STEM 6th Grade Course Catalog

Core Classes:

0604 - ENGLISH 6 Pre AP
English 6 Pre-AP is differentiated from the regular program through the selections of literature and in the challenges presented to students in all areas of study. The Junior Great Books Program is the nucleus of this English course. The scope and sequence covers (1) language, grammar & usage, beginning logic; (2) literature and personal meaning; (3) sentence combining, multi-paragraph papers & editing skills; (4) oral presentations & listening skills; (5) study skills, library reports, and research.

0605 - ENGLISH 6 GT/Pre AP (Test Required)
The Middle School English Program for Gifted Students is built around a differentiated curriculum. The theme for grade 6 is "The Discovery of Language". Materials are chosen to offer an appropriate challenge in all areas of language arts.

0621 - MATH 6 – Pre AP
This course emphasizes pre-algebra skills and concepts such as variables, writing and solving equations, and problem solving. The full range of topics needed for the successful study of pre-algebra in seventh grade is covered in this course. To be successful in this course a student must have a firm foundation in the operations of whole numbers, decimals, and fractions.

0620 - MATH 6 - GT/Pre AP (Test Required)
The course assumes a solid foundation in elementary mathematical concepts and skills. It is a transition into abstract mathematics for advanced students. Topics to be introduced include operations involving rational numbers, graphing in the coordinate plane, the concept of variable, and solving basic equations. Non-routine problem solving skills are developed throughout the year by analyzing real-world situations from a mathematical perspective. Students are encouraged to develop original material related to the topics covered.

0633 - SCIENCE 6
This course uses lab and field investigations, scientific investigation and reasoning and the tools of science to develop problem solving and critical thinking skills while learning concepts such as the classification of matter; energy types, forms and resources; the relationship between force and motion; the solar system and space exploration; broad taxonomic classification of organisms and the interdependence between organisms and the environment.

0643 - SOCIAL STUDIES 6
Students study people and places of the contemporary world. Societies selected for study are chosen from the regions of the world. The concepts of limited and unlimited government are introduced, and students describe the nature of citizenship in various societies. Students compare institutions common to all societies.

0651 - PHYSICAL EDUCATION - Semester – 0.5
This course will include instructions and opportunities in motor skills for efficient movement, participation in individual, dual and team sports, development of a high level of personal and physical fitness, and knowledge and skills for leisure and life-time sports activities.

0636 - HEALTH 6 - Semester – 0.5
This is a one-semester course designed to foster personal health and safety. It includes ways to cope with peer pressure and stress, gain knowledge concerning diseases and effects of drug use--their prevention and treatment. The human body, the functions of its systems, and the effects of pollution, nutrition, exercise, and mental health are major parts of the course. Sex education, first aid and rescue techniques, responsibility and decision-making, information about pertinent laws, government regulations, and health agencies are also covered.
0639 - TECHNOLOGY APPLICATIONS - Semester – 0.5
Essential Knowledge and Skills identified by the Texas Education Agency. This curriculum has four strands: foundations, information acquisition, work in solving problems, and communication. The course provides students an opportunity to acquire information in a variety of ways. Students complete projects involving work processing, databases, spreadsheets, multimedia, desktop publishing, graphics, and telecommunications. The Technology Applications curriculum for middle school includes the Texas.

0640 - TECHNOLOGY APPLICATIONS - Semester – 0.5
The Technology Applications Semester 2 course provides an extension of topics in Technology Applications Semester 1. Students will learn to make informed decisions about technologies and their applications.

STEM Full Year Elective

OPTION 1:
0675 – ART 1 – Full Year 1.0
Sixth Grade Art provides a study of the art elements and principles through experiences with a variety of art media and tools in design, drawing, painting, sculpture, ceramics, fiber art, photographic imagery, and electronic media-generated art; identifies and compares artwork across time and culture; and evaluates artwork through discussion and critique.

OPTION 2:
5512 – MUSIC TECHNOLOGY, GRADE 6 - Semester – 0.5
This course is designed to introduce the students to the world of digital audio and MIDI computer recording. By using the tools of digital recording, the students will be able to create their own musical compositions and arrangements on Garage Band to produce their own audio CD archives to use for listening, websites, video, or any other application where music is used. This course will explore the electronic keyboard, MIDI and audio recording, music theory, notation, arranging, transposition, composition, music production, sound tracks, performance and copyrights. Students will also trace the roots of music from Gregorian Chant (Circa 9th Century) to 21st Century Popular Music. Students will also gain an appreciation for all types of music through their explorations of both making, and listening to music.

Combined with
0741 - ROBOTICS I: INTRODUCTION TO ROBOTICS - Semester – 0.5
This is an enrichment course designed to combine a review of science concepts with robotic systems to gain knowledge and skills in the engineering process (similar to the scientific method). These skills include: the ability to conduct scientific (engineering) inquiry; the ability to solve problems, think critically, make decisions related to technology, properly apply technology, and the ability to assess the effects of technology on the world to prepare students for success in the modern world.
Full Year Elective Classes:

0670 - BAND I – Full Year 1.0
This course is designed for those students who exhibit an interest in learning a band instrument. In most cases, students will need to furnish their instruments and be committed to an advanced band after one year of study. Students will be placed appropriately according to instrument selection and/or proficiency level.

0676 - CHOIR I – Full Year 1.0 (Boys or Girls)
Beginning choir builds on the knowledge, skills and understanding developed in elementary school. Students in this course will experience singing in unison and in parts, with an emphasis placed on proper vocal techniques and sight-reading skills.

0673 - ORCHESTRA I – Full Year 1.0
This course is designed for students who exhibit an interest in learning how to play the violin, viola, cello, or string bass. In most cases the student will need to provide his/her own instrument and be committed to achieving an established level of performance commensurate with being placed in an advanced orchestra during his/her second year of performing.

0674 – ORCHESTRA IA – Full Year 1.0
This course is designed for those string performers who have completed one or more years of study. Students will be placed appropriately according to instrument selection and/or playing proficiency.

0341 - THEATRE ARTS I – Full Year 1.0
This is an introductory level course that allows the student to study the various aspects of theatre performance. Emphasis is placed on the development of individual techniques utilized in theatre performance.

5315 - SPANISH II NATIVE PRE-AP – Full Year 1.0 (Test Required)
This course is designed for students who already have an ability to understand and speak Spanish. The emphasis of the instruction will be to expand the students’ existing oral proficiency and to develop the skills of reading and writing Spanish so that they can communicate more successfully in social and business situations. Upon the completion of this course, students will receive credit for Spanish I and II.
7th Grade STEM Course Catalog

**Core Classes:**

**0705 - ENGLISH 7 Pre AP**
This is a rigorous college preparatory course that prepares students for success when they take Advanced Placement and other challenging courses in high school. Added to this specialized curriculum are advanced grammar and logic, such as inference and generalization; literature of various genres, periods, and cultures; multi-paragraph essays for a variety of purposes and audiences; oral presentations and listening skills; study skills; and research involving documentation.

**0706 - ENGLISH 7 GT/Pre AP (Test Required)**
The theme for grade 7 in the differentiated curriculum is “Discovery of Community.” The research process is emphasized, and materials are chosen to offer an appropriate challenge in all areas of language arts.

**0721 - MATH 7 Pre AP**
This course content interweaves the strands of mathematics with emphasis on non-routine problem solving, real-life applications, rational numbers, and graphing in the coordinate plane. The full range of topics needed for the successful study of algebra in eighth grade is covered in this course. To be successful in this course, a student must have a strong foundation in the concepts of whole numbers, decimals, fractions, and percents.

**0724 - MATH 7 GT/Pre AP (Test Required)**
The course assumes a solid foundation in elementary mathematical concepts and skills. It is a transition into abstract mathematics for advanced students who will be taking Algebra I in the eighth grade. Topics to be introduced include operations involving rational numbers, graphing in the coordinate plane, the concept of variable, and solving basic equations. Non-routine problem solving skills are developed throughout the year by analyzing real-world situations from a mathematical perspective. Students are encouraged to develop original material related to the topics covered.

**0733 - SCIENCE 7**
This course uses lab and field investigations, scientific investigation and reasoning and the tools of science to develop problem solving and critical thinking skills while learning concepts such as photosynthesis and the flow of energy through living systems; organic compounds and large molecules in living system; force, motion and energy in living systems; catastrophic events in weather that affect environments; the relationship between living things and their environment and characteristics of Earth and relationships to objects in our solar system that allow life to exist.

**0743 - TEXAS HISTORY**
Students study Texas from early times to the present. Students examine the full scope of Texas history, including the cultures of Native Americans living in Texas prior to European exploration and the eras of mission-building, colonization, revolution, republic, and statehood. Students use primary and secondary sources to examine the rich and diverse cultural background of Texas. Students analyze the impact of scientific discoveries and technological innovations.

**0751 - PHYSICAL EDUCATION – Full Year 1.0**
This course will include instructions and opportunities in motor skills for efficient movement, participation in individual, dual and team sports, development of a high level of personal and physical fitness, and knowledge and skills for leisure and life-time sports activities.

**OR**

**0757 - ATHLETICS 7 – Full Year 1.0**
This course will include instruction for boys in the sport of football, basketball, and track. Instruction for girls will be in volleyball, basketball, and track. Basic motor skills will be taught, as well as higher forms of physical skills that are required of athletes. A high degree of physical and cardiovascular fitness will be emphasized.
3017 – PRINCIPLES OF INFORMATION TECHNOLOGY – Full Year 1.0
Students develop computer literacy skills to adapt to emerging technologies used in the global marketplace. Students implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. Students enhance reading, writing, computing, communication and reasoning skills and apply them to the information technology environment.

STEM Full Year Elective Classes:

0675 – ART 1 – Full Year 1.0
Art 1 provides a study of the art elements and principles through experiences with a variety of art media and tools in design, drawing, painting, sculpture, ceramics, fiber art, photographic imagery, and electronic media-generated art; identifies and compares artwork across time and culture; and evaluates artwork through discussion and critique.

0295 – ART 2 – Full Year 1.0
Art 2 compares and contrasts the art elements and principles through experiences with a variety of art media and tools in design, drawing, painting, printmaking, sculpture, ceramics, fiber art, photographic imagery, and electronic media-generated art; analyzes historical and cultural influences on artwork; and evaluates through discussion and critique.

3046 – Planet Earth – Full Year 1.0 (High School Credit)
To provide a comprehensive understanding of our complex environment and offer efficient and effective engineering solutions to environmental problems. Students will receive a broad education and carry out research addressing some of the grand science and engineering challenges of our time. How has the Earth climate varied in the past and how will it change in the future? How does pollution affect air quality locally and far from its sources, and how does it affect cloud cover and climate change? How can we utilize different energy sources to alleviate our reliance on fossil fuels? And much more…

3020 – PRINCIPLES OF ART, A/V & COMMUNICATION – Full Year 1.0 (High School Credit)
This course offers students the opportunity to expand their knowledge and usage of technology. Students will develop video editing, filming, project planning, and design skills. Some projects include the STEM Recruitment video, 7 Habits videos, STEM Core Values videos, and personal student projects.

0736 – ROBOTICS I – Full Year 1.0
These skills include: the ability to conduct scientific (engineering) inquiry; the ability to solve problems, think critically, make decisions related to technology, properly apply technology, and the ability to assess the effects of technology on the world to prepare students for success in the modern world.

Full Year Elective Classes:

0771 - BAND I – Full Year 1.0
This course is designed for those students who exhibit an interest in learning a band instrument. In most cases, students will need to furnish their instruments and be committed to an advanced band after one year of study. Students will be placed appropriately according to instrument selection and/or proficiency level.

0772 - BAND II – Full Year 1.0
This course is designed for students who have completed one or two years of study on their band instrument but who have not yet achieved a level of excellence commensurate with being named to an advanced band. The students will continue to strive to achieve this level in hopes of being placed in an advanced band after the second year of study.

0762 - CHOIR II – Full Year 1.0
The intermediate of choir is offered to those students who have not yet attained a performance proficiency commensurate with being in an advanced choir. Students will continue to focus on proper vocal techniques and sight-reading.
0790 - ORCHESTRA I – Full Year 1.0
This course is designed for students who exhibit an interest in learning how to play the violin, viola, cello, or string bass. In most cases the student will need to provide his/her own instrument and be committed to achieving an established level of performance commensurate with being placed in an advanced orchestra during his/her second year of performing.

0791 - ORCHESTRA II – Full Year 1.0
This course is designed for those string performers who have completed one or more years of study. Students will be placed appropriately according to instrument selection and/or playing proficiency.

0352 - THEATRE ARTS II – Full Year 1.0
This is an intermediate level course that allows the student to study in depth the various aspects of theatre performance. Emphasis is placed on the development of the tools one needs to be an effective performer.

5312 - SPANISH IA – Full Year 1.0
Spanish IA is the first year of a two year middle school Spanish program designed to introduce students to the formal study of the Spanish language. The middle school program allows students more time to acquire the fundamental language skills of listening, speaking, reading, and writing Spanish. The middle school Spanish I program emphasizes the development of oral language, the study of introductory vocabulary, pronunciation and grammar. The culture of the Spanish-speaking world is integrated into all aspects of the course.

5334 - SPANISH III Pre AP – Full Year 1.0 (High School Credit – Test Required)
The Spanish III PreAP program continues the development of proficiency in all four fundamental skills with concentration on oral communication. The Spanish III PreAP student will read and discuss in Spanish a variety of cultural and literary selections. A more sophisticated use of Spanish will be fostered through writing and conversational opportunities.

0474 - YEARBOOK – Full Year 1.0 (Teacher Recommendation)
Students gain laboratory experience in magazine production as they produce the yearbooks. Experience includes writing copy, computer copy preparation using Adobe in Design CS3, page layout and design skills, photography, photo cropping and editing. Students in this class will also produce the literary magazine.

0395 - JR. CADETS – Full Year 1.0
Junior Cadets strengthens the lives of youth by teaching the importance of self-confidence, academic achievement, honoring our veterans, good citizenship, community service, and living a healthy, drug-free lifestyle. The program focuses on character building aligned with the 7 Habits of Highly Effective Teens while building leadership skills and promoting a lifestyle that is conducive to being productive members of society.

0450 – Teen Leadership – Full Year 1.0
Teen Leadership is a course dedicated to the strong development of character founded on good moral, ethical principles and “The 7 Habits of Highly Effective Teens”.
8th Grade STEM Course Catalog

Core Classes:

0801 - ENGLISH 8 Pre AP
This is a rigorous college preparatory course that prepares students for success when they take Advanced Placement and other challenging courses in high school. Added to this specialized curriculum are advanced grammar and logic, such as inference and generalization; literature of various genres, periods, and cultures; multi-paragraph essays for a variety of purposes and audiences; oral presentations and listening skills; study skills; and research involving documentation.

0800 - ENGLISH 8 GT/Pre AP-GT (Test Required)
The theme for grade 8 in the differentiated curriculum is “Discovery of Self.” Classical literature is stressed, along with structured essay writing as well as creative types of writing. The materials chosen offer an appropriate challenge in all areas of language arts.

0823 - MATH 8 – Full Year 1.0 (Teacher Recommendation)
Designed to be transition into the abstract mathematics of algebra at the high school level, the curriculum is focused on preparing all students to enter Algebra I in the ninth grade. Sixth and seventh grade topics are extended with emphasis placed upon the prealgebra skills of Cartesian graphing, operations involving integers, and the concepts of variables and equations as mathematical models.

2312 - ALGEBRA I GT/Pre AP (Test Required)
This course is the bridge to the abstract study of mathematics. Topics: the real number system and its properties, linear equations and inequalities (one and two variables), algebraic polynomials, rational expressions, roots and radicals, functions, and quadratic equations. Relevant problem solving is interwoven. The use of graphing calculators and computers is integrated throughout the curriculum. To be successful in this course a student must have a strong foundation in all the pre-algebra skills.

2314 - ALGEBRA I Pre AP
This course is designed for the student who intends to take calculus in high school. It is the bridge to the abstract study of mathematics. Topics: the real number system and its properties, linear equations and inequalities (one and two variables), algebraic polynomials, rational expressions, roots and radicals, functions, and quadratic equations. Relevant problem-solving is interwoven. The use of graphing calculators and computers is integrated throughout the curriculum. To be successful in this course a student must have a strong foundation in all the pre-algebra skills.

0834 - SCIENCE 8 Pre AP
This course will include the standard eighth grade science TEKS with an emphasis on extending the Matter and Energy, Force, Motion and Energy and Organisms and Environment strands so that students have the necessary background to be successful in PreAP high school science courses.

0847 - U.S. HISTORY 8 Pre AP
This advanced level course is an enriched and more comprehensive coverage of the regular U.S. History course, based on a set of content-specific strategies designed to introduce skills, concepts and assessment methods that prepare students for success when they take Advanced Placement and other challenging courses in high school. The course will include the regular 8th grade U.S History TEKS, with an emphasis on learning and writing skills.

0851 - PHYSICAL EDUCATION – Full Year 1.0
This course will include instructions and opportunities in motor skills for efficient movement, participation in individual, dual and team sports, development of a high level of personal and physical fitness, and knowledge and skills for leisure and life-time sports activities.
0851 - PHYSICAL EDUCATION – Semester 0.5
This course will include instructions and opportunities in motor skills for efficient movement, participation in individual, dual and team sports, development of a high level of personal and physical fitness, and knowledge and skills for leisure and life-time sports activities.

AND

3107 – HEALTH – Semester 0.5 (High School Credit)
Health is a course required for high school graduation. It includes the study of the human body and the functions of the systems, drug abuse, first aid, CPR, diseases, pollution and its effects, nutrition, exercise, health agencies and sex education.

8505 - ATHLETICS 8
This course will include instruction for boys in the sport of football, basketball, and track. Instruction for girls will be in volleyball, basketball, and track. Basic motor skills will be taught, as well as higher forms of physical skills that are required of athletes. A high degree of physical and cardiovascular fitness will be emphasized. Emphasis will also be placed on teaching good sportsmanship and developing a respect for other athletes and coaches in order to insure a quality educational experience.

3000 – DIGITAL COMMUNICATION – Full Year 1.0 (High School Credit)
This course covers design, development and creation of digital media through the exploration of various industry-standard programs. Students will learn what it takes to create and manage a web site through project based learning. They will learn the elements of design and how proper implementation impacts page layout techniques, text formatting, graphics, images and multimedia. Hardware used as part of the class includes iMacs, digital cameras, and video cameras.

STEM Semester Elective Classes:

0365 FORENSIC SCIENCE – Semester 0.5
The 8th Grade STEM Forensic Science Elective explores the basics of forensics, focusing on the application of science to legal matters. Students develop their observational and investigative skills through collaborative research, inquiry activities, and case studies. Topics explored include crime scene analysis, types of evidence, fingerprint analysis, hand-writing analysis, forensic anthropology, forensic entomology, blood-stain analysis and other popular aspects of forensics and criminology.

Combined with

0291 CHALLENGE TEAM – Semester 0.5
The 8th Grade STEM Competition Teams Elective is designed to guide students through the processes involved in preparing winning science and engineering projects for competitions such as the ARASE Science Fair, e-Cybermission, GOOGLE Science Fair, DuPont Challenge, etc. Students apply experimental and engineering design processes to prepare projects and compete for cash awards, scholarships, travel, and recognition. Previous STEM Teams have won at State and National Levels, have met Nobel Laureates, renowned scientists, prominent politicians and have even met the President while presenting at the White House Science Fair.

STEM Full Year Elective Classes:

0675 – ART 1 – Full Year 1.0
Art 1 provides a study of the art elements and principles through experiences with a variety of art media and tools in design, drawing, painting, sculpture, ceramics, fiber art, photographic imagery, and electronic media-generated art; identifies and compares artwork across time and culture; and evaluates artwork through discussion and critique.

0295 – ART 2 – Full Year 1.0
Art 2 compares and contrasts the art elements and principles through experiences with a variety of art media and tools in design, drawing, painting, printmaking, sculpture, ceramics, fiber art, photographic imagery, and electronic media-generated art; analyzes historical and cultural influences on artwork; and evaluates through discussion and critique.
0452 – ART 3 – Full Year 1.0
Art 3 defines a variety of concepts directly related to the art elements and principles through experiences with media and tools in design, drawing, painting, printmaking, sculpture, ceramics, fiber art, photographic imagery, and electronic media-generated art; analyzes technological, historical and cultural influences on artwork; and evaluates artworks through discussion and critique.

3019 – PRINCIPLES OF APPLIED ENGINEERING – Full Year 1.0 (High School Credit)
This course provides an overview of the various fields of science, technology, engineering and mathematics and their interrelationships. Students will use a variety of computer hardware and software applications to complete assignments and projects. Upon completing this course, students will have an understanding of the various fields and will be able to make informed decisions regarding a coherent sequence of subsequent courses.

3020 – PRINCIPLES OF ART, A/V & COMMUNICATION – Full Year 1.0 (High School Credit)
This course offers students the opportunity to expand their knowledge and usage of technology. Students will develop video editing, filming, project planning, and design skills. Some projects include the STEM Recruitment video, 7 Habits videos, STEM Core Values videos, and personal student projects.

Full Year Elective Classes:

0472 - BAND II – Full Year 1.0
This course is designed for students who have completed one or two years of study on their band instrument but who have not yet achieved a level of excellence commensurate with being named to an advanced band. The students will continue to strive to achieve this level in hopes of being placed in an advanced band after the second year of study.

0462 - CHOIR III – Full Year 1.0
The advanced level of choir is offered to those students who have attained a performance proficiency commensurate with the ability grouping for a specific choral group (i.e. mixed choir, boy’s choir, treble choir, etc.). Students enrolling in an advanced class should have a serious interest in singing. They will participate in concerts, programs, and UIL competitions, which require rehearsal and practice outside the school day.

0482 - ORCHESTRA II – Full Year 1.0
This course is designed for those string performers who have completed one or more years of study. Students will be placed appropriately according to instrument selection and/or playing proficiency.

0354 - THEATRE ARTS III – Full Year 1.0
This is an advanced level course that allows the student to study in depth the various aspects of theatre performance. Emphasis is placed on the development of the individual actor and the honing of performance skills focusing toward the presentation of the final dramatic production.

5313 - SPANISH I - 8TH GRADE – Full Year 1.0 (Teacher Recommendation – High School Credit)
Spanish 1 - 8th Grade is a one year course designed for those students who have the interest, motivation, and study skills to take Spanish I. The development of oral language skills will be emphasized along with pronunciation, vocabulary, and grammar. The culture of the Spanish-speaking world will be integrated into the learning of the language. Please see your counselor for more information.

5345 - SPANISH LANGUAGE AP-Prerequisites: Spanish III or Higher – Full Year 1.0 (College Credit)
The advanced placement (AP) Spanish Language covers the equivalent of a one year college course in advanced Spanish composition and conversation and prepares students for the AP exam. It encompasses aural/oral skills, reading comprehension, grammar, and composition. The course emphasizes the use of Spanish for active communication.
0589 - AVID – Full Year 1.0
AVID, which stands for Advancement Via Individual Determination, is a college readiness program designed to help students develop the skills they need to be successful in college. The program places special emphasis on growing writing, critical thinking, teamwork, organization and reading skills.

0474 - YEARBOOK – Full Year 1.0 (Teacher Recommendation)
Students gain laboratory experience in magazine production as they produce the yearbooks. Experience includes writing copy, computer copy preparation using Adobe in Design CS3, page layout and design skills, photography, photo cropping and editing. Students in this class will also produce the literary magazine.

0395 – JR. CADETS – Full Year 1.0
Junior Cadets strengthens the lives of youth by teaching the importance of self-confidence, academic achievement, honoring our veterans, good citizenship, community service, and living a healthy, drug-free lifestyle. The program focuses on character building aligned with the 7 Habits of Highly Effective Teens while building leadership skills and promoting a lifestyle that is conducive to being productive members of society.

0410 – PALS – Full Year 1.0 (Teacher Recommendation)
The students in this class are committed to the service of our community. They learn how to become ambassadors of goodwill, someone others can lean on. This course focuses on peer assistance, campus beautification, mediation, peer mentoring, leadership and service.

0450 – Teen Leadership – Full Year 1.0
Teen Leadership is a course dedicated to the strong development of character founded on good moral, ethical principles and “The 7 Habits of Highly Effective Teens”.