception.

Objectives

- Define stress and strain.
- Compare and contrast compressive stress and tensile stress.
- Describe how structural engineers accommodate compressive and tensile stresses, how arches and domes distribute forces to support weight, and the various ways that gears are used to alter motion.
- Recognize structurally sound building designs.
- List several ways to reduce friction.
- Describe how a vacuum tube diode rectifies alternating current, how vacuum tubes and transistors amplify a current.
- Identify the function of each element in a vacuum tube and the three main parts of a computer.
- Compare and contrast N-type semiconductors with P-type semiconductors.
- List some advantages that semiconductor components have over vacuum tube components.
- Describe the processes of radio transmission and reception and television transmission and reception.

METHODOLOGY

Presentation of Material

- Class Lecture: students add lecture notes to notes taken over assigned textbook reading assignments
- Daily reading assignments

- Laboratory and investigative exercises
- Class discussions/demonstrations led by students/teacher regarding material in review

Special Projects *(Optional)*

- Videos and guest speakers
- Field trips
- Science Fair projects demonstrating all steps of the scientific method and including a display and a research paper
- Collection of current newspaper/magazine articles relating to technological advances in the areas of the physical sciences

EVALUATION

- Tests
- Quizzes
- Class participation/class discussion
- Laboratory procedures/activities
- Projects, reports (including Science Fair)

RESOURCES

- *Science Spectrum: Physical Science Holt.* ISBN 0030-66469-1
- Region IV Educational Service Center Media Library.

HISTORY

FIFTH GRADE

COURSE DESCRIPTION

This course presents a basic survey of United States history and geography from early exploration to colonization to modern times. It gives the student a clear understanding of the Godly heritage and biblical principles upon which our nation was founded and transformed. This broad field of study offers students the opportunity to draw comparisons and form generalizations about the events of history. The material also provides opportunities for the application of biblical principles to life situations. This study of history should equip the student to develop a Christian world view through which he may filter the events of history.

COURSE OBJECTIVES

- Active thinking-sound, fact based reasoning
- Effective communicating--writing and speaking with a persuasive form
- Integrated understanding--demonstrating a grasp of the relationships between bodies of knowledge
- Meaningful applications--toward the solutions of human problems and challenges
- Sharpening a Christian worldview-because all truth is God's truth

COURSE SKILLS

- Be able to generalize concepts with relation to U.S. History and the world as a whole.
- Be able to research a topic and produce an original work using the information gathered.
- Refine a system for note-taking.

COURSE THEMES

Fall Semester

- Early People of the United States Exploration
- Colonization
- The American Revolution
- The Constitutional Convention

Spring Semester

- The Civil War Reconstruction
- The Great Depression World War II Modern Times

SIXTH GRADE HISTORY
WORLD CULTURES

COURSE DESCRIPTION

The 6th Grade world cultures class is devoted to exploration and discovery. In this class we will travel across the globe exploring the unique features of the seven continents. As we travel we will learn about the physical geography, history, culture, and the current events in each region. By aligning geography with cultural studies, the students will better understand the relationship between environment and social groups.

COURSE OBJECTIVES

- Active Thinking - sound, fact based reasoning
- Effective Communicating - writing and speaking with persuasive form
- Integrated Understanding - demonstrating a grasp of the relationship between diverse concepts
- Meaningful Application - toward the solution of human problems and challenges
- Sharpening a Christian Worldview - because all truth is God's truth

COURSE SKILLS

- Be able to analyze and discuss the causes and effects of cultural situations and historical and geographical events across the globe.
- Be able to communicate cultural, geographical, and historical facts and concepts in the form of independent reports and oral presentations.
- Develop the habit of relating global to local events and historical to current events.
- Develop study skills and note-taking skills.

COURSE THEMES

Fall Semester

- Geography: Tools and Concepts
- United States and Canada
- Latin America
- Europe and Russia

Spring Semester

- Asia
- Africa
- The Pacific Realm

SEVENTH GRADE HISTORY
U.S. HISTORY A

COURSE DESCRIPTION

In this course, students will learn that history is evidence of God's constant involvement and direction in the relationships of men, nations, and government. Through the study of United States and Texas history, this will become evident. The goal of this course is to help students think beyond factual dates and events and form a general understanding of recurrent patterns and themes within the history or our state and the early years
of our nation.

COURSE OBJECTIVES

- Active Thinking - sound, fact based reasoning
- Effective Communicating - writing and speaking with persuasive form
- Integrated Understanding - demonstrating a grasp of the relationships between bodies of knowledge
- Meaningful Application - toward the solution of human problems and challenges
- Sharpening a Christian Worldview - because all truth is God's truth

COURSE SKILLS

- Generalize concepts with relation to U.S. History, Texas history, and the world as a whole.
- Research a topic and produce an original work using the information gathered.
- Refine a system for note-taking.

COURSE THEMES

Fall Semester

- Early People of the United States
- Exploration
- Colonization
- The American Revolution

Spring Semester

- The Constitutional Convention
- Manifest Destiny
- The Civil War
- Missions and Settlements of Texas
- The Road to Texas Independence
- The Lone Star Republic

EIGHTH GRADE HISTORY
U.S. HISTORY B

(integrated throughout with language arts curriculum)

COURSE DESCRIPTION

Proverbs 2:1-6
My son, if you accept my words and store up my commands within you, turning your ear to wisdom and applying your heart to understanding, and if you call out for insight and cry aloud for understanding, and if you look for it as for silver and search for it as for hidden treasure, then you will understand the fear of the LORD and find the knowledge of God. For the LORD gives wisdom, and from his mouth come knowledge and understanding.

Many of our great nation's forefathers called out for insight and the LORD answered them. This nation was founded by men who had great faith in the Lord and sought his counsel when making the awesome decisions that forged this new country.

There is great debate in our nation today about this very issue. Many would have us rewrite that bit of history. My goal for teaching U.S. history in a Christian school environment is to instill in our students an intense pride in the godly heritage of America, and to seek the knowledge of God -as did our leaders over two hundred years ago.

COURSE GOALS

- To introduce the students to U.S. history from early exploration and colonization through the Civil War and into Reconstruction.
- To introduce students to the key historical figures who have influenced the development of our nation.
- To show a common thread amongst these figures - particularly 'America's Pathfinders' -those four presidents who faces adorn Mt. Rushmore. The common thread in these men is a driving desire to preserve the Union, sometimes at considerable personal risk.
- To clarify for the students the reasons for the development of America as a Republic, and to instill in them a sense of individual responsibility to preserve the nation.
- To relate historical events to current events.
- To build upon and enhance analytical and critical thinking skills.

BIBLICAL GOALS

- To integrate God's words and Biblical concepts wherever possible throughout the course.

- To help the student's recognize God's hand in the shaping of this country's history, and His ultimate control over historical events.
- To guide the students to uncover these events of history through many sources, and help them discern any Biblical truths found within each source. This is the foundation for developing a strong Christian worldview through which they will filter all subsequent learning.
- To help the student identify God's blessings on our nation.
- To develop in the student the godly characteristics that will make them the nation's next great leaders; personal responsibility, diligence, faith, respect and good citizenship.
- To develop in the students a desire to go out into the communities of this country and around the world as witnesses for Christ and doers of godly deeds.

Train up a child in the way he should go: and when he is old, he will not depart from it. Proverbs 22:6

INSTRUCTIONAL OBJECTIVES

Using Addison-Wesley's *Why We Remember*, as the main textbook, and drawing from various *Bob Jones* and *A Beka* series for the Christian perspective, the students study our nation's history, beginning with its earliest settlers. A careful and sensitive approach is taken to present the origins of our nation and introduce the various cultures, religions and ethnicities that make up this great 'melting pot'.

Our theme for this year will be *Discovering America's Path-finders*. On a summer trip to Mt. Rushmore I was inspired by the park ranger, Robert Coon, who impressed upon us the importance of the four presidents who were deliberately chosen to represent our country and be immortalized on the mountain. Ranger Coon dubbed them "America's Pathfinders" and offered reasons why these four presidents had been selected for the sculpture. Throughout this course, we will reflect on these four men, and many like them, who faced awesome, sometimes heartbreaking (and possible career-breaking) decisions to brilliantly lead our country through wars, economic challenges, and moral and ethical dilemmas in the forging of this great nation.

Maps and geography activities will be included in the course, designed to review the historical and geographical information presented in the textbook. History concepts are integrated into the reading and language arts instruction. Likewise, language arts strategies are interwoven into the U.S. History curriculum. English composition grades will be taken for all essays written for history class. Students will write historical or biographical research papers which count as a dual major grade for both history and language arts. Classroom discussions and reenactments will be integrated and relate to both the history curriculum and the historical fiction novels studied. Current events will also be discussed in class, as they relate to current topics studied. Biblical principles will be integrated throughout all curriculum.

Introduction

• In Grade 8, students study the history of the United States from the early colonial period through Reconstruction. The knowledge and skills in subsection (b) of this section comprise the first part of a two-year study of U.S. history. The second part, comprising U.S. history since Reconstruction to the present, is provided in §113.32 of this title (relating to United States History Studies Since Reconstruction (One Credit)). The content builds upon that from Grade 5 but provides more depth and breadth. Historical content focuses on the political, economic, and social events and issues related to the colonial and revolutionary eras, the creation and ratification of the U.S. Constitution, challenges of the early Republic, westward expansion, sectionalism, Civil War, and Reconstruction. Students describe the physical characteristics of the United States and their impact on population distribution and settlement patterns in the past and present. Students analyze the various economic factors that influenced the development of colonial America and the early years of the Republic and identify the origins of the free enterprise system. Students examine the American beliefs and principles, including limited government, checks and balances, federalism, separation of powers, and individual rights, reflected in the U.S. Constitution and other historical documents. Students evaluate the impact of Supreme Court cases and major reform movements of the 19th century and examine the rights and responsibilities of citizens of the United States as well as the importance of effective leadership in a democratic society. Students evaluate the impact of scientific discoveries and technological innovations on the development of the United States. Students use critical- thinking skills, including the identification of bias in written, oral, and visual material.

• To support the teaching of the essential knowledge and skills, the use of a variety of rich primary and secondary source material such as the complete text of the U.S. Constitution and the Declaration of Independence; landmark cases of the U.S. Supreme Court; biographies and autobiographies; novels; speeches, letters, and diaries; and poetry, songs, and artworks is encouraged. Selections may include excerpts from the letters of John and Abigail Adams, an excerpt from the Seneca Falls Declaration of Sentiments and Resolutions, and poems of the Civil War era. Motivating resources are also available from museums, historical sites, presidential libraries, and local and state preservation societies.

• The eight strands of the essential knowledge and skills for social studies are intended to be integrated for instructional purposes with the history and geography strands establishing a sense of time and a sense of place. Skills listed in the geography and social studies skills strands in subsection (b) of this section should be incorporated into the teaching of all essential knowledge and skills for social studies. A greater depth of understanding of complex content material can be attained when integrated social studies content from the various disciplines and critical-thinking skills are taught together.

• Throughout social studies in Kindergarten-Grade 12, students build a foundation in history; geography; economics; government; citizenship; culture; science, technology, and society; and social studies skills. The content, as appropriate for the grade level or course, enables students to understand the importance of patriotism, function in a free enterprise society, and appreciate the basic democratic values of our state and nation as referenced in the Texas Education Code.

Knowledge and skills

History. The student understands traditional historical points of reference in U.S. history through 1877.

- Identify the major eras in U.S. history through 1877 and describe their defining characteristics
- Apply absolute and relative chronology through the sequencing of significant individuals, events, and time periods; and (C) explain the significance of the following dates: 1607, 1776, 1787, 1803, and 1861-1865.

History. The student understands the causes of exploration and colonization eras.

- Identify reasons for European exploration and colonization of North America.
- Compare political, economic, and social reasons for establishment of the 13 colonies.

History. The student understands the foundations of representative government in the United States.

- Explain the reasons for the growth of representative government and institutions during the colonial period.
- Evaluate the importance of the Mayflower Compact, the Fundamental Orders of Connecticut, and the Virginia House of Burgesses to the growth of representative government.
- Describe how religion contributed to the growth of representative government in the American colonies.

History. The student understands significant political and economic issues of the revolutionary era.

- Analyze causes of the American Revolution, including mercantilism and British economic policies following the French and Indian War.
- Explain the roles played by significant individuals during the American Revolution, including Samuel Adams, Benjamin Franklin, King George III, Thomas Jefferson, the Marquis de Lafayette, Thomas Paine, and George Washington.
- Explain the issues surrounding important events of the American Revolution, including declaring independence; writing the Articles of Confederation; fighting the battles of Lexington, Concord, Saratoga, and Yorktown; and signing the Treaty of Paris.
- Analyze the issues of the Philadelphia Convention of 1787, including major compromises and arguments for and against ratification.

History. The student understands the challenges confronted by the government and its leaders in the early years of the Republic.

- Describe major domestic problems faced by the leaders of the new Republic such as maintaining national security, creating a stable economic system, setting up the court system, and defining the authority of the central government.
- Summarize arguments regarding protective tariffs, taxation, and the banking system.
- Explain the origin and development of American political parties.
- Explain the causes of and issues surrounding important events of the War of 1812.
- Trace the foreign policies of Presidents Washington through Monroe and explain the impact of Washington's Farewell Address and the Monroe Doctrine.
- Explain the impact of the election of Andrew Jackson, including the beginning of the modern Democratic Party.
- Analyze federal and state Indian policies and the removal and resettlement of Cherokee Indians during the Jacksonian era.

History. The student understands westward expansion and its effects on the political, economic, and social development of the nation.

- Explain how the Northwest Ordinance established principles and procedures for orderly expansion of the United States.
- Explain the political, economic, and social roots of Manifest Destiny.
- Analyze the relationship between the concept of Manifest Destiny and the westward growth of the nation
- Explain the major issues and events of the Mexican War and their impact on the United States.
- Identify areas that were acquired to form the United States.

History. The student understands how political, economic, and social factors led to the growth of sectionalism and the Civil War.

- Analyze the impact of tariff policies on sections of the United States before the Civil War.
- Compare the effects of political, economic, and social factors on slaves and free blacks.
- Analyze the impact of slavery on different sections of the United States.
- Compare the provisions and effects of congressional conflicts and compromises prior to the Civil War, including the roles of John C. Calhoun, Henry Clay, and Daniel Webster.

History. The student understands individuals, issues, and events of the Civil War.

- Explain the roles played by significant individuals during the Civil War, including Jefferson Davis, Ulysses S. Grant, Robert E. Lee, and Abraham Lincoln.
- Explain the issues surrounding significant events of the Civil War, including the firing on Fort Sumter, the battles of Gettysburg and Vicksburg, the announcement of the Emancipation Proclamation, the assassination of Lincoln, and Lee's surrender at Appomattox Court House.

- Analyze Abraham Lincoln's ideas about liberty, equality, union, and government as contained in his first and second inaugural addresses and the Gettysburg Address.

History. The student understands the effects of Reconstruction on the political, economic, and social life of the nation.

- Evaluate legislative reform programs of the Radical Reconstruction Congress and reconstructed state governments.
- Describe the economic difficulties faced by the United States during Reconstruction.
- Explain the social problems that faced the South during Reconstruction and evaluate their impact on different groups.

Geography. The student uses geographic tools to collect, analyze, and interpret data.

- Create thematic maps, graphs, charts, models, and databases representing various aspects of the United States.
- Pose and answer questions about geographic distributions and patterns shown on maps, graphs, charts, models, and databases.

Geography. The student understands the location and characteristics of places and regions of the United States, past and present.

- Locate places and regions of importance in the United States during the 18th and 19th centuries.
- Compare places and regions of the United States in terms of physical and human characteristics.
- Analyze the effects of physical and human geographic factors on major historical and contemporary events in the United States.

Geography. The student understands the physical characteristics of the United States during the 18th and 19th centuries and how humans adapted to and modified the environment.

- Analyze how physical characteristics of the environment influenced population distribution, settlement patterns, and economic activities in the United States during the 18th and 19th centuries.
- Describe the consequences of human modification of the physical environment of the United States.
- Describe how different immigrant groups interacted with the environment in the United States during the 18th and 19th centuries.

Economics. The student understands why various sections of the United States developed different patterns of economic activity.

- Identify economic differences among different regions of the United States.
- Explain reasons for the development of the plantation system, the growth of the slave trade, and the spread of slavery.
- Analyze the causes and effects of economic differences among different regions of the United States at selected times in U.S. history.

Economics. The student understands how various economic forces resulted in the Industrial Revolution in the 19th century.

- Analyze the War of 1812 as a cause of economic changes in the nation.
- Identify the economic factors that brought about rapid industrialization and urbanization.

Economics. The student understands the origins and development of the free enterprise system in the United States.

- Explain why a free enterprise system of economics developed in the new nation.
- Describe the characteristics and the benefits of the U.S. free enterprise system during the 18th and 19th centuries.

Government. The student understands the American beliefs and principles reflected in the U.S. Constitution and other important historic documents.

- Identify the influence of ideas from historic documents including the Magna Carta, the English Bill of Rights, the Mayflower Compact, the Declaration of Independence, the Federalist Papers, and selected anti-federalist writings on the U.S. system of government.
- Summarize the strengths and weaknesses of the Articles of Confederation.
- Identify colonial grievances listed in the Declaration of Indpendence and explain how those grievances were addressed in the U.S. Constitution and the Bill of Rights.
- Analyze how the U.S. Constitution reflects the principles of limited government, republicanism, checks and balances, federalism, separation of powers, popular sovereignty, and individual rights.

Government. The student understands the process of changing the U.S. Constitution and the impact of amendments on American society.

- Summarize the purposes for and processes of changing the U.S. Constitution.
- Describe the impact of 19th-century amendments including the 13th, 14th, and 15th amendments on life in the United States.
- Identify the origin of judicial review and analyze examples of congressional and presidential responses.

Government. The student understands the dynamic nature of the powers of the national government and state governments in a federal system.

- Analyze the arguments of the Federalists and Anti-Federalists, including those of Alexander Hamilton, Patrick Henry, James Madison, and George Mason.
- Describe historical conflicts arising over the issue of states' rights, including the Nullification Crisis and the Civil War.

Government. The student understands the impact of landmark Supreme Court cases.

- Summarize the issues, decisions, and significance of landmark Supreme Court cases including Marbury v. Madison, M Culloch v. Maryland, and Gibbons v. Ogden.

- Evaluate the impact of selected landmark Supreme Court decisions including Dred Scott v. Sandford on life in the United State.

Citizenship. The student understands the rights and responsibilities of citizens of the United States.

- Define and give examples of unalienable rights.
- Summarize rights guaranteed in the Bill of Rights.
- Explain the importance of personal responsibilities such as accepting responsibility for one's behavior and supporting one's family.
- Identify examples of responsible citizenship, including obeying rules and laws, voting, and serving on juries.
- Summarize the criteria and explain the process for becoming a naturalized citizen of the United States.
- Explain how the rights and responsibilities of U.S. citizens reflect our national identity.

Citizenship. The student understands the importance of voluntary individual participation in the democratic process.

- Explain the role of significant individuals such as William Penn in the development of self-government in colonial America.
- Evaluate the contributions of the Founding Fathers as models of civic virtue.
- Identify reasons for and the impact of selected examples of civil disobedience in U.S. history such as Henry David Thoreau's refusal to pay a tax.

Citizenship. The student understands the importance of the expression of different points of view in a democratic society.

- Identify different points of view of political parties and interest groups on important historical and contemporary issues.
- Describe the importance of free speech and press in a democratic society.
- Summarize a historical event in which compromise resulted in a peaceful resolution.

Citizenship. The student understands the importance of effective leadership in a democratic society.

- Analyze the leadership qualities of elected and appointed leaders of the United States such as Abraham Lincoln, John Marshall, and George Washington.
- Describe the contributions of significant political, social, and military leaders of the United States such as Frederick Douglass, John Paul Jones, James Monroe, and Elizabeth Cady Stanton.

Culture. The student understands the relationships between and among people from various groups, including racial, ethnic, and religious groups, during the 17th, 18th, and 19th centuries.

- Identify selected racial, ethnic, and religious groups that settled in the United States and their reasons for immigration.
- Explain the relationship between urbanization and conflicts resulting from differences in religion, social class, and political beliefs.
- Identify ways conflicts between people from various racial, ethnic, and religious groups were resolved.
- Analyze the contributions of people of various racial, ethnic, and religious groups to our national identity.
- Identify the political, social, and economic contributions of women to American society.

Culture. The student understands the major reform movements of the 19th century.

- Describe the historical development of the abolitionist movement.
- Evaluate the impact of reform movements including public education, temperance, women's rights, prison reform, and care of the disabled.

Culture. The student understands the impact of religion on the American way of life.

- Trace the development of religious freedom in the United States.
- Describe religious influences on immigration and on social movements, including the impact of the first and second Great Awakenings.
- Analyze the impact of the first amendment guarantees of religious freedom on the American way of life.

Culture. The student understands the relationship between the arts and the times during which they were created.

- Describe developments in art, music, literature, drama, and other cultural activities in the history of the United States.
- Analyze the relationship between fine arts and continuity and change in the American way of life.
- Identify examples of American art, music, and literature that transcend American culture and convey universal themes.

Science, technology, and society. The student understands the impact of science and technology on the economic development of the United States.

- Explain the effects of technological and scientific innovations such as the steamboat, the cotton gin, and the Bessemer steel process.
- Analyze the impact of transportation systems on the growth, development, and urbanization of the United States.
- Analyze how technological innovations changed the way goods were manufactured and marketed, nationally and internationally.
- Explain how technological innovations led to rapid industrialization.

Science, technology, and society. The student understands the impact of scientific discoveries and technological innovations on daily life in the United States.

- Compare the effects of scientific discoveries and technological innovations that have influenced daily life in different periods in U.S. history.
- Describe how scientific ideas influenced technological developments during different periods in U.S. history.
- Identify examples of how industrialization changed life in the United States.

Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology.

- Differentiate between, locate, and use primary and secondary sources such as computer software, databases, media and news services, biographies, interviews, and artifacts to acquire information about the United States;
- Analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions.
- Organize and interpret information from outlines, reports, databases, and visuals including graphs, charts, timelines, and maps.
- Identify points of view from the historical context surrounding an event and the frame of reference which influenced the participants.
- Support a point of view on a social studies issue or event.
- Identify bias in written, oral, and visual material.
- Evaluate the validity of a source based on language, corroboration with other sources, and information about the author.
- Use appropriate mathematical skills to interpret social studies information such as maps and graphs.

Social studies skills. The student communicates in written, oral, and visual forms.

- Use social studies terminology correctly.
- Use standard grammar, spelling, sentence structure, and punctuation.
- Transfer information from one medium to another, including written to visual and statistical to written or visual, using computer software as appropriate.
- Create written, oral, and visual presentations of social studies information.

Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings.

- Use a problem-solving process to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.
- Use a decision-making process to identify a situation that requires a decision, gather information, identify options, predict consequences, and take action to implement a decision.

METHODOLOGY

Instruction Methods Used

- Textbook exercises
- Lecture
- Board/overhead projector work
- Personal White Boards
- Games
- Story Telling
- Interactive Notebook
- Primary and secondary source materials
- Internet Research
- Movies

Student groupings and modalities used to engage all learners

- Enactments and Hot Seating
- Field Trips
- Group and individual projects

EVALUATION

- Grading of projects, exercises, and case studies provided in text materials
- Teacher observations of student productivity and participation
- Tests and quizzes, including practical exams
- Self- Evaluations

RESOURCES

Textbook(s)

- Addison-Wesley's *Why We Remember*
- Various *Bob Jones* and *A Beka* series for the Christian perspective
- Various literature about Mt. Rushmore, and the four presidents featured
- Bible

Technology

- Internet Research
- Power Points
- Videos

Assigned classroom Historical Fiction novels to reinforce learning:

- *The Witch of Blackbird Pond* (early colonial days)
- *The Keeping Room* (Revolutionary War for Independence)
- *Across Five Aprils* (Civil War)
- *The Call of the Wild* (Gold Rush era)

Various news papers, and other periodicals for current events

LATIN

FIFTH GRADE

COURSE DESCRIPTION

This course is a continuation of the 3rd and 4th grade series. Student will have completed the first half of Minimus Secundus in their 4th grade year and will complete the second half in their 5th grade year. Students continue to explore Roman

Britain through colorful stories about the family of Flavius Cerialis (a Roman soldier who served as a prefect in the Roman army at the beginning of the second century AD). Students will expand their knowledge of the Roman culture, the Latin language, etymology, and mythology.

COURSE GOALS

- Understand what life was like in Britain under Roman rule
- Develop a more advanced level of understanding of Latin sentence structure
- Have a very basic understanding of the nominative and accusative cases
- Be able to recognize and translate basic Latin prepositions
- Be able to conjugate "to be" and one or two action verbs in the present tense
- Be familiar with some elementary level mythology and be able to re-tell at least 5 myths in their own words
- Have developed a strong familiarity with the core vocabulary from the series
- Orally translate Latin stories from text using a combination of memorized vocabulary and vocabulary lists
- Recite the history of the founding of Rome
- Recite "Cogito Ergo Sum" using correct pronunciation
- Be able to recognize and use some Latin roots, suffixes, and prefixes to determine meanings of English words
- Have a love for languages and a desire to further pursue la guage study

ESSENTIAL THEMES

- Life of Britain under Roman rule
- Roman customs and traditions
- Etymology
- English grammar through simple Latin
- Basic verb conjugation
- Mythology

REQUIRED TEXTS

- *Minimus Secundus*, Cambridge University Press

COURSE REQUIREMENTS

- Grades are bases solely upon class participation

METHODOLOGY

- Students will learn through direct instruction, reading, memory games, board word, Smart Board technology, chants, songs, etc.

SCOPE AND SEQUENCE

- The scope and sequence for this course is included separately and is subject to change at my discretion.

COMMUNICATION

- Communication among the student, parent, and teacher is vital for the ultimate success of the student. E-mails, notes, phone calls, and/or conferences are welcome
- Parents are invited to attend any class session. I ask that parents coordinate with me for the day they would like to visit to insure they can achieve the purpose of their visit with what we have planned for a particular day.

LATIN 1
SIXTH - EIGHTH GRADE

COURSE DESCRIPTION

Latin 1 is an introductory level class which focuses on the development of the ability to read and write Latin. Included in the reading materials are short passages about Roman life. From these passages the student can gain insight into the elements of Roman culture and history which have affected modern civilization, patterns of human relationships, and important historical events.

COURSE GOALS

- Be able to read and translate introductory level Latin passages with fluency and confidence
- Develop, utilize, and apply foundational, grammar skills in Latin oral and written translation
- Strengthen deductive reasoning, interactive learning, and critical thinking skills
- Develop an understanding and appreciation of the history and culture of Roman and Greek civilizations and their influences upon world governments, art, science, religion, and literature
- Develop a wide variety of approaches to language learning through the use of audio visual and internet resources
- Utilize Latin derivatives to decode unfamiliar vocabulary words in other languages such as English, French, and Italian
- Increase knowledge and appreciation of mythology and its influence upon world literature and art

ESSENTIAL THEMES

- Grammar – English and Latin
- Latin Oral and written translation
- Greco-Roman Culture
- Greco-Roman Mythology
- Etymology

SPANISH 1
EIGHTH GRADE

COURSE DESCRIPTION

Spanish I is designed to give students a basic knowledge of Spanish vocabulary, grammar and culture.

COURSE GOALS

The student will gain a basic knowledge of Spanish vocabulary, grammar and culture. More specifically they will learn the basic skills in listening, speaking, reading, writing Spanish in the present tense, a form of the future tense, and two forms of the past tense. The student will begin to develop insight into the nature of language and culture by comparing the student's own language and culture to another. The student will make connections with other subject areas as they are integrated into Spanish I to reinforce and validate the language.

COURSE THEMES

Fall Semester

- Vocabulary : Greetings, alphabet, days of the week, classroom, house, family, numbers, telling time, question words
- Grammar : Present tense verbs, regular and some irregular, present progressive, subject pronouns, adjectives, possessive adjectives
- Novel : *Pobre Ana*
- Authentic Spanish Movies : *Julio y su Angel*
  El milagro de Marcelino
- 4 or 5 Short stories from : *Look, I CanTalk*
- Christian creeds 1-5

Spring Semester

- Vocabulary : Parts of the body, clothing, colors, food, South American Countries and their capitals, vocations
- Grammar : Object pronouns
  ir+a+ infinitie –
  Hacer + tiempo + que
  Tener + que + infinitive, uses of tener
  Acabar + que + infinitive
  Past tense – Preterite and imperfect
- Novel : *Patricia va a California*
- Authentic Spanish Movies : *Buscando a Nemo, La isla de Nim*
- 4 or 5 Short stories from : *Look, I CanTalk*
- Christian creeds 6-11

REQUIRED TEXTS

- *Spanish I for Christian Schools*, Bob Jones University
- *Look, I Can Talk* : Spanish mini stories by Blaine Ray
- Level I Novels : *Pobre Ana,* and *Patricia va a California* both by Blaine Ray

ADDITIONAL RESOURCES

- 123 Speak Spanish verb guide
- Viva la Música : CD and lyrics
- Singing the Basics : CD

TECHNOLOGY
FIFTH & SIXTH GRADE

COURSE DESCRIPTION

Through the study of technology applications, students learn to make informed decisions. By using technology as a tool to support the work of individuals and groups, students will solve problems and evaluate the results.

In our attempt to educate and prepare young people for a life of service to God, it is essential that we recognize the increasingly important role that technology is playing in society. Additionally, Christians use computer technology to study, communicate and evangelize. E-mail has become the communication tool of choice for missionaries and other Christians. Web pages may be used to share the gospel and information about the work of the Lord. At the middle school level, skills are introduced that will help students to be productive in their schoolwork, at home, and at church. Additionally, concepts of time management and discernment are introduced to help students use their computer time productively and not wastefully.

COURSE DESCRIPTION

- To gain literacy about computer history, theory, hardware and software.
- To gain proficiency in manipulating acurrent, widely used operating system.
- To give specific computer skills which enhance understanding and application of computer technology.
- To keyboard accurately and effectively.
- To increase effectiveness of written communication and save time by using a word processing program.
- To correctly format documents for school.
- To conduct research on the Internet, quickly navigating search engines to find desirable websites and gain a strategy for dete mining the reliability of information found.
- To create multimedia presentations.

COURSE GOALS

- Students will endeavor to be good stewards of their time.
- Students will earn how computer technology can assist in academics, bible study and communication among Christian ministries and evangelism.
- Students will understand the computer as a tool, not allowing it to become a toy or distraction.

- Students will understand the real dangers of their purity being damaged with access to improper materials on the Internet.
- Students will be able to safeguard against such materials on the computer.

INSTRUCTIONAL OBJECTIVES

Knowledge and Skills Foundations

Foundations. The student demonstrates knowledge and appropriate use of hardware components, software programs, and their connections.

- Demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components.
- Compare, contrast and appropriately use the various input, processing, output, and primary/secondary storage devices.
- Demonstrate the ability to select and use software for a defined task according to quality, appropriateness, effectiveness and efficiency.
- Delineate and make necessary adjustments regarding compatibility issues including, but not limited to, digital file formats and cross platform connectivity.
- Use technology terminology appropriate to the task.
- Perform basic software application functions including, but not limited to, opening and application program and creating, modifying, printing, and saving documents.
- Explain the differences between analog and digital technology systems and give examples of each.
- Use terminology related to the Internet appropriately including, but not limited to, electronic mail (e-mail), Uniform Resource Locators (URLs), electronic bookmarks, local area networks (LANs), wide area networks (WANs), World Wide Webb (WWW) page, and HyperText Markup Language (HTML).
- Compare and contrast LANs, WANs, Internet, and intranet.

Foundations. The student uses data input skills appropriate to the task.

- Demonstrate proficiency in the use of a variety of input devices sue as mouse/track pad, keyboard, microphone, digital camera, printer, scanner, disk/disc, modem, CD-ROM, or joystick.
- Demonstrate keyboarding proficiency in technique and posture while building speed.
- Use digital keyboarding standards for data input such as one space after punctuation, the use of em/en dashes, and smart quotation marks.
- Develop strategies for capturing digital files while conserving memory and retaining image quality.

Foundations. The student complies with the laws and examines the issues regarding the use of technology in society.

- Discuss copyright laws/issues and model ethical acquisition and use of digital information, citing sources using established methods.
- Demonstrate proper etiquette and knowledge of acceptable use while in an individual classroom, lab, or on the Internet and intranet.
- Describe the consequences regarding copyright violations including, but not limited to, computer hacking, computer piracy, intentional virus setting, and invasion of privacy.
- Identify the impact of technology applications on society through research, interviews, and personal observation.
- Demonstrate knowledge of the relevancy of technology to future careers, life-long learning, and daily living for individuals of all ages.

Knowledge and Skills Information Acquisitions

Information acquisition. The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision.

- Use strategies to locate and acquire desired information on LANs and WANs, including the Internet, intranet, and collaborative software.
- Apply appropriate electronic searches strategies in the acquisition of information including keyword and Boolean search strategies.

Information acquisition. The student acquires electronic information in a variety of formats, with appropriate supervision.

- Identify, create, and use files in various formats such as text, bitmapped/vector graphics, image, video, and audio files.
- Demonstrate the ability to access, operate, and manipulate information from secondary storage and remote devices including CD-ROM/laser discs and on-line catalogs.
- Use on-line help and other documentation.

Information acquisition. The student evaluates the acquired electronic information.

- Determine and employ methods to evaluate the electronic information for accuracy and validity.
- Resolve information conflicts and validate information through accessing, researching, and comparing data.
- Demonstrate the ability to identify the source, location, media type, relevancy, and content validity of available information.

Knowledge and Skills Solving Problems

Solving Problems. The student uses appropriate computer-based productivity tools to create and modify solutions to problems.

- Plan, create, and edit documents created with a word processor using readable fonts, alignment, page setup, tabs, and ruler settings
- Create and edit spreadsheet documents using all data types, formulas and functions, and chart information.
- Plan, create and edit databases by defining fields, entering data, and designing layouts appropriate for reporting.
- Demonstrate proficiency in the use of multimedia authoring

programs by creating linear or non-linear projects incorporating text, audio, video, and graphics.

- Create a document using desktop publishing techniques including, but not limited to, the creation of multi-column or multi-section documents with a variety of test-wrapped frame formats.
- Differentiate between and demonstrate the appropriate use of a variety of graphic tools found in draw and paint applications.
- Integrate two or more productivity tools into a document including, but not limited to, tables, charts and graphs, graphics from paint and draw programs, and mail merge.
- Use interactive virtual environments, appropriate to level, such as virtual reality or simulations.
- Use technical writing strategies to create products such as a technical instruction guide.
- Use foundation and enrichment curricula in the creation of products.

Solving Problems. The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge.

- Participate with electronic communities as a learner, initiator, contributor, and teacher/mentor.
- Complete tasks using technological collaboration such as sharing information through on-line communications.
- Use groupware, collaborative software, and productivity tools to create products.
- Use technology in self-directed activities by sharing products for defined audiences.
- Integrate acquired technology applications skills, strategies, and use of the word processor, database, spreadsheet, telecommunications, draw, paint, and utility programs into the foundtion and enrichment curricula.

Solving Problems. The student uses technology applications to facilitate evaluation of work, both process and product.

- Design and implement procedures to track trends, set timelines, and review/evaluate progress for continual improvement in process and product.
- Resolve information conflicts and validate information through research and comparison of data.

Knowledge and Skills Communication

Communication. The student formats digital information for appropriate and effective communication.

- Use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports.
- Demonstrate the use of a variety of layouts in a database to communicate information appropriately including horizontal and vertical layouts.
- Create a variety of spreadsheet layouts containing descriptive labels and page settings.
- Demonstrate appropriate use of fonts, styles, and sizes, as well as effective use of graphics and page design to effectively communicate.
- Match the chart style to the data when creating and labeling charts.

Communication. The student delivers the product electronically in a variety of media, with appropriate supervision.

- Publish information in a variety of ways including, but not limited to, printed copy, monitor display, Internet documents, and video.
- Design and create interdisciplinary multimedia presentations for defined audiences including audio, video, text, and graphics.
- Use telecommunication tools for publishing such as Internet browsers, video conferencing, or distance learning.

Communication. The student uses technology applications to facilitate evaluation of communication, both process and product.

- Design and implement procedures to track trends, set timelines, and review and evaluate the product using technology tools such as database mangers, daily/monthly planners, and project management tools.
- Determine and employ technology specifications to evaluate projects for design, content delivery, purpose, and audience, demonstrating that process and product can be evaluated using established criteria or rubrics.
- Select representative products to be collected and stored in an electronic evaluation tool.
- Evaluate the product for relevance to the assignment or task.

SCOPE AND SEQUENCE

- The scope and sequence for this course is included separately.

METHODOLOGY

- Generally a tutorial approach using programmed instructional materials which include regular practical exercises.
- Basic lecture format, with notes, handouts, and large screen monitor.
- Special projects which call upon applications being learned.
- Discussion.
- Regular timed keyboarding drills.

EVALUATION

- Grading of projects, exercises, and case studies provided in the text materials.
- Teacher observations of student productivity and participation.
- Peer evaluation and collaboration.
- Tests and quizzes, including practical exams.

RESOURCES

- Textbook : *Learning Microsoft Office 2002*, Pearson Prentice Hall DDC (Pearson Education, Inc.), 2003
- Textbook : *Stepping Through Microsoft Office 2003 with Business Applications*, Pearson Prentice Hall DDC Publications (Pearson Education, Inc.), 2004
- Overhead projector, whiteboard, computer and Internet.
- Questia Database
- Region IV Educational Service Center Media Library
- Teacher Created Materials
- Type To Learn3 by Sunburst
- Kid Pix Deluxe3 by Broderbund
- Mission Think by The Learning Company
- I Spy by Scholastic
- Mighty Math by Edmark

  Number Heroes

  Calculating Crew

  Zoo Zillions

TECHNOLOGY
SEVENTH & EIGHTH GRADE

COURSE DESCRIPTION

Christian educators must focus on bringing those we come in contact with into a deeper and real relationship with Christ. Enhancing their "light" spiritually and physically by giving them the skills they need to go out into the world and live a life that brings the respect of others.

In Matthew 5:14-16*, it is explained the importance of keeping that light shining. You are the light of the world. A city on a hill cannot be hidden. Neither do people light a lamp and put it under a bowl. Instead they put it on its stand, and it gives light to everyone in the house. In the same way, let your light shine before men, that they may see your good deeds and praise your Father in heaven.*

In our attempt to educate and prepare young people for a life of service to God, it is essential that we recognize the increasingly important role that technology is playing in society. Additionally, Christians use computer technology to study, communicate and evangelize. E-mail and the Internet has become the communication tool of choice for missionaries and other Christians. Web pages may be used to share the gospel and information about the work of God. At the middle school level, skills are introduced that will help students to be productive in their school work, at home, and at church. Additionally, concepts of time management and discernment are introduced to help students use their computer time productively and not wastefully.

COURSE GOALS SEVENTH GRADE

- To gain literacy about computer history, theory, hardware and software
- To gain proficiency in manipulating a current, widely-used operating system.
- To give specific computer skills which enhance understanding and application of computer technology.
- To increase effectiveness of written communication and save time by using a word processing program.
- To improve the appearance of a page using desktop publishing.
- To utilize spreadsheet and software and apply it to real-world situations.
- To comprehend importance of database software and utilize such software.
- To create multimedia presentations.
- To conduct research on the Internet, quickly navigating search engines to find desirable websites and gain a strategy for determining the reliability of information found.

COURSE GOALS EIGHTH GRADE

- To give specific computer skills which enhance understanding and application of computer technology.
- To gain proficiency in manipulating a current, widely-used operating system.
- To gain literacy about computer software to create, incorporate and modify multimedia components.
- To create multimedia presentations through the integration of audio, digital images, video, and html.
- To conduct research on the Internet, quickly navigating search engines to find desirable websites and gain a strategy for determining the reliability of information found.

BIBLICAL GOALS

- Students will gain skills needed to be productive in a world in which computer technology is gaining prominence and importance.
- Students will gain the skills needed to keep the church a relevant and vibrant influence in the world through communications and technology.
- Students will learn how computer technology can assist in academics, bible study and communication among Christian ministries and evangelism.
- Students will understand the computer as a tool, not allowing it to become an idol.
- Students will learn how God can be a part of technology and assist a believer in his or her daily endeavors.
- Students will gain skills needed to be a light in their environment, to assist and serve others while working with technology.
- A journey of bringing students into a deeper knowledge of Christ.

INSTRUCTIONAL OBJECTIVES

NCA Knowledge and Skills

- The learner will be able to apply internet research skills to find

accurate and valid data on the internet as well as properly cite the sources referenced.

- The learner will be able to use emails as a means of communication with fellow students and instructors.
- The learner will be able to keep an organized binder physically as well as electronically.
- The learner will be able to use a word processing program to produce needed documents for school papers and projects.
- The learner will be able to use a spreadsheet program to calculate simple formulas and functions as well as create charts to represent numerical data.
- The learner will be able to use a database program to create tables and forms to store data as well as query and reports to retrieve that data.
- The learner will be able to use presentation management software to express the details of topics in a creative and organized manner.

Texas Essential Knowledge and Skills (TEKS)

Foundations. The student demonstrates knowledge and appropriate use of hardware components, software programs, and their connections.

- Demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components.
- Compare, contrast and appropriately use the various input, processing, output, and primary/secondary storage devices.
- Demonstrate the ability to select and use software for a defined task according to quality, appropriateness, effectiveness and efficiency.
- Use technology terminology appropriate to the task.
- Perform basic software application functions including, but not limited to, opening and application program and creating, modifying, printing, and saving documents.
- Use terminology related to the Internet appropriately including, but not limited to, electronic mail (e-mail), Uniform Resource Locators (URLs), electronic bookmarks, local area networks (LANs), wide area networks (WANs), World Wide Webb (WWW) page, and HyperText Markup Language (HTML).
- Compare and contrast LANs, WANs, Internet, and intranet.

Foundations. The student uses data input skills appropriate to the task.

- Demonstrate keyboarding proficiency in technique and posture while building speed.
- Use digital keyboarding standards for data input such as one space after punctuation, the use of em/en dashes, and smart quotation marks.

Foundations. The student complies with the laws and examines the issues regarding the use of technology in society.

- Discuss copyright laws/issues and model ethical acquisition and use of digital information, citing sources using established methods.
- Demonstrate proper etiquette and knowledge of acceptable use while in an individual classroom, lab, or on the Internet and intranet.
- Describe the consequences regarding copyright violations including, but not limited to, computer hacking, computer piracy, intentional virus setting, and invasion of privacy.
- Identify the impact of technology applications on society through research, interviews, and personal observation.
- Demonstrate knowledge of the relevancy of technology to future careers, life-long learning, and daily living for individuals of all ages.

Information acquisition. The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision.

- Use strategies to locate and acquire desired information on LANs and WANs, including the Internet, intranet, and collaborative software.
- Apply appropriate electronic searches strategies in the acquisition of information including keyword and Boolean search strategies.

Information acquisition. The student acquires electronic information in a variety of formats, with appropriate supervision.

- Use on-line help and other documentation

Information acquisition. The student evaluates the acquired electronic information.

- Determine and employ methods to evaluate the electronic information for accuracy and validity.
- Resolve information conflicts and validate information through accessing, researching, and comparing data.
- Demonstrate the ability to identify the source, location, media type, relevancy, and content validity of available information.

Solving Problems. The student uses appropriate computer-based productivity tools to create and modify solutions to problems.

- Plan, create, and edit documents created with a word processor using readable fonts, alignment, page setup, tabs, and ruler settings.
- Create and edit spreadsheet documents using all data types, formulas and functions, and chart information.
- Plan, create and edit databases by defining fields, entering data, and designing layouts appropriate for reporting.
- Demonstrate proficiency in the use of multimedia authoring programs by creating linear or non-linear projects incorporating text, audio, video, and graphics.
- Create a document using desktop publishing techniques including, but not limited to, the creation of multi-column or multi-section documents with a variety of test-wrapped frame formats.
- Integrate two or more productivity tools into a document including, but not limited to, tables, charts and graphs, graphics from paint and draw programs, and mail merge.

- Use technical writing strategies to create products such as a technical instruction guide.
- Use foundation and enrichment curricula in the creation of products.

Solving Problems. The student uses technology applications to facilitate evaluation of work, both process and product.

- Resolve information conflicts and validate information through research and comparison of data.

Communication. The student formats digital information for appropriate and effective communication.

- Use productivity tools to create effective document files for defined audiences such as slide shows, posters, multimedia presentations, newsletters, brochures, or reports.
- Demonstrate the use of a variety of layouts in a database to communicate information appropriately including horizontal and vertical layouts.
- Create a variety of spreadsheet layouts containing descriptive labels and page settings.
- Demonstrate appropriate use of fonts, styles, and sizes, as well as effective use of graphics and page design to effectively communicate.
- Match the chart style to the data when creating and labeling charts.

Communication. The student delivers the product electronically in a variety of media, with appropriate supervision.

- Publish information in a variety of ways including, but not limited to, printed copy, monitor display, Internet documents, and video.

Communication. The student uses technology applications to facilitate evaluation of communication, both process and product.

- Evaluate the product for relevance to the assignment or task.

COURSE OUTLINE SCOPE AND SEQUENCE

The scope and sequence for this course is included separately.

METHODOLOGY

- Generally a tutorial approach using programmed instructional materials which include regular practical exercises.
- Basic lecture format, using projector and PC
- Special projects which call upon applications being learned.
- Regular tests which include practical evaluations.

EVALUATION

- Grading of projects, exercises, and case studies.
- Teacher observations of student productivity and participation.
- Organization of materials via physical and electronic binders.
- Tests and Projects.

RESOURCES

- Textbook : *Learning Microsoft Office 2002*, Pearson Education, Inc. Upper Saddle River, NJ, 2004.
- Textbook : Selected exercises from *Microsoft Office Professional*, Lawrenceville Press, Inc. Pennington, NJ, 1997.
- *Microsoft Office Professional*, including Word, Excel, Access, and Powerpoint (XP version)
- *Microsoft Publisher* (2000 version)
- Outlook Web Access
- Internet tutorials
- Teacher-created materials

ART

FIFTH GRADE

COURSE DESCRIPTION

At the elementary level, Art is designed to be an opportunity for students to experience a wide variety of media through a hands-on approach. The emphasis is on the appreciation of art as an avenue of expression as well as being a justifiable discipline and means of contribution to society.

COURSE GOALS

- To provide hands-on experiences which allow student(s) to manipulate a variety of media toward various outcomes (projects).
- To observe and identify various art media, techniques and "stories" in artworks.
- For the student(s) to understand and/or depict biblical concepts or stories through concrete experiences and/or visual representations.

BIBLICAL INTEGRATION AND GOALS

Students are given a scriptural "picture" that relates to each lesson through a verse or section of the scriptures as it pertains to the subject and or process being taught.

- To guide student(s) to the realization that creation is God's handiwork and that He is the original Creator.
- To utilize individual lessons and prayer in helping student(s) to recognize the hand of God:

  In the beauty of the world around them.

  In the talents He has gifted others with (including artists the student(s) will study).

  In His ability to "establish the work of their hands" and reveal Himself through their individual creativity.
- To teach the students that:

  The work of their hands can bring glory and honor to God.

  The work of their hands can be the outward expression of their inner thoughts, feelings and beliefs.

  The work of their hands can be a tool for communicating thoughts, philosophies, etc. They can communicate

positive, encouraging things or negative and malevolent things.

Their artwork is an opportunity to share the gospel and communicate a Christian worldview.

Their thoughts/thought life impact and provide the basis for their artworks. This is why we keep Philippians 4:8 as the foundation for our inspiration.

INSTRUCTIONAL OBJECTIVES

- Be able to identify and explain, in appropriate vocabulary, elements (color, texture, form, line, shape, space and value) and principles of art (pattern, emphasis, rhythm, balance, proportion and unity).
- Be able to visually represent various plant, reptile and animal life as observed in their own experiences, in other artworks and their imaginations.
- Be able to combine knowledge from personal observation, experience and imagination to visually represent significant people and events that are part of their life/cultural experiences and community.
- Be able to utilize knowledge from observation and research to visually represent art objects and styles from other cultures and traditions.
- Be able to talk about and analyze some aspects of others' artworks.
- Be able to create original artworks with imaginative, as well as realistic qualities, based on observations made of other artists' works as well as own experiences.
- Be able to name and mix a wide variety of colors.
- Be able to express an understanding of various aspects of color theory.
- Be able to utilize color to communicate ideas regarding emotion and mood.
- Be able to identify and create color, texture, form, line, shape, space and value as well as pattern, emphasis, rhythm, balance, proportion and unity within a composition.
- Be able to identify the basic shapes within objects in order to draw them (animals, insects, people, etc.).
- Be able to identify and construct basic forms (sphere, cube, cylinder) and "merge" those forms to create objects.
- Be able to utilize movement (kinesthetic properties) within artworks.
- With improving accuracy, students will be able to cut, glue, knot, staple and fold.
- Experience a variety of art media.

COURSE OUTLINE WITH SCOPE AND SEQUENCE

First 9 Weeks – Drawing and Painting

- Study a master artist or style of art, examining drawing and/or painting techniques which will relate to some of project work.
- Identify line and demonstrate the ability to draw various kinds of line.
- Using line and shape, demonstrate the ability to break up space within a compositional area to create pattern, emphasis, rhythm and unity in a finished piece of art.
- Create an artwork that combines real and imaginary visual images and that uses aspects of color theory to illustrate principles of emphasis, balance and unity incorporat ing elements of line, shape, value and space.
- Recognize, identify and utilize a full range of color blends and values within artworks.
- Build understanding of color, value and texture as it relates to use of media.
- Continue to combine and organize shapes within objects and as they relate to negative areas (spaces between objects) to draw more complex subjects (insects, animals, homes, neighborhoods, etc.) that are part of their surroundings/life experiences.
- Combine line, shape and color to draw full "compositions" or pictures that contain a variety of related objects into an integrated picture that expresses the student(s) understanding of a subject, place and/or idea as well as proportion, balance and unity.
- Utilize elements of art such as color, value and space along with principles of design such as emphasis, balance, proportion and unity to create visual interest, harmony and/or focus within a composition.

Second 9 Weeks – Drawing, Painting, Mixed Media

- Identify and incorporate shapes and symbols that refer to seasons, holidays, traditions and historical/cultural elements into artworks.
- Recognize and demonstrate the ability to separate areas of composition into ground frames in a composition.
- Demonstrate the ability to create pattern and utilize imagery from other cultures or traditions in an art piece.
- Continue the study of color theory by experimentation in mixing color, creating tertiary colors, neutral colors and tints and shades of color.
- Improve motor skills through projects that require cutting, gluing, stitching or weaving and folding.
- Continue to build skills in understanding and combining basic shapes to draw more complex subjects (animals, people, etc.) that are part of their understanding and image of self, their surroundings/life experiences.
- Continue to combine line, shape and color to create full "compositions" or pictures that contain a variety of related objects into an integrated picture that expresses the student(s) understanding of a subject, place, self and/or idea.
- Continue to utilize principles of design such as emphasis, rhythm, unity, balance and proportion to create visual interest, contrast, harmony and/or focus within a composition.
- Create artworks with moving parts (banners, "kites", etc.) or artworks with decorative elements.

Third 9 Weeks – Drawing, Painting, Mixed Media

- Continue to explore various principles of art through projects which reflect some major historic art period or movement (such as the Renaissance, Greek or Egyptian Antiquity, etc.).
- Observe famous artworks/periods of art or movements in art, identify elements and principles of design then, create a composition using those elements and principles.
- Use collage techniques to create artworks.
- Use relief sculpture techniques in mixed media projects.
- Understand the process of printmaking by creating a picture that can be printed or repeated in a final artwork or series.
- Continue to build a knowledge of color use and color theory as it relates to the visual communication of ideas, emotions, art principles, culture and history.
- Continue to combine basic shapes to draw more complex subjects (insects, birds, plant life, etc.) that are part of their surroundings/like experiences or that convey understanding along with imagination (or imaginative imagery).
- Continue to combine line, shape, color, value, texture and space as well as emphasis, pattern, rhythm, balance, proportion and unity to create full "compositions" or artworks that contain a variety of related objects into an integrated composition that expresses the student(s) understanding of a subject, place and/or idea.

Fourth 9 Weeks – Drawing, Painting, Mixed Media, Constructions

- Continue to explore line, shape, color, value, form, space and texture in drawing, painting and constructions
- Continue to explore the creation of 3-dimensional objects using simple form in paper and clay as well as adding building techniques.
- Draw and cut out identifiable shapes to assemble as a 3 dimensional artwork.
- Observe famous artworks/periods of art or movements in art, identify elements and principles of design then, create a composition using those elements and principles.
- Continue to identify the difference between colors called "warm" and "cool" and how color is used to create emphasis, value, rhythm and unity.
- Continue to combine basic shapes to draw more complex subjects (insects, birds, plant life, etc.) that are part of their surroundings/like experiences or that convey understanding along with imagination (or imaginative imagery.
- Continue to combine line, shape and color as well as emphasis and rhythm and unity to create full "compositions" or pictures that contain a variety of related objects into an integrated picture that expresses the student(s) understanding of a subject, place and/or idea.
- Utilize line, shape, color, pattern and texture as elements for use in design as well as the principles of emphasis and rhythm on an art object.

METHODOLOGY

- Lecture
- Demonstration
- Examples
- Power Point Presentations
- Illustrated Books (for content and/or technique)
- Hands-on activities
- Internet Research and activities

EVALUATION

- Discussion along with Q & A
- Critical discussions about art techniques and artists' works
- Encouragement and verbal assistance to students as they work on projects

SIXTH GRADE ART

COURSE DESCRIPTION

At the middle school level, Art is designed to be an opportunity for students to experience a wide variety of media and demonstrate an understanding of various art techniques and skills as well as develop an appreciation for and a broadening knowledge of various cultures, traditions and artistic periods and styles. The emphasis is on both the creative application and the appreciation of art as an avenue of expression as well as being a justifiable discipline and means of contribution to society.

COURSE GOALS

- To provide hands-on experiences which allow student(s) to manipulate a variety of media toward various outcomes (projects).
- To observe and identify various art media, techniques and "stories" in artworks.
- To observe and communicate understanding of and to express perceptions about master works of art.
- For the student(s) to understand and/or depict biblical concepts or stories through concrete experiences and/or visual representations.

BIBLICAL INTEGRATION AND GOALS

Students are given a scriptural "picture" that relates to each lesson through a verse or section of the scriptures as it pertains to the subject and or process being taught.

- To guide student(s) to the realization that creation is God's handiwork and that He is the original Creator.
- To utilize individual lessons and prayer in helping student(s) to recognize the hand of God:
  - In the beauty of the world around them.
  - In the talents He has gifted others with (including artists the student(s) will study).
  - In His ability to "establish the work of their hands" and reveal Himself through their individual creativity.

- To teach the students that:

  The work of their hands can bring glory and honor to God.

  The work of their hands can be the outward expression of their inner thoughts, feelings and beliefs.

  The work of their hands can be a tool for communicating thoughts, philosophies, etc. They can communicate positive, encouraging things or negative and malevolent things.

  Their artwork is an opportunity to share the gospel and communicate a Christian worldview.

  Their thoughts/thought life impact and provide the basis for their artworks. This is why we keep Philippians 4:8 as the foundation for our inspiration.

INSTRUCTIONAL OBJECTIVES

- Be able to identify and explain, in appropriate vocabulary, elements (color, texture, form, line, shape, space and value) and principles of art (pattern, emphasis, rhythm, balance, proportion and unity).
- Be able to understand and begin to visually demonstrate perspective (1 point) as it impacts objects in the environment.
- Be able to understand and visually demonstrate proportion and lighting as it impacts objects in the environment.
- Be able to illustrate a subject within its environment utilizing foreground, middle ground and background.
- Be able to visually represent various plant, reptile and animal life as observed in their own experiences, in other artworks and their imaginations.
- Be able to combine knowledge from personal observation, experience and imagination to visually represent significant people and events that are part of their life/cultural experiences and community.
- Be able to utilize knowledge from observation and research to visually represent art objects and styles from other cultures and traditions.
- Have built upon their knowledge of master artworks and be able to analyze and critically discuss some aspects of others' artworks.
- Be able to create original artworks with imaginative, as well as realistic qualities, based on observations made of other artists' works as well as own experiences.
- Be able to express an understanding of how all kinds of colors are created.
- Be able to express an understanding of various aspects of color theory.
- Be able to utilize color to communicate ideas regarding emotion and mood as well as how colors (and values) may appear naturally.
- Be able to create and utilize color, texture, form, line, shape, space and value as well as pattern, emphasis, rhythm, balance, proportion and unity within a composition.
- Be able to identify the basic shapes within more complex objects and schemes in order to draw them (animals, insects, people, etc.).
- Be able to identify and construct basic forms (sphere, cube, cylinder) and "merge" those forms to create objects.
- Be able to utilize movement (kinesthetic properties) within artworks.
- With improving accuracy, students will be able to cut, glue, knot, staple and fold, etc.
- Experience a variety of art media.

COURSE OUTLINE WITH SCOPE AND SEQUENCE

First 9 Weeks – Drawing and Painting

- Study 2 or 3 master artists, cultural representations and/or styles (or periods) of art, examining drawing and/or painting techniques which will relate to some of project work.
- Identify line, shape and demonstrate the ability to draw and utilize both within a composition.
- Using line and shape, demonstrate the ability to break up space within a compositional area to create pattern, emphasis, rhythm and/or unity in a finished piece of art.
- Create an artwork that combines real and imaginary visual images and that uses aspects of color theory to illustrate principles of emphasis, balance and unity incorporating elements of line, shape, value and space.
- Recognize, identify and utilize a full range of color blends and values within artworks.
- Build understanding of color, value and texture as it relates to use of media.
- Continue to combine and organize shapes within objects and as they relate to negative areas (spaces between objects) to draw more complex subjects (insects, animals, homes, neighbo hoods, etc.) that are part of their surroundings/life experiences.
- Combine line, shape and color to draw full "compositions" or pictures that contain a variety of related objects into an integrated picture that expresses the student(s) understanding of a subject, place and/or idea, as well as proportion, balance and unity.
- Utilize elements of art such as color, value and space along with principles of design such as emphasis, balance, proportion and unity to create visual interest, harmony and/or focus within a composition.

Second 9 Weeks – Drawing, Painting, Mixed Media

- Identify and incorporate shapes and symbols from master artists, cultural representations and/or styles (or periods) of art that refer to seasons, holidays, traditions and historical/cultural elements into original student artworks.
- Recognize and demonstrate the ability to separate areas of composition into ground frames in a composition.
- Recognize and demonstrate the ability to use value to create the impression of lighting and form as well as proportion in a composition.
- Demonstrate the ability to create pattern and utilize imagery from other cultures or traditions in an art piece.

- Continue the study of color theory by experimentation in mixing color, creating tertiary colors, neutral colors and tints and shades of color.
- Improve motor skills through projects that require cutting, gluing, stitching or weaving and folding.
- Continue to build skills in understanding and combining basic shapes to draw more complex subjects (animals, people, etc.) that are part of their understanding and image of self, their surroundings/life experiences.
- Continue to combine line, shape and color as well as perspective and an understanding of ground frames to create full "compositions". These compositions should expresses the student(s) understanding of a such things as subject, place, self and/or ideas.
- Continue to utilize principles of design such as emphasis, rhythm, unity, balance and proportion to create visual interest, contrast, harmony and/or focus within a composition.
- Create artworks with moving parts (banners, "kites", etc.) or artworks with decorative elements.

Third 9 Weeks – Drawing, Painting, Mixed Media

- Continue to explore various principles of art through projects which reflect some major historic art period or movement (such as the Renaissance, Greek or Egyptian Antiquity, etc.).
- Observe famous artworks/periods of art or movements in art, identify elements and principles of design then, create a composition using those elements and principles.
- Use collage techniques to create artworks.
- Use relief sculpture techniques in mixed media projects.
- Understand the process of printmaking by creating a picture that can be printed or repeated in a final artwork or series.
- Continue to build a knowledge of color use and color theory as it relates to the visual communication of the natural environment, ideas, emotions, art principles, culture and history.
- Continue to combine basic shapes to draw more complex subjects (insects, birds, plant life, etc.) that are part of their surroundings/like experiences or that convey understanding along with imagination (or imaginative imagery).
- Continue to combine line, shape, color, value, texture and space as well as perspective and the principles of emphasis, pattern, rhythm, balance, proportion and unity to create full "compositions". These compositions should expresses the student(s) understanding of a subject, place, self and/or idea.

Fourth 9 Weeks – Drawing, Painting, Mixed Media, Constructions

- Continue to explore line, shape, color, value, form, space and texture in drawing, painting as well as constructions and mixed media.
- Continue to explore the creation of 3-dimensional objects using simple form in paper, paper mache' and clay as well as adding building techniques.
- Draw and cut out identifiable shapes to assemble as a 3 dimensional artwork.
- Observe famous artworks/periods of art or movements in art, identify elements and principles of design then, create a composition using those elements and principles.
- Continue to identify the difference between colors called "warm" and "cool" and how color is used to create emphasis, value, rhythm and unity.
- Continue to combine basic shapes to draw more complex subjects (insects, birds, plant life, etc.) that are part of their surroundings/like experiences, self or that convey understanding along with imagination (or imaginative imagery.
- Continue to combine various elements and principles of art to create full "compositions" or pictures that contain a variety of related objects into an integrated picture that expresses the student(s) understanding of a subject, place, self and/or ideas.
- Utilize line, shape, color, pattern and texture as elements for use in design as well as the principles of emphasis and rhythm on an art object such as paper mache' or clay.

METHODOLOGY

- Lecture
- Demonstration
- Examples
- Power Point Presentations
- Illustrated Books (for content and/or technique)
- Hands-on activities
- Internet Research and activities
- Rubrics with expectations/outline project goals

EVALUATION

- Discussion along with Q & A
- Critical discussions about art techniques and artists' works as well as works of peers
- Encouragement and verbal assistance to students as they work on projects
- Written evaluations (grade and comments) of work based on rubric(s) provided to the student

SEVENTH & EIGHTH GRADE ART

COURSE DESCRIPTION

At the middle school level, Art is designed to be an opportunity for students to experience a wide variety of media and demonstrate an understanding of various art techniques and skills as well as develop an appreciation for and a broadening knowledge of various cultures, traditions and artistic periods and styles. The emphasis is on both the creative application and the appreciation of art as an avenue of expression as well as being a justifiable discipline and means of contribution to society.

COURSE GOALS

- To provide hands-on experiences which allow student(s) to manipulate a variety of media toward various outcomes (projects).

- To observe and identify various art media, techniques and "stories" in artworks.
- To observe and communicate understanding of and to express perceptions about master works of art.
- To recognize art as a tool for communication and to understand that art provides a wide variety of career opportunities.
- For the student(s) to understand and/or depict biblical concepts or stories through concrete experiences and/or visual representations.

BIBLICAL INTEGRATION AND GOALS

Students are given a scriptural "picture" that relates to each lesson through a verse or section of the scriptures as it pertains to the subject and or process being taught.

- To guide student(s) to the realization that creation is God's handiwork and that He is the original Creator.
- To utilize individual lessons and prayer in helping student(s) to recognize the hand of God:

  In the beauty of the world around them.

  In the talents He has gifted others with (including artists the student(s) will study).

  In His ability to "establish the work of their hands" and reveal Himself through their individual creativity.
- To teach the students that:

  The work of their hands can bring glory and honor to God.

  The work of their hands can be the outward expression of their inner thoughts, feelings and beliefs.

  The work of their hands can be a tool for communicating thoughts, philosophies, etc. They can communicate positive, encouraging things or negative and malevolent things.

  Their artwork is an opportunity to share the gospel and communicate a Christian worldview.

  Their thoughts/thought life impact and provide the basis for their artworks. This is why we keep Philippians 4:8 as the foundation for our inspiration.

INSTRUCTIONAL OBJECTIVES

At the end of the school year, the student(s) will:

- Be able to identify and explain, in appropriate vocabulary, elements (color, texture, form, line, shape, space and value) and principles of art (pattern, emphasis, rhythm, balance, proportion and unity).
- Be able to understand and begin to visually demonstrate perspective (1 & 2 point) as it impacts objects in the environment.
- Be able to understand and visually demonstrate proportion and lighting as it impacts objects in the environment.
- Be able to illustrate a subject within its environment utilizing foreground, middle ground and background.
- Be able to visually represent various plant, reptile and animal life as observed in their own experiences, in other artworks and their imaginations.
- Begin to be able to analyze the qualities of various media and make informed choices about the appropriateness of media to communicate their own ideas visually.
- Be able to recognize and analyze ways that art is influenced by international, historical and political issues or trends.
- Be able to combine knowledge from personal observation, experience and imagination to visually represent significant people and events that are part of their life/cultural experiences and community.
- Be able to utilize knowledge from observation and research to visually represent art objects and styles from other cultures and traditions.
- Have built upon their knowledge of master artworks and be able to analyze and critically discuss some aspects of others' artworks.
- Be able to create original artworks with imaginative, as well as realistic qualities, based on observations made of other artists' works as well as own experiences.
- Be able to express an understanding of how all kinds of colors are created.
- Be able to express an understanding of various aspects of color theory.
- Be able to utilize color to communicate ideas regarding emotion and mood as well as how colors (and values) may appear naturally.
- Be able to create and utilize color, texture, form, line, shape, space and value as well as pattern, emphasis, rhythm, balance, proportion and unity within a composition.
- Be able to identify the basic shapes within more complex objects and schemes in order to draw them (animals, insects, people, etc.).
- Be able to identify and construct basic forms (sphere, cube, cylinder) and to analyze form in order to construct more complex objects
- Be able to utilize movement (kinesthetic properties) within artworks.
- With improving accuracy, students will be able to cut, glue, knot, staple and fold, etc.
- Experience a variety of art media.

COURSE OUTLINE WITH SCOPE AND SEQUENCE

First 9 Weeks – Drawing and Painting

- Study 2 or 3 master artists, cultural representations and/or styles (or periods) of art, examining drawing and/or painting techniques which will relate to some of project work.
- Identify line, shape and demonstrate the ability to draw and utilize both within a composition.
- Using line and shape, demonstrate the ability to break up space within a compositional area to create pattern, emphasis, rhythm and/or unity in a finished piece of art.
- Create an artwork that combines real and imaginary visual images and that uses aspects of color theory to illustrate principles of emphasis, balance and unity incorporating elements of line, shape, value and space.
- Recognize, identify and utilize a full range of color blends and values within artworks.

- Build understanding of color, value and texture as it relates to use of media
- Continue to combine and organize shapes within objects and as they relate to negative areas (spaces between objects) to draw more complex subjects (insects, animals, homes, neighborhoods, etc.) that are part of their surroundings/life experiences.
- Combine line, shape and color to draw full "compositions" or pictures that contain a variety of related objects into an integrated picture that expresses the student(s) understanding of a subject, place and/or idea, as well as proportion, balance and unity.
- Utilize elements of art such as color, value and space along with principles of design such as emphasis, balance, proportion and unity to create visual interest, harmony and/or focus within a composition.

Second 9 Weeks – Drawing, Painting, Mixed Media

- Identify and incorporate shapes and symbols from master artists, cultural representations and/or styles (or periods) of art that refer to seasons, holidays, traditions and historical/cultural elements into original student artworks.
- Recognize and demonstrate the ability to separate areas of composition into ground frames in a composition.
- Recognize and demonstrate the ability to use value to create the impression of lighting and form as well as proportion in a composition.
- Demonstrate the ability to create pattern and utilize imagery from other cultures or traditions in an art piece.
- Continue the study of color theory by experimentation in mixing color, creating tertiary colors, neutral colors and tints and shades of color.
- Improve motor skills through projects that require cutting, gluing, stitching or weaving and folding.
- Continue to build skills in understanding and combining basic shapes to draw more complex subjects (animals, people, etc.) that are part of their understanding and image of self, their surroundings/life experiences.
- Continue to combine line, shape and color as well as perspective and an understanding of ground frames to create full "compositions". These compositions should expresses the student(s) understanding of a such things as subject, place, self and/or ideas.
- Continue to utilize principles of design such as emphasis, rhythm, unity, balance and proportion to create visual interest, contrast, harmony and/or focus within a composition.
- Create artworks with moving parts (banners, "kites", etc.) or artworks with decorative elements.

Third 9 Weeks – Drawing, Painting, Mixed Media

- Explore some of periods (or styles) of art which reflect the influence of political, historical, media-driven or international issues.
- Observe famous artworks/periods of art or movements in art, identify elements and principles of design then, create a composition using those elements and principles.
- Use collage techniques to create artworks.
- Use relief sculpture techniques in mixed media projects.
- Understand the process of printmaking by creating a picture that can be printed or repeated in a final artwork or series.
- Continue to build a knowledge of color use and color theory as it relates to the visual communication of the natural environment, ideas, emotions, art principles, culture and history.
- Continue to combine basic shapes to draw more complex subjects (insects, birds, plant life, etc.) that are part of their surroundings/like experiences or that convey understanding along with imagination (or imaginative imagery).
- Continue to combine line, shape, color, value, texture and space as well as perspective and the principles of emphasis, pattern, rhythm, balance, proportion and unity to create full "compositions". These compositions should expresses the student(s) understanding of a subject, place, self and/or idea.

Fourth 9 Weeks – Drawing, Painting, Mixed Media, Constructions

- Continue to explore line, shape, color, value, form, space and texture in drawing, painting as well as constructions and mixed media.
- Continue to explore the creation of 3-dimensional objects using simple form in paper, paper mache' and clay as well as adding building techniques.
- Explore art and architecture through projects utilizing a 3-dimensional approach.
- Observe famous artworks/periods of art or movements in art, identify elements and principles of design then, create a composition using those elements and principles.
- Create artworks which demonstrate an understanding of the difference between colors called "warm" and "cool" and how color is used to create emphasis, value, rhythm and unity.
- Continue to combine basic shapes to draw more complex subjects (insects, birds, plant life, etc.) that are part of their surroundings/like experiences, self or that convey understanding along with imagination (or imaginative imagery).
- Continue to combine various elements and principles of art to create full "compositions" or pictures that contain a variety of related objects into an integrated picture that expresses the student(s) understanding of a subject, place, self and/or ideas.
- Utilize line, shape, color, pattern and texture as elements for use in design as well as the principles of emphasis and rhythm on an art object such as paper mache' or clay.

METHODOLOGY

- Lecture
- Demonstration
- Examples
- Power Point Presentations
- Illustrated Books (for content and/or technique)

- Hands-on activities
- Internet Research and activities
- Rubrics with expectations/outline project goals

EVALUATION

- Discussion along with Q & A
- Critical discussions about art techniques and artists' works as well as works of peers
- Encouragement and verbal assistance to students as they work on projects
- Written evaluations (grade and comments) of work based on rubric(s) provided to the student

PHYSICAL EDUCATION
FIFTH GRADE

COURSE DESCRIPTION

The purpose of the Physical Education program at Northeast Christian Academy is to educate students to know that the body is the temple of the Holy Spirit, therefore we should be good stewards. Also, to love and respect one another and ourselves as God loves and respects us, especially during these precious years of maturity.

COURSE GOALS

- Demonstrate competency in motor skills and movement patterns needed to perform a variety of physical activities.
- Demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.
- Participate regularly in physical activity.
- Achieve and maintain a health-enhancing level of physical fitness.
- Exhibit responsible personal and social behavior that respects self and others in physical activity settings.
- Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.

BIBLICAL GOALS

- To serve God by being caretaker of his body.
- God created our body as a temple of the holy spirit. Therefore, through physical education, it is our responsibility as Christians, to care for and develop our body in a way that is pleasing to him.

INSTRUCTIONAL OBJECTIVES

Introduction

- In Physical Education, students acquire the knowledge and skills for movement that provide the foundation for enjoyment, continued social development through physical activity, and access to a physically-active lifestyle. The student exhibits a physically-active lifestyle and understands the relationship between physical activity and health throughout the lifespan.
- Fifth grade students demonstrate competence such as improved accuracy in manipulative skills in dynamic situations. Basic skills such as jumping rope, moving to a beat, and catching and throwing should have been mastered in previous years and can now be used in game-like situations. Students continue to assume responsibility for their own safety and the safety of others. Students can match different types of physical activities to health-related fitness components and explain ways to improve fitness based on the principle of frequency, intensity, and time. Students continue to learn the etiquette of participation and can resolve conflicts during games and sports in acceptable ways.

Knowledge and Skills

Movement. The student demonstrates competency in movement patterns and proficiency in a few specialized movement forms.

- Demonstrate appropriate use of levels in dynamic movement situations such as jumping high for a rebound and bending knees and lowering center of gravity when guarding an opponent.
- Demonstrate smooth combinations of fundamental locomotor skills such as running and dodging and hop-step-jump.
- Demonstrate attention to form, power, accuracy, and follow through in performing movement skills.
- Demonstrate controlled balance on a variety of objects such as balance board, stilts, scooters, and skates.
- Demonstrate simple stunts that exhibit agility such as jumping challenges with proper landings.
- Combine traveling and rolling with smooth transitions.
- Combine weight transfer and balance on mats and equipment.
- Demonstrate the ability to contrast a partner's movement.
- Perform selected folk dances.
- Jump a rope using various rhythms and foot patterns repeatedly.
- Demonstrate competence in manipulative skills in dynamic situations such as overhand throw, catch, shooting, hand dribble, foot dribble, kick, and striking activities such as hitting a softball.
- Demonstrate combinations of locomotor and manipulative skills in complex and/or game-like situations such as pivoting and throwing, twisting and striking, and running and catching.

Movement. The student applies movement concepts and principles to the learning and development of motor skills.

- Identify common phases such as preparation, movement, follow through, or recovery in a variety of movement skills such as tennis serve, handstand, and free throw.
- Identify the importance of various elements of performance for different stages during skill learning such as form, power, accuracy, and consistency.

- Choose appropriate drills/activities to enhance the learning of a specific skill.

Physical activity and health. The student exhibits a health-enhancing, physically-active lifestyle that provides opportunities for enjoyment and challenge.

- Participate in moderate to vigorous physical activities on a daily basis that develop health-related fitness.
- Identify appropriate personal fitness goals in each of the components of health-related fitness.
- Explain the value of participation in community physical activities such as little league and parks and recreation.

Physical activity and health. The student knows the benefits from involvement in daily physical activity and factors that affect physical performance.

- Relate ways that aerobic exercise strengthens and improves the efficiency of the heart and lungs.
- Self-monitor the heart rate during exercise.
- Match different types of physical activity with health-related fitness components.
- Define the principle of frequency, intensity, and time and describe how to incorporate these principles to improve fitness.
- Describe the structure and function of the muscular and skeletal system as they relate to physical performance such as muscles pull on bones to cause movement, muscles work in pairs, and muscles work by contracting and relaxing.
- Identify the relationship between optimal body function and a healthy eating plan such as eating a variety of foods in moderation according to U. S. dietary guidelines.
- Describe common skeletal problems and their effect on the body such as spinal curvatures.
- Describe the changes that occur in the cardiorespiratory system as a result of smoking and how those changes affect the ability to perform physical activity.
- Describe how movement and coordination are effected by alcohol and other drugs.

Physical activity and health. The student understands and applies safety practices associated with physical activities.

- Use equipment safely and properly.
- Select and use proper attire that promotes participation and prevents injury.
- Describe the importance of taking personal responsibility for reducing hazards, avoiding accidents, and preventing injuries during physical activity.
- Identify potentially dangerous exercises and their adverse effects on the body.

Social development. The student understands basic components such as strategies and rules of structured physical activities including, but not limited to, games, sports, dance, and gymnastics.

- Describe fundamental components and strategies used in net wall, invasion, target, and fielding games such as basic positions-goalie, offense, or defense.
- Explain the concept and importance of team work.

Social development. he student develops positive self-management and social skills needed to work independently and with others in physical activity settings.

- Follow rules, procedures, and etiquette.
- Use sportsmanship skills for settling disagreements in socially acceptable ways such as remaining calm, identifying the problem, listening to others, generating solutions, or choosing a solution that is acceptable to all.
- Describe how physical activity with a partner or partners can increase motivation and enhance safety.

COURSE OUTLINE SCOPE AND SEQUENCE

The scope and sequence for this course is included separately.

METHODOLOGY

- Group discussions
- Physical activity participation (various activities and games)
- Field Day

EVALUATION

- Physical activity participation (various activities and games)
- Group discussions

RESOURCES

- Gym
- Playground
- Physical education equipment (see scope and sequence)

PHYSICAL EDUCATION
SIXTH - EIGHTH GRADE

COURSE DESCRIPTION

The purpose of the Physical Education program at Northeast Christian Academy is to educate students to know that the body is the temple of the Holy Spirit, therefore we should be good stewards. Also, to love and respect one another and ourselves as God loves and respects us, especially during these precious years of maturity.

COURSE GOALS

- Demonstrate competency in motor skills and movement patterns needed to perform a variety of physical activities.
- Demonstrate understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.
- Participate regularly in physical activity.

- Achieve and maintain a health-enhancing level of physical fitness.
- Exhibit responsible personal and social behavior that respects self and others in physical activity settings.
- Value physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.

BIBLICAL GOALS

- To serve God by being caretaker of his body.
- God created our body as a temple of the holy spirit. Therefore, through physical education, it is our responsibility as Christians, to care for and develop our body in a way that is pleasing to him.

INSTRUCTIONAL OBJECTIVES

Introduction

- In Physical Education, students acquire the knowledge and skills for movement that provide the foundation for enjoyment, continued social development through physical activity, and access to a physically-active lifestyle. The student exhibits a physically-active lifestyle and understands the relationship between physical activity and health throughout the lifespan.
- In Grades 6-8, students understand in greater detail the function of the body, learn to measure their own performance more accurately, and develop plans for improvement. They learn to use technology such as heart rate monitors to assist in measuring and monitoring their own performance. Identifying the types of activities that provide them with enjoyment and challenge and that will encourage them to be physically active throughout life is reinforced during instruction in these grades.

Knowledge and Skills

Movement. The student demonstrates competency in movement patterns and proficiency in a few specialized movement forms.

- Perform locomotor skills in dynamic fitness, sport, and rhythmic activities.
- Use relationships, levels, speed, direction, and pathways effectively in complex group and individual physical activities such as crouching low for volleyball digs, stretching high during lay-ups, positioning for a soccer pass, or passing ahead of a receiver.
- Perform sequences that combine traveling, rolling, balancing, and weight transfer into smooth, flowing sequences.
- Move in time to complex rhythmical patterns such as 3/4 time or 6/8 time.
- Design and refine a jump rope routine to music.
- Throw a variety of objects demonstrating both accuracy and distance such as frisbee, softball, and basketball.
- Strike a ball to a wall or a partner with a paddle/racquet using forehand and backhand strokes continuously.
- Strike a ball using a golf club or a hockey stick consistently so it travels in an intended direction and height.
- Hand and foot dribble while preventing an opponent from stealing the ball.
- Keep an object in the air without catching it in a small group such as volleyball and football.
- Throw and catch a ball consistently while guarded by an opponent.

Movement. The student applies movement concepts and principles to the learning and development of motor skills.

- Know that appropriate practice in static and dynamic setting, attention, and effort are required when learning movement skills.
- Make appropriate changes in performance based on feedback to improve skills.
- Practice in ways that are appropriate for learning skills such as whole/part/whole, shorter practice distributed over time is better than one long session, or practicing is best in game like conditions.

Physical activity and health. The student exhibits a health enhancing, physically-active lifestyle that provides opportunities for enjoyment and challenge.

- Identify opportunities in the school and community for regular participation in physical activity.
- Participate in moderate to vigorous health-related physical activities on a regular basis.
- Establish and monitor progress toward appropriate personal fitness goals in each of the components of health-related fitness such as personal logs, group projects, and no space/or criterion referenced tests.
- Identify and know how to use technological tools used for measuring and monitoring fitness parameters such as computer programs, heart rate monitors, skin-fold calipers, and impedance testing equipment.

Physical activity and health. The student knows the benefits from involvement in daily physical activity and factors that affect physical performance.

- Describe selected long-term benefits of regular physical activity.
- Classify activities as being aerobic or anaerobic.
- Describe the effects of aerobic exercise on the heart and overall health.
- Analyze effects of exercise on heart rate through the use of manual pulse checking and recovery rates, heart rate monitors, perceived exertion scales, and/or computer generated data.
- Identify each health-related fitness component and describe how participating in cardiovascular endurance, muscular strength and endurance, and flexibility actions impact personal fitness.
- Identify specific foods that contain protein, vitamins, and minerals that are key elements to optimal body function.
- Recognize the effects of substance abuse on personal health and performance in physical activity.
- Analyze ways outside influences affect decisions about care of the body such as alcohol and tobacco advertising and peer pressure.

- Recognize that idealized images of the human body and performance as presented by the media may not be appropriate to imitate.

Physical activity and health. The student understands and applies safety practices associated with physical activities.

- Use equipment safely and properly.
- Select and use proper attire that promotes participation and prevents injury.
- Include warm-up and cool-down procedures regularly during exercise; monitor potentially dangerous environmental conditions such as wind, cold, heat, and insects; and recommend prevention and treatment.
- Identify potentially dangerous exercises and their adverse effects on the body.
- Explain water safety and basic rescue procedures.

Social development. The student understands basic components such as strategies and rules of structured physical activities including, but not limited to, games, sports, dance, and gymnastics.

- Know basic rules for sports played such as setting up to start, restarting, violating rules.
- Keep accurate score during a contest.

Social development. The student develops positive self-management and social skills needed to work independently and with others in physical activity settings.

- Participate in establishing rules, procedures, and etiquette that are safe and effective for specific activity situations.
- Handle conflicts that arise with others without confrontation.
- Identify and follow rules while playing sports and games.
- Accept decisions made by game officials such as student, teachers, and officials outside the school.
- Accept successes and performance limitations of self and others, exhibit appropriate behavior responses, and recognize that improvement is possible with appropriate practice.
- Modify games/activities to improve the game/activity.

COURSE OUTLINE SCOPE AND SEQUENCE

The scope and sequence for this course is included separately.

METHODOLOGY

- Group discussions
- Physical activity participation (various activities and games)
- Field Day

EVALUATION

- Physical activity participation (various activities and games)
- Group discussions

RESOURCES

- Gym
- Playground
- Physical education equipment (see scope and sequence)

LOGIC
SEVENTH GRADE

COURSE DESCRIPTION

7th Grade Logic is a survey of both formal and informal logic. The first semester of the course will expose the student to the mathematical structure of formal logic. Formal logic forms a framework in the mind upon which arguments can be placed and assessed. During the second semester, we will look into informal fallacies. The student will learn to identify fallacies in an argument, assess the strength of the argument and write and present his or her own arguments. A logical mind is the basis for sound argument, a skill that will be further honed throughout the Logic stage and into the Rhetoric stage.

COURSE OBJECTIVES

- Know the history of formal logic, the key players, central ideas, and the transition into informal logic.
- Know and understand the structure of formal arguments.
- Understand the different types of fallacies and how they can be used in arguments.
- Be comfortable presenting their own arguments to an audience and receiving feedback regarding its structure and soundness.

COURSE SKILLS

- Examine an argument and translate it into formal logic.
- Identify fallacies in others' arguments as well as their own.
- Express ideas (in writing and orally) effectively.

COURSE THEMES

Fall Semester

- History of Formal Logic Simple Apprehension/Term
- Judgment/Proposition
- Proposition

Spring Semester

- Fallacies of Relevance
- *Ad Fontem* Arguments Appeals to Emotion
- Red Herrings
- Fallacies of Presupposition Fallacies of Induction
- The Art of Debate

EIGHTH GRADE LOGIC

COURSE DESCRIPTION

8th Grade Logic is designed to further the student's ability to structure a sound argument. Through discussion of argument strategies and fallacies to avoid, as well as two organized debates, the student will incorporate the formal logic previously studied into the presentation of written and oral arguments. This course focuses on developing skills that will be crucial to the student entering the Rhetoric stage of the upper school years.

COURSE OBJECTIVES

- Know the Common Topics of argument.
- Understand the different types of fallacies and how they can be used in arguments.
- Present their own arguments to an audience and receiving feedback regarding its structure and soundness.

COURSE SKILLS

- Identify an argument.
- Compose his or her own argument.
- Be able to identify fallacies in others' arguments as well as their own.

COURSE THEMES

Fall Semester

- Foundations of Argument
- Common Topics - Definitions, Testimony, Comparison
- How to structure a written argument

Spring Semester

- Common Topics - Relationship, Circumstance
- Review of Fallacies
- Debate Technique
- Public Speaking