

STEAM Academy Middle School

Course Description Guide 2025-2026



STEAM Academy Middle School
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201 Brotherton Ln, Ferguson, MO 63135

Math Course Descriptions

6th Grade Advanced Math (Full-year course)

This fast-paced course challenges students to examine, in-depth, the study of five critical areas: (1) using concepts of ratios and rate to solve problems; (2) understanding division of fractions (3) using expressions and equations to set up and solve problems (4) solve real-world mathematical problems involving area, surface area and volume; and (5) understanding of statistical reasoning.

6th Grade Pre-Algebra (Full-year course)

This fast-paced course challenges students to examine, in-depth, the study of four critical areas (1) adding, subtracting, multiplying, and dividing rational numbers; (2) analyzing proportional relationships and using expressions and equations; (3) using sampling to draw inferences about a population; and (4) solving problems involving angle measure, area, surface area, and volume.

7th Grade Advanced Math: Pre-Algebra (Full-year course)

This fast-paced course challenges students to examine, in-depth, the study of 4 critical areas (1) using expressions and equations to set up and solve problems including systems of equations; (2) Functions; (3) solve real-world mathematical problems involving area, surface area and volume, as well as geometric shapes and angles; (4) understanding of data analysis and display, probability, and statistical reasoning.

Algebra I (Full-year course)

This course examines, in-depth, the study of connecting patterns and functions, writing, solving and graphing linear equations and inequalities, modeling linear data, statistics, solving systems of equations and inequalities, operations of polynomials, factoring, quadratics and exponential functions; and radicals. Students who earn a C or higher in this class will receive high school credit.

**Algebra I credit does not count towards high school GPA.

***Students are expected to earn a C or higher to advance to the next course.

Geometry (Full-year course)

Prerequisite - Completed 7th Grade Algebra I with a C or higher

This course examines, in-depth, the study of the introduction of geometry, congruence, proofs, and constructions, polygons, trigonometry, similarity and proofs, transformations and translations, extending to three-dimensional solids, circles with and without coordinates, and applications of probability. Students who earn a C or higher in this class will receive high school credit.

**Geometry credit does not count towards High School GPA.

***Students are expected to earn a C or higher to advance to the next course.

Humanities (English Language Arts (ELA) and Social Studies)

Course Descriptions

***This course may be split into 2 courses depending on staffing (ELA and Social Studies)**

6th grade Humanities (Full-year course)

Based on the Missouri Priority Standards for Geography and the Ancient River Civilizations, 6th graders will learn Social Studies from an interdisciplinary approach with English Language Arts. The course will focus on how location influenced the development of people living in cities. Additional themes are the foundational, technological, math, and science achievements of the earliest civilizations from Mesopotamia, Egypt, India, and China. Students will continue to develop reading, writing, informational literacy, and listening and speaking skills.

7th grade Humanities (Full-year course)

Based on the Missouri Priority Standards, 7th graders will learn Social Studies from an interdisciplinary approach with English Language Arts. Students will study the World's past from Early Western Civilization to the end of the Middle Ages. Using a project based approach and reading non-fiction primary sources, students will study the histories of Africa, Asia, Europe, and the Americas before 1400 CE (AD). Students will continue to develop reading, writing, informational literacy, and listening and speaking skills.

8th grade Humanities (Full-year course)

Based on the Missouri Priority Standards, 8th graders will learn Social Studies from an interdisciplinary approach with English Language Arts. Using a project based approach with an emphasis on primary sources, students will study American History from early America to the Civil War. Students will be introduced to the formation of the American constitutional government. Students will continue to develop reading, writing, informational literacy, and listening and speaking skills.

Science Course Descriptions

6th Grade Science (Full-year course)

This course examines all areas of science including physical, Earth, and life science. The physical science concepts include students studying thermal energy. The students will learn about aspects of life science which includes the interwoven relationships between living things and their environment. Through the study of ecology, topics to be investigated are the diversity of life, changes and adaptations over time. Students will also learn about cycles on Earth. Students will learn to apply science and engineering practices. They will also demonstrate laboratory skills and problem solving skills.

7th Grade Science (Full-year course)

This course examines the physics, chemistry, life, and Earth components of science. Through the use of science and engineering practices, students will engage in matter, cells, biochemistry, weather and climate, and how humans impact the environment. The students will evaluate and problem solve through investigations of reducing erosional forces due to human impact. Using the scientific process, engineering, and scientific models, students will investigate the principles and theories that govern the sciences. Throughout the course, the responsible use of natural resources and management are emphasized. Students will also understand the relevance of science in daily life, and evaluate the impact of their decisions on the environment.

8th Grade Science (Full-year course)

This course studies Earth and Space, physical, and life science. Space, force and motion, and waves are included in this science course. This will include the laws of motion, forces, mechanical systems, work, energy, power, waves, sound and light, cycles, and events that impact our planet. Students will also engage in genetic concepts. Students will apply the science and engineering practices, understand the relevance of science in daily life, and evaluate the impact of our decisions on the environment.

Physical Education (PE)/Health/Wellness

6th Grade Physical Education and Health (Required Elective) (Full-year course)

The sixth grade physical education program focuses on developing and refining movement patterns and skills to meet a variety of physical activities. Students will learn the basic rules, beginning strategies, and different types of sports and activities that are readily available for them to participate in. Mindfulness, mindful movement, physical health, mental health, and social health topics will be explored. Fitness and wellness are the cornerstone principles of the physical education program and students will be assessed regularly throughout the year.

Sixth grade health introduces topics such as mental, emotional and social health, growth and nutrition, and drug and disease prevention.

7th Grade Physical Education and Health (Required Elective) (Full-year course)

The seventh grade physical education program builds on what the students learn in sixth grade. Students will learn more advanced strategies in a variety of athletic and fitness based activities. Students will be given opportunities to learn and participate in traditional and nontraditional sports. Students will be assessed regularly throughout the year.

Seventh grade health takes a big picture approach to health and wellness. The structure of the body, basic nutrition, disease prevention, emotional health, safety, and basic life saving strategies will be covered. Many of the concepts taught in health will be applied and used during physical education.

8th Grade Physical Education and Health (Required Elective) (Full-year course)

The eighth grade physical education program will continue working on various skills and lifetime activities. Fitness and wellness will be assessed regularly throughout the year.

Eighth grade health reviews some of the content taught in 7th grade and introduces skills and information that can help students make good decisions in challenging situations. More specific body systems are covered, life management, and substance education is introduced in 8th grade. Concepts that are taught in health class will be reinforced during physical education.

Exploratory and Elective Courses

Exploratory elective classes for sixth grade students are 1 quarter long. Students will rotate through different exploratory classes during the year.

Music - Music is required for 6th grade students. Sixth-grade students can select from Band, Orchestra, or General Music.

Electives - Seventh and eighth grade students may choose from elective courses. Elective courses shall only be taken one time/per student.

Students will indicate their preference of elective courses during the course selection window. We will do our best to accommodate requests, but cannot guarantee all requests will be fulfilled. Some elective courses are full year long classes, while others are semester-long electives.

*****Students will not be allowed to change their elective choices after submitting all course selection materials to the STEAM Academy office. We do not permit schedule changes after choices are made.***

Advancement Via Individual Determination (AVID)

8th Grade AVID (Semester Elective)

The AVID elective course in the eighth grade provides students with the skills needed to be successful in advancing academically with the ultimate goal of attending college. Students will learn study skills, note-taking, time management, writing and research skills, while preparing themselves for college. The class provides support for success in an academically rigorous curriculum.

World Language

6th grade Spanish: (Exploratory) (Quarter)

Sixth grade Spanish exposes students to basic vocabulary, conversation and concepts of the language. Students will explore European, South American, and Caribbean cultures who communicate primarily in Spanish.

7th Grade Spanish (Semester Elective)

Seventh grade Spanish introduces students to the basic structure of the Spanish language. Students will learn to communicate about themselves and their surroundings in Spanish. The primary focus of Level I communication takes place in the present tense. Students that earn a passing grade in 7th grade Spanish can enroll in 8th grade Spanish.

Note- Students must enroll and pass (with a C or higher) Spanish in 7th and 8th grade in order to advance to Spanish II in 9th grade.

7th Grade French: (Semester Elective)

Seventh grade French introduces students to the basic structure of the French language. Students will learn to communicate about themselves and their surroundings in French. The primary focus of Level I communication takes place in the present tense. Students that earn a passing grade in 7th grade French can enroll in 8th grade French.

Note- Students must enroll and pass (with a C or higher) French in 7th and 8th grade in order to advance to French II in 9th grade.

8th Grade Spanish (Elective) (Full-year course)

Eighth grade Spanish continues the structure of 7th grade Spanish and adds depth in vocabulary and grammar. Students will learn to communicate about themselves and their surroundings in Spanish. The primary focus of communication takes place in the present tense. Students that earn a passing grade in 8th grade Spanish can enroll in high school Spanish II.

Prerequisite: Students must pass (with a C or higher) 7th grade Spanish.

8th Grade French: (Elective) (Full-year course)

Eighth grade French continues the structure of 7th grade French and adds depth in vocabulary and grammar. Students will learn to communicate about themselves and their surroundings in French. The primary focus of communication takes place in the present tense. Students that earn a passing grade in 8th grade French can enroll in High School French II.

Prerequisite: Students must pass (with a C or higher) 7th grade French.

Note- Students must enroll and pass (with a C or higher) Spanish or French in 7th and 8th grade in order to advance to Spanish II in 9th grade. This does NOT give students high school credit, only allows them to advance to Spanish II.

Career and Technical Education Course Descriptions

6th Grade Computer Science (Exploratory) (Quarter)

Computer Science is a technology course for students to gain new knowledge in the vast world of computing, coding, graphic design, and robotics. Students are challenged to design and create unique concepts through project-based learning (PBL). The projects are designed around solving real world challenges. The course is broken down into various units that promote self-expression, as well as problem solving through exploration, collaboration, and teamwork.

7th Grade PLTW - Design & Modeling (Semester Elective)

Design and Modeling (DM) provides students opportunities to apply the design process to creatively solve problems. Students learn and utilize methods for communicating design ideas through sketches, solid models, and mathematical models. Students will understand how models

can be simulated to represent an authentic product and generate data for further analysis and observations.

7th Grade PLTW - App Creators (Semester Elective)

The App Creators course will introduce students to the field of computer science and the concepts of computational thinking through the creation of mobile apps. In addition to the creation and coding of mobile apps, students will also create a variety of original graphics, images, and animations needed to give their apps a unique look. Content will challenge students to be creative and innovative as they collaboratively design and develop mobile solutions to engaging real-world problems.

7th Grade PLTW - Innovators and Makers (Semester Elective)

The Innovators and Makers course will introduce students to the blending of Computer Science concepts and skills with hand-made objects, and mechanical systems, used in the real world. Throughout the semester, students will learn about 2D/3D build techniques with various materials, coding a microcontroller [e.g., micro:bit], wiring, electrical circuits, switches, servos, and more. Students will experience how to create and code as a means to fuse together the interaction of technology and physical design builds.

7th or 8th Grade - Computer Graphics [Digital Illustration] (Semester Elective)

The Computer Graphics [Digital Illustration] course provides students the opportunity to create digital artistic content, images, and animations through a number of offline and online graphics software [e.g., Painter, Gimp, Artweaver, Piskel, Pixilart, etc.]. It blends art and technology techniques into a unique approach of creative expression.

8th Grade PLTW - Automation and Robotics (Semester Elective)

The Automation and Robotics course will allow students to explore 3D build technique and engineering through the VEX Robotics® platform. Students will build a wide variety of mechanical systems [e.g., gear train, chain drive, cam and follower, etc.] as a means to understand directional movement, energy transfer, safe build technique and supports, and design concepts. After an understanding of build technique and mechanical systems is achieved, students will incorporate robotics elements into a number of functioning builds using a microcontroller, motors, switches, sensors, and more.

8th Grade Computer Literacy (Semester Elective)

The 8th grade Computer Literacy course explores website design [HTML5, CSS, JavaScript], digital illustration [drawing], 2D animation, 2D game design [JavaScript], and a brief introduction to 3D game design in Unity [CSharp language]. The course focuses on website

design and gaming. Students will learn how to apply the design process through planning, researching, sketching, creating, designing, and coding the essential elements needed to create a functioning website from scratch. The website will include elements such as: a drawing, an animation, a linked JavaScript game, and links to other websites.

8th Grade PLTW - Medical Detectives (Semester Elective)

In the Medical Detectives class, students play the role of real-life medical detectives as they collect and analyze medical data to diagnose disease. Students will solve medical mysteries through hands-on projects and labs, measure and interpret vital signs, dissect a sheep brain, investigate disease outbreaks, and explore how a breakdown within the human body can lead to dysfunction.

Mass Communications

8th Grade Mass Communications - Broadcasting (Semester Elective)

This course explores the use of radio, film and television in mass communication. Students will explore journalistic writing, public speaking and performance, special effects, makeup and other technical elements necessary for mass media. The class will assume the role of a production team to design and produce a radio show, a newscast, short films and create their own television program.

Theatre

6th Grade Creative Communications - World Theatre (Exploratory) (Quarter)

Students will act as theater professionals and participate in the audition, rehearsal and production process in order to create a class production of a published script. They will hone their skills in collaboration, communication, creativity and critical thinking.

7th Grade Creative Communications - Acting and Technical Theatre (Semester Elective)

This course explores story, improvisation and scene work. Students learn the basics of creating a character and plot. Students will perform monologues, scenes, open scenes, and improvisation. Students will also learn the basics of technical theatre including set design, scene building, costuming, stage makeup, lighting, sound, props, publicity, and theatre business. Students will participate in a performance.

8th Grade Intro to Acting (Semester Elective)

Semester 1: Theatre basics, basic improvisation, concentration, parts of the stage, emotional memory, Hindu Theatre, Squirms, Dramatic Action, Memorized Sketch

Semester 2: African American Theatre, characterization, Commedia Del Arte, observation, Rhythm, Pantomime, Scene Work, play production

**This course will cover the content that high school Intro to Theatre/Acting covers. Upon successful completion of this course, students can skip Intro to Acting in high school and move straight into higher level courses. Note- this does NOT give students high school credit, only allows them to skip this class in high school. Students will participate in a performance.*

Visual Art

6th Grade Visual Art - World Art (Exploratory) (Quarter)

Students will learn the elements of visual art and apply them in both two-dimensional and three-dimensional media. Students will learn art history through exposure to the great works of visual art and learn world cultures through extensive study of world art. Students will exhibit work in an art show.

7th Grade Visual Art - Design (Semester Elective)

Students will continue to learn the elements of visual art and apply them in both two-dimensional and three-dimensional media. Students will learn art history through exposure to the great works of visual art and learn how art affects all STEAM areas through extensive study of the design and advertising process. Students will exhibit work in an art show.

8th Grade Visual Art - Art Basics (Semester Elective)

Students will continue to learn the elements of visual art and apply them in both two-dimensional and three-dimensional media. Design vocabulary, color study, and art history are also explored. Students will exhibit work in an art show.

**This course will cover the content that high school Art Basics covers. Upon successful completion of this course (grade of a C or higher), students can skip Art Basics in high school and move straight into higher level courses. Note, this course does NOT give students high school credit, only allows them to skip this class in high school.*

Band

6th Grade Band (Full-year elective course)

Students will begin traditional methods of instruction including reading of complex music as part of a band. Students may select from woodwind, brass or percussion for instrumental music instruction. Students will perform in a minimum of two concerts and practice after school. Students may participate in music contests. Instrumental experience is preferred.

7th Grade Band (Full-year elective course)

Students will begin traditional methods of instruction including reading of complex music as part of a band. Students may select from woodwind, brass or percussion for instrumental music instruction. Students will perform in a minimum of two concerts and practice after school. Students may participate in music contests. Students in this course must have instrumental experience.

8th Grade Band (Full-year elective course)

Students will continue traditional methods of instruction including reading of complex music as part of a band. Students may select from woodwind, brass or percussion for instrumental music instruction. Students will perform in a minimum of two concerts and practice after school. Students may participate in music contests. Students in this course must have instrumental experience.

Strings/Orchestra

6th Grade Strings (Full-year elective course)

Students will continue traditional methods of strings instruction including reading of complex music as part of an orchestra. Students may select from the violin, viola, cello or bass for instrumental music instruction. Students will perform in a minimum of two concerts. Students may participate in music contests. Instrumental experience is preferred.

7th Grade Orchestra (Full-year elective course)

Students will continue traditional methods of strings instruction including reading of complex music as part of an orchestra. Students may select from the violin, viola, cello or bass for instrumental music instruction. Students will perform in a minimum of two concerts. Students may participate in music contests. Students in this course must have strings experience.

8th Grade Orchestra (Full-year elective course)

Students will continue traditional methods of strings instruction including reading of complex music as part of an orchestra. Students may select from the violin, viola, cello or bass for

instrumental music instruction. Students will perform in a minimum of two concerts. Students may participate in music contests. Students in this course must have strings experience.

General/Vocal Music

6th Grade General Music (Full-year elective course)

Students will learn the elements of music including melody, harmony and rhythm. Students in this course will participate in different music mediums. Students will learn the great works of musical literature. Students will perform in a minimum of two concerts.

7th Grade Choir (Full-year elective course)

Students will continue traditional methods of choral instruction including reading of complex music as part of a choir. Students will learn sight singing using both traditional and solfege models. Students will learn to sing in harmony based on their personal vocal part. Students will perform in a minimum of two concerts. Students may participate in music contests.

8th Grade Choir (Full-year elective course)

Students will continue traditional methods of choral instruction including reading of complex music as part of a choir. Students will learn sight singing using both traditional and solfege models. Students will learn to sing in harmony based on their personal vocal part. Students will perform in a minimum of two concerts. Students may participate in music contests.