



**Middle School
2022-2023
Academic Planning Guide**

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Our Mission

Never Stop Innovating

Our Vision

We envision a world of exponential possibilities where every child develops the innate knowledge, skills, creativity, and character to thrive, lead, and succeed in an ever-changing future.

Welcome to STEM School Highlands Ranch. We are an innovative, free, public, charter learning community that exists to innovate K-12 education in order to prepare every student to lead change, solve problems, and succeed in an exponentially changing world.

We are more than a school. We are a think tank, a learning lab, and a catalyst for creativity. We are a haven for continual innovation, creative exploration, and rigorous discovery. We defy definition and break with convention. Because that's what innovators do.

We see school differently. Although our curriculum has a college preparatory focus with emphasis on developing core liberal arts skills in reading, writing, mathematics, and science, we use creativity, problem-solving, and innovation to inspire and challenge our students.

We are more than just STEM. We infuse STEM into all classrooms. We challenge students with STEM-based, real-world problem solving fueled by constant exploration, inquiry, and discovery.

We foster innovation. We equip every student, every day, in every classroom with the knowledge, skills, confidence, and character to thrive in a constantly changing world. By using continuous inquiry, constant discovery, and trial and error as critical pathways to new discoveries, we create a culture of safe failure and fearless innovation.

We empower students. We put students in the driver's seat of their learning, engaging and empowering them to push their own unique boundaries of innovative learning, thinking, and doing.

We see teachers as catalysts. Here, teachers are role models and innovation coaches who provide the framework for learning. Our teachers are experts in teaching appropriate use of technology, collaboration, and teamwork that sparks interest in STEM and learning at an early age.

We innovate and learn together. Here, we leverage the power of collaboration, teamwork, and group think to build, design and create solutions to real-world problems.

We're fostering tomorrow's innovators, creators, and change agents. We work tirelessly to nurture and develop integrity, respect, responsibility, and honesty within our students, and take pride in encouraging well-rounded student development.

Middle School Policies

Availability of Classes: While every effort will be made to provide the classes a student has requested during registration, some classes may not be available due to student enrollment numbers, staffing, and budget.

Adding/Dropping a Middle School Class: School counselors are responsible and make ALL possible schedule changes. Schedule changes are allowed **within the first 10 days of the semester**. Changes after this date are considered on an individual basis.

Reasons for Schedule Changes Include:

- Missing required classes
- Elective changes
- Level changes if appropriate
- Teacher Request

Please contact your counselor for schedule change procedures. Find their contact information on our [website](#).

High School Credit for Middle School Students

Compliance with DCSD Policy IKF-R-2

A student may earn credits towards a Douglas County School District high school diploma prior to the official start of the 9th grade year.

1. Credit will automatically be awarded for earning an “A” in:
 - a. Any Douglas County School District high school summer session content course(s) completed preceding the start of the 9th grade year
 - b. Any Mathematics course(s) which exceeds the expectation of an Algebra 1 course
 - c. Any World Language course(s), which exceeds the expectations of Level 1
 - d. Any content area course meeting Board of Education criteria, and which exceeds the expectations of a typical Douglas County 9th grade course, as approved by the high school building administration.
2. **Students who earn a grade other than an “A” will declare during their Junior year whether or not the course will be used to meet high school graduation requirements by submitting a Declaration of Credit for Middle School Courses form to the high school registrar. Once the form is submitted, the credit cannot be removed from the high school transcript.**

Core Class Placement

Students are automatically placed in standard classes. If accelerated placement is desired, teacher input is preferred and parent requests will be taken into consideration.

Course Descriptions for High School Courses

Please see the High School Academic Planning Guide at www.stemk12.org.

Fees

Course Fees –As per STEM Charter Board policy, where additional charges are required for specific courses, the costs will be noted in the course description. *Fees are subject to change.

Honor Roll

Honor roll is calculated based on each child's GPA each semester. Certificates are available upon request; please reach out to your child's counselor.

Honor Roll 3.5-3.79 GPA

Director's Honor Roll 3.8+ GPA

GPA

A student's earned Grade Point Average for one semester or one year.

| Grades | GPA |
|--------|-----|
| A | 4.0 |
| B | 3.0 |
| C | 2.0 |
| D | 1.0 |
| F | 0 |

Math Progression and Policy

- 6th and 7th grade students in Algebra 1 or higher will need to earn an 80% or higher to move on to the next class.
- Course I, Course II, and Pre Algebra students in above grade-level classes will not be recommended to move on without a 70% or higher in class.
- Students in Algebra I, Geometry, Algebra II, or higher will not be recommended to move on without an 80% or higher in class.

Sample Course Interpretation

| | | | |
|-----------------|-----------|---|-----------------------------------|
| Language Arts 6 | 6th grade | No fee, although students will be asked to supply required novels throughout the year | No prerequisite, required course. |
|-----------------|-----------|---|-----------------------------------|

Course Title: Language Arts 6

Course duration: Year long course

Fees: No fee, although students will be asked to supply required novels throughout the year

Prerequisites: No prerequisite, required course.

Grade level(s) of students who can take the course: 6th grade

Course Descriptions by Department

Language Arts

Language Arts 6

STEMMS016S1/S2

| | | | |
|------------------|-----------|--|------------------------|
| Year long course | 6th grade | Students will be asked to supply required novels throughout the year | Required course |
|------------------|-----------|--|------------------------|

Following the Core Knowledge Sequence, emphasis is on communication through a systematic integration of grammar, writing structure, vocabulary, and reading comprehension. Short stories, writing, novels, plays, poetry, grammar, and vocabulary are the building blocks of this course.

-OR-

Language Arts 6 Accelerated

STEMMS016HS1/S2

| | | | |
|------------------|-----------|--|------------------------|
| Year long course | 6th grade | Students will be asked to supply required novels throughout the year | Required course |
|------------------|-----------|--|------------------------|

Following the Core Knowledge Sequence, this is an accelerated course with emphasis on communication through a systematic integration of grammar, writing structure, vocabulary, and reading comprehension. This course is intended for students capable of a challenging curriculum, and it provides the foundation for further Honors and Advanced English courses. Short stories, the writing process, the reading of novels, plays, and poetry are taught, in addition to grammar and vocabulary.

Language Arts 7

STEMMS017S1/S2

| | | | |
|------------------|-----------|--|------------------------|
| Year long course | 7th grade | Students will be asked to supply required novels throughout the year | Required course |
|------------------|-----------|--|------------------------|

Following the Core Knowledge Sequence, emphasis is on communication through language, composition, literature, and the development of reading skills and strategies. Students develop language, vocabulary and speech skills; they develop in composition by writing paragraphs and essays. Literacy skills are utilized and strengthened through reading short stories, poems, and novels. Foundational grammar and standard usage are taught in an integrated approach alongside composition and the reading of literature.

-OR-

Language Arts 7 Accelerated

STEMMS017HS1/S2

| | | | |
|------------------|-----------|--|------------------------|
| Year long course | 6th grade | Students will be asked to supply required novels throughout the year | Required course |
|------------------|-----------|--|------------------------|

Following the Core Knowledge Sequence, emphasis is on communication through language, composition, literature, and the development of reading skills and strategies. Students develop language, vocabulary and speech skills; they develop in composition by writing paragraphs and essays. Literacy skills are utilized and strengthened through reading short stories, poems, and novels. Foundational grammar and standard usage are taught in an integrated approach alongside composition and the reading of literature

Language Arts 8

STEMMS018S1/S2

| | | | |
|------------------|-----------|--|------------------------|
| Year long course | 8th grade | Students will be asked to supply required novels throughout the year | Required course |
|------------------|-----------|--|------------------------|

Following the Core Knowledge Sequence, emphasis is on communication through composition of well-structured sentences, poems, and paragraphs. Short stories, novels, plays, and poetry are the building blocks of the course. Foundational grammar and standard usage, as well as, vocabulary are taught alongside reading and literature, as well as through the continuation of grammar practice.

-OR-

Language Arts 8 Accelerated

STEMMS018HS1/S2

| | | | |
|------------------|-----------|--|------------------------|
| Year long course | 8th grade | Students will be asked to supply required novels throughout the year | Required course |
|------------------|-----------|--|------------------------|

Following the Core Knowledge Sequence, emphasis is on communication through composition of well-structured sentences, poems and paragraphs. Short stories, novels, plays, and poetry are the building blocks of the course. Foundational grammar and standard usage as well as vocabulary are taught alongside reading and literature, as well as through the continuation of grammar practice.

Mathematics

Math Course Sequence

Students progress through mathematics courses in the order indicated below.

Math Course I→Math Course II→Pre-Algebra→Algebra I→Geometry→Algebra II

Course I

STEMMS026S1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 6th | N/A | Math placement testing |
|------------------|-----|-----|------------------------|

This course introduces students to numbers and operations, algebraic representations, integers, measurement, estimation, fractions, decimals, percentages, and negative numbers. Students will touch on some basics of Geometry as well as using probability and statistics.

Course II

STEMMS027S1/S2

| | | | |
|------------------|---------|-----|---|
| Year long course | 6th-7th | N/A | Math Course I or demonstrated proficiency of topics covered in Course I |
|------------------|---------|-----|---|

This required course is designed to reinforce, and expand upon, concepts and skills introduced in the previous course work. The curriculum spans a wide-range of proficiencies which include translating, reasoning, connecting, estimating, place-value, operations with rational numbers, evaluating expressions, solving simple equations, measurement, perimeter, area and volume formulas, ratios, proportions, percent, appropriate use of calculators, probability, statistics, data collection, graphing, and data analysis

Pre Algebra

STEMMS028S1/S2

| | | | |
|------------------|---------|-----|---|
| Year long course | 6th-8th | N/A | Math Course II or demonstrated proficiency of topics covered in Course II |
|------------------|---------|-----|---|

This course is an introduction to the arithmetic skills needed to succeed in Algebra I. Students will be exploring the fundamentals of arithmetic as well as the topics of number theory and basic equations, inequalities, and ratios through an emphasis on problem solving, computation, and mathematical applications.

Middle School Algebra I

STEMMS029S1/S2

| | | | |
|------------------|---------|-----|--|
| Year long course | 6th-8th | N/A | Pre Algebra or demonstrated proficiency of topics covered in Pre Algebra |
|------------------|---------|-----|--|

This course introduces students to solving problems by using variables to represent unknown quantities and then solving for those unknown quantities by writing equations and inequalities. Course topics include a review of the order of operations with integers, solving equations, and simplifying expressions. Students will

work extensively on solving and graphing linear and quadratic equations and inequalities. Additional topics will include rules of exponents, factors and polynomials, polynomial fractions, the Cartesian coordinate plane, radicals, and the quadratic formula. Students who successfully complete this course with an 80% or higher will be prepared to move on to Geometry.

NOTE: *If your student is in Geometry or higher, please refer to the HS Planning Guide for course descriptions*

Science

| | | | |
|------------------|-----|-----|------------------------|
| Science 6 | | | STEMMS036S1/S2 |
| Year long course | 6th | N/A | Required course |

The sixth grade science course provides students with an understanding of the general concepts of earth science. It is a full year course in which students study the structure and composition of space and earth sciences including astronomy, earth’s atmosphere, oceans, surface waters, landmasses, and interior. Students investigate the dynamics of the earth’s changing surface and the role that energy plays in earth systems. Students learn how the earth’s ecological systems support life through environmental relationships and natural cycles. Students develop an understanding of ecological resources and wildlife conservation. Students relate the flow of matter and energy within an ecosystem. Through “hands-on” investigation, students learn to conduct scientific investigations, think scientifically, and use scientific tools and technologies. Students learn to communicate scientific information and processes, and understand how developments in science and technology affect society and the environment. The depth and breadth of concepts are determined by course length.

-OR-

| | | | |
|-----------------------|-----|-----|------------------------|
| Science 6 Accelerated | | | STEMMS036HS1/S2 |
| Year long course | 6th | N/A | Required course |

In this honors course, greater emphasis is placed on scientific inquiry and methods. The material and pacing of the course is accelerated, as well.

| | | | |
|------------------|-----|-----|------------------------|
| Science 7 | | | STEMMS037S1/S2 |
| Year long course | 7th | N/A | Required course |

The seventh grade science course provides students with a general understanding of the concepts of life science. Students investigate the evolutionary structure, function, and processes of living things. Students learn how cells divide, grow, and convert matter and energy to sustain life. They learn how organisms reproduce and pass hereditary characteristics from one generation to the next. Students investigate similarities and differences in living organisms, and how living things have changed over time. Students learn about the human body systems and factors that are responsible for maintaining human health. Students learn to conduct scientific investigations, think scientifically, and use scientific tools and technologies. Students learn to communicate scientific information and processes, and understand how developments in science and technology affect society and the environment.

-OR-

Science 7 Accelerated

STEMMS037HS1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 7th | N/A | Required course |
|------------------|-----|-----|------------------------|

In this honors course, greater emphasis is placed on scientific inquiry and methods. The material and pacing of the course is accelerated, as well.

Science 8

STEMMS038S1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 8th | N/A | Required course |
|------------------|-----|-----|------------------------|

This course is designed to introduce students to topics dealing with the non-living, natural world. Physical science is generally divided into two main categories: Chemistry and Physics. Topics to be examined in Chemistry include properties of substances, chemical changes, matter, and the structure of matter. Topics to be examined in Physics include Mechanics (motion, force and energy) waves and electromagnetism.

-OR-

Science 8 Accelerated

STEMMS038HS1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 8th | N/A | Required course |
|------------------|-----|-----|------------------------|

In this honors course greater emphasis is placed on scientific inquiry and methods. The material and pacing of the course is accelerated as well.

Scientific Methods

STEMMS0313

| | | | |
|-----------------|---------|-----|----------|
| Semester Course | 6th-8th | N/A | Elective |
|-----------------|---------|-----|----------|

This course is designed to give students outside of 6th grade or 6th graders who would like to devote additional time an opportunity to partake in the process of determining a real-world problem, completing research, designing an experiment to improve this problem, testing the designed experiment, and sharing the collected results. The overall goal of the class will be to send students to the Denver Metro Regional Science Fair and beyond.

Social Studies

Social Studies 6

STEMMS046S1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 6th | N/A | Required course |
|------------------|-----|-----|------------------------|

Following the Core Knowledge sequence, the first semester of sixth grade History focuses on world geography, early humans and the ancient civilizations of Mesopotamia, Egypt, India, Greece and Rome. Students analyze the geographic, political, economic, religious and social structure of each early civilization as well their everyday lives, problems and accomplishments. Students analyze the interactions among the

various cultures, the enduring contributions and the link, despite time, between the contemporary and ancient worlds. During the second semester, students study early modern history, including the European Enlightenment, the French Revolution, Latin American Revolutions, the Industrial Revolution and Immigration and Urbanization. Cross-curricular integration projects with Science, Technology, Engineering, Math and Language Arts are emphasized.

-OR-

Social Studies 6 Accelerated

STEMMS046HS1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 6th | N/A | Required course |
|------------------|-----|-----|------------------------|

Following the Core Knowledge sequence, the first semester of sixth grade Honors History focuses on world geography, early humans and the ancient civilizations of Mesopotamia, Egypt, India, Greece and Rome. Students analyze the geographic, political, economic, religious and social structure of each early civilization as well their everyday lives, problems and accomplishments. Students analyze the interactions among the various cultures, the enduring contributions and the link, despite time, between the contemporary and ancient worlds. During the second semester, students study early modern history, including the European Enlightenment, the French Revolution, Latin American Revolutions, the Industrial Revolution and Immigration and Urbanization. The Honors-level course provides a more accelerated, in-depth analysis of the topics, with a focus on primary source reading, historical research and essay writing, and at least one historical novel. Cross-curricular integration projects with Science, Technology, Engineering, Math and Language Arts are emphasized.

Social Studies 7

STEMMS047S1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 7th | N/A | Required course |
|------------------|-----|-----|------------------------|

Following the Core Knowledge sequence, 7th grade History will cover the period of history surrounding the United States from the late nineteenth century until the end of WWII. The following topics and their influences on modern society will be analyzed: U.S. Geography, The rise of the United States as an up and coming world superpower, the political and military forces that created WWI and the Russian Revolution, the Roaring Twenties, the Great Depression, and the New Deal, the rise of totalitarianism in Europe and the events and causes of WWII through 1945. Cross-curricular integration projects with Science, Technology, Engineering, Math and Language Arts are emphasized.

-OR-

Social Studies 7 Accelerated

STEMMS047HS1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 7th | N/A | Required course |
|------------------|-----|-----|------------------------|

Following the Core Knowledge sequence, 7th grade Honors History will cover the period of history surrounding the United States from the late nineteenth century until the end of WWII. The following topics and their influences on modern society will be analyzed: U.S. Geography, The rise of the United States as an up and coming world superpower, the political and military forces that created WWI and the Russian Revolution, the Roaring Twenties, the Great Depression, and the New Deal, the rise of totalitarianism in Europe and the events and causes of WWII through 1945. The Honors-level course provides a more accelerated, in-depth analysis of the topics, with a focus on primary source reading, historical research and essay writing, and at least one historical novel. Cross-curricular integration projects with Science,

Technology, Engineering, Math and Language Arts are emphasized

Social Studies 8

STEMMS048S1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 8th | N/A | Required course |
|------------------|-----|-----|------------------------|

Following the Core Knowledge sequence, 8th grade History will cover the period of history surrounding the United States from the end of WWII through the present day. The following topics and their influences upon modern society will be analyzed: Geography of N. America: Canada and Mexico, the origin and structure of the U.S. Constitution, the decline of European Colonialism and its effects on the world, the Cold War, the American Civil Rights Movement, Vietnam: War, Peace, and Protest, The Middle East and Oil Politics, the end of the Cold War, and the War on Terror (time permitting). Cross-curricular integration projects with Science, Technology, Engineering, Math and Language Arts are emphasized.

-OR-

Social Studies 8 Accelerated

STEMMS048HS1/S2

| | | | |
|------------------|-----|-----|------------------------|
| Year long course | 8th | N/A | Required course |
|------------------|-----|-----|------------------------|

Following the Core Knowledge sequence, 8th grade Honors History will cover the period of history surrounding the United States from the end of WWII through the present day. The following topics and their influences on modern society will be analyzed: Geography of N. America: Canada and Mexico, the origin and structure of the U.S. Constitution, the decline of European Colonialism and its effects on the world, the Cold War, the American Civil Rights Movement, Vietnam: War, Peace, and Protest, The Middle East and Oil Politics, the end of the Cold War, and the War on Terror (time permitting). The Honors-level course provides a more accelerated, in-depth analysis of the topics, with a focus on primary source reading, historical research and essay writing, and at least one historical novel. Cross-curricular integration projects with Science, Technology, Engineering, Math and Language Arts are emphasized.

Computer Science

****Note: One semester of Computer Science is required each year.**

6th Grade Computer Science

STEMMS106

| | | | |
|----------------------|-----|-----|------------------------|
| Semester long course | 6th | N/A | Required course |
|----------------------|-----|-----|------------------------|

The primary goal of this course is to provide students with a variety of computer skills that will be useful throughout the remainder of their education and into their lives beyond school. An emphasis is placed on developing high-level thinking skills and creating knowledge and skills that will be used in everyday lives inside and outside of the educational setting. Computer skills and knowledge such as keyboarding, word processing, spreadsheets, presentation software, hardware, 3D modeling software, and programming will be covered in this course.

7th Grade Computer Science

STEMMS107

| | | | |
|----------------------|-----|-----|------------------------|
| Semester long course | 7th | N/A | Required course |
|----------------------|-----|-----|------------------------|

The primary goal of this course is to provide students with a variety of computer skills that will be useful throughout the remainder of their education and into their lives beyond school. An emphasis is placed on

developing high-level thinking skills and creating knowledge and skills that will be used in everyday lives inside and outside of the educational setting. Computer skills and knowledge such as computer hardware, web design (HTML5 and CSS3), 2-D image manipulation, 3-D modeling, and more will be covered in this course.

MS Networking and Cybersecurity

STEMMS109

| | | | |
|----------------------|-----|-----|------------------------|
| Semester long course | 8th | N/A | Required course |
|----------------------|-----|-----|------------------------|

In Introduction to Networking and Cyber Security, students will learn a wide gamut of IT skills such as the basics of networking and network security, operating system troubleshooting, scripting, cyberethics and safety. In addition to the technical skills, students will be learning the soft skills necessary to effectively communicate in the digital age and assess risks. Lastly, students will learn about what cyber careers are available. This course requires completion of MS Computer Science I and MS Computer Science II.

-OR-

MS Pi's and Python

STEMMS1012

| | | | |
|----------------------|-----|-----|------------------------|
| Semester long course | 8th | N/A | Required course |
|----------------------|-----|-----|------------------------|

This semester long course is open to 8th graders, who are interested in working with Linux, open source, and the Raspberry Pi. We will endeavor to develop real world system skills through building Pi based projects, learning virtualization and operating system concepts while applying that knowledge through bash and python scripts to the Internet of Things. Please note this will be a very hands-on course, you will be required to work in teams for some of the projects.

Engineering

****Note: One semester of Engineering is required each year.**

Engineering 6

STEMMS216

| | | | |
|----------------------|-----|-----|-----|
| Semester long course | 6th | N/A | N/A |
|----------------------|-----|-----|-----|

This is a hands-on inquiry based and project driven class. Students will learn how to utilize the Engineering Design Process, the process of engineering, to design and build their projects. While learning about different materials and processes, students will also learn how to safely choose and operate the correct tool or machine for the job at hand. Students will learn to document their projects and solutions in an Engineering Notebook, and produce a presentation for each project.

Engineering 7

STEMMS217

| | | | |
|----------------------|-----|-----|-----|
| Semester long course | 7th | N/A | N/A |
|----------------------|-----|-----|-----|

This is a hands-on inquiry based and problem/project driven class. Students will learn how to utilize the Engineering Design Process, critical thinking, and problem solving skills, to design and build projects. While learning about different materials and processes, students will also learn how to safely choose and operate the correct tool or machine for the job at hand. Students will learn to document their projects and solutions in an Engineering Notebook, and produce a presentation for each project. Students will learn about technical sketching and drawing, how to apply mathematical principles to their design, and then use various tools and materials to bring their 3D projects to life. Projects may include, but are not limited to: Simple Machines and mechanisms, Mousetrap and Rubber band powered vehicles, Catapults, and CO2 Dragsters

Engineering 8

STEMMS218

| | | | |
|----------------------|-----|-----|-----|
| Semester long course | 8th | N/A | N/A |
|----------------------|-----|-----|-----|

Students will learn about technical sketching and drawing, how to apply mathematical principles to their design, and then use various tools and materials to bring their 3D projects to life. This is a hands-on inquiry based and problem/project driven class. Students will learn how to utilize the Engineering Design Process, critical thinking, and problem solving skills, to design and build projects. While learning about different materials and processes, students will also learn how to safely choose and operate the correct tool or machine for the job at hand. Students will learn to document their projects and solutions in an Engineering Notebook, and produce a presentation for each project.

TSA (Technology Student Association)

STEMMS2110

| | | | |
|------------------|---------|-----|-----|
| Year long course | 7th-8th | TBD | N/A |
|------------------|---------|-----|-----|

Students will learn about technical sketching and drawing, how to apply mathematical principles to their design, and then use various tools and materials to bring their 3D projects to life. This is a hands-on inquiry based and problem/project driven class. Students will learn how to utilize the Engineering Design Process, critical thinking, and students will also learn how to safely choose and operate the correct tool or machine for the job at hand. Students will learn to document their projects and solutions in an Engineering Notebook, and produce a presentation for each project. problem solving skills, to design and build projects. While learning about different materials and processes.

MS Robotics

STEMMS219

| | | | |
|----------------------|---------|-----|-----|
| Semester long course | 6th-8th | N/A | N/A |
|----------------------|---------|-----|-----|

Students will learn to program, design and build a robot to meet specific challenges. Students will generally work in groups, and be expected to collaborate with others in their group, as well as share ideas and methods with other groups as well. Most challenges will be based on FLL (First Lego League) competitions. This is a great preparation for entry in FLL, and we will often form competitive teams from this class.

MS Advanced Robotics

STEMMS2111

| | | | |
|----------------------|---------|-----|-----|
| Semester long course | 7th-8th | N/A | N/A |
|----------------------|---------|-----|-----|

Students will learn to program, design and build a robot to meet specific challenges. Students will generally work in groups, and be expected to collaborate with others in their group, as well as share ideas and methods with other groups as well. Most challenges will be based on various competitions. This is a great preparation for entry into a variety of competitions, and we will often form competitive teams from this class.

Physical Education

6th Grade Physical Education

STEMMS086

| | | | |
|----------------------|-----|-----|-----|
| Semester long course | 6th | N/A | N/A |
|----------------------|-----|-----|-----|

This two component class includes physical education and health. In physical education, students have the opportunity for physical development in the areas of strength, flexibility, coordination, endurance, balance, agility, range of motion, and power. Students are introduced to the fundamentals of team and individual sports, which include skills, rules, and game strategy. This diverse program allows students the opportunity to develop individual skills and to be introduced to new, enjoyable experiences for lifelong physical fitness and well-being.

The health curriculum content provides students with the information needed to make healthy decisions.

Middle School Physical Education

STEMMS087

| | | | |
|----------------------|---------|-----|-----|
| Semester long course | 7th-8th | N/A | N/A |
|----------------------|---------|-----|-----|

This two component class includes physical education and health. In physical education, students have the opportunity for physical development in the areas of strength, flexibility, coordination, endurance, balance, agility, range of motion, and power. Students are introduced to the fundamentals of team and individual sports, which include skills, rules, and game strategy. This diverse program allows students the opportunity to develop individual skills and to be introduced to new, enjoyable experiences for lifelong physical fitness and well-being. The health curriculum content provides students with the information needed to make healthy decisions.

Middle School Health

STEMMS088

| | | | |
|----------------------|---------|-----|-----|
| Semester long course | 6th-8th | N/A | N/A |
|----------------------|---------|-----|-----|

Topics covered within Health Education courses may vary widely, but typically include personal health (nutrition, mental health and stress management, drug/alcohol abuse prevention, disease prevention, and first aid) and consumer health issues. The courses may also include brief studies of environmental health, personal development, and/or community resources.

World Language

French 1A

STEMMS066FS1/S2

| | | | |
|------------------|-----|-----|-----|
| Year long course | 7th | N/A | N/A |
|------------------|-----|-----|-----|

Students will learn the basic skills of speaking, listening, reading and writings as well as cultural information. Students will study present, future and past tense verb conjugations, vocabulary, gender of nouns, adjective use and sentence structure. This course is designed to present students with the solid knowledge base necessary at intermediate and advanced language levels.

French 1B

STEMMS067FS1/S2

| | | | |
|------------------|---------|-----|-----------|
| Year long course | 7th-8th | N/A | French 1A |
|------------------|---------|-----|-----------|

Students will continue to learn the grammatical structures, which will allow them to communicate on a simple level in the foreign language. The students will begin to use the past tense and talk and write about events that have already happened. The study of vocabulary continues to be of utmost importance through all levels of language study. Students will practice all skills through speaking, reading, writing, and listening.

Chinese 1A

STEMMS066CS1/S2

| | | | |
|------------------|-----|-----|-----|
| Year long course | 7th | N/A | N/A |
|------------------|-----|-----|-----|

Chinese (prior-to-secondary) courses introduce and then extend students' skills in speaking, reading, writing, and comprehending the Chinese language and students' knowledge of Chinese-speaking cultures. Initial courses emphasize grammar and syntax, vocabulary, and vocal tones so that students have an understanding of the language and its rules. Later courses advance students' knowledge and ability to

express themselves beyond basic communication (and to understand others, either in a written or verbal format), seeking to enable students to express more complex concepts, in different tenses, and to do so more easily. Students usually explore the customs, history, and art forms of Chinese-speaking people to deepen their understanding of the culture(s).

Chinese 1B

STEMMS067CS1/S2

| | | | |
|------------------|---------|-----|------------|
| Year long course | 7th-8th | N/A | Chinese 1A |
|------------------|---------|-----|------------|

Chinese (prior-to-secondary) courses introduce and then extend students' skills in speaking, reading, writing, and comprehending the Chinese language and students' knowledge of Chinese-speaking cultures. Initial courses emphasize grammar and syntax, vocabulary, and vocal tones so that students have an understanding of the language and its rules. Later courses advance students' knowledge and ability to express themselves beyond basic communication (and to understand others, either in a written or verbal format), seeking to enable students to express more complex concepts, in different tenses, and to do so more easily. Students usually explore the customs, history, and art forms of Chinese-speaking people to deepen their understanding of the culture(s).

Spanish 1A

STEMMS066SS1/S2

| | | | |
|------------------|-----|-----|-----|
| Year long course | 7th | N/A | N/A |
|------------------|-----|-----|-----|

This course will prepare students to speak, read, write, and listen in the chosen language as well as learning cultural information. Students will study simple grammar structure, which includes present tense verb conjugations, gender of nouns, adjectives use and sentence structure. All skills will be practiced through speaking, writing, listening and reading.

Spanish 1B

STEMMS067SS1/S2

| | | | |
|------------------|---------|-----|------------|
| Year long course | 7th-8th | N/A | Spanish 1A |
|------------------|---------|-----|------------|

Students will continue to learn the grammatical structures that will allow them to communicate on a simple level in the foreign language. The students will begin to use the past tense and talk and write about events that have already happened. The study of vocabulary continues to be of utmost importance through all the levels of language study. Students will practice all skills through speaking, reading, writing and listening.

MS Grade World Language

STEMMS068

| | | | |
|-----------------|---------|-----|-----|
| Semester course | 6th-8th | N/A | N/A |
|-----------------|---------|-----|-----|

The goals of this course are to introduce students to foreign languages and cultures to motivate them to pursue further language study. This course will be conducted in English, with some basic communication in the Foreign Language. The course will focus on the development of listening and speaking skills and on cultural awareness. The course will follow a natural sequence of language learning : understanding, speaking, reading, writing. The primary stress is on understanding and speaking. The level of proficiency attained by the students will be directly related to the amount of time they will spend using each foreign language. The program will be developed through the lens of art, music and culture of all countries where the targeted languages are spoken.

Fine Arts

6th Grade Art

STEMMS056

| | | | |
|----------------------|-----|-----|-----|
| Semester long course | 6th | N/A | N/A |
|----------------------|-----|-----|-----|

The class will focus on using mixed media to create works of art. Mixed media is essentially the use of two or more art mediums in a single work of art. Students will experiment with charcoal, pencil, paint, printmaking and collage. Emphasis will be placed on risk taking in art making and experimentation. Class discussions will be held on the history of art and art as a form of self-expression.

7th Grade Art

STEMMS057

| | | | |
|----------------------|-----|-----|-----|
| Semester long course | 7th | N/A | N/A |
|----------------------|-----|-----|-----|

The class will begin with observational drawing skills and techniques. As we progress we will include painting techniques. The major emphasis of the class focuses on the skills and knowledge required to draw well. We will build on those skills and explore creative and inventive ways to express ourselves using drawing and painting mediums. Students will learn the history of drawing and painting, and discuss how society influences art and how art is used as visual communication.

8th Grade Art

STEMMS058

| | | | |
|----------------------|-----|-----|-----|
| Semester long course | 8th | N/A | N/A |
|----------------------|-----|-----|-----|

Students will explore the mediums of painting, drawing, sculpture, graphic design and digital photography. The course is designed as an introduction to the high school curriculum. As with all art classes at STEM, Creativity, problem solving and experimentation are areas of focus. Students will use the elements and principles of design to analyze and evaluate their work and the work of their peers, research historical art and create visual forms of self-expression.

MS Theater I

STEMMS226

| | | | |
|----------------------|---------|-----|-----|
| Semester long course | 6th-8th | N/A | N/A |
|----------------------|---------|-----|-----|

A comprehensive beginning theater class. The purpose of the course is to give students an overview of Theater in general. We learn the tools of theater in mind, body, and voice which include the following: Scene work, monologues, improvisation, and pantomime. Major emphasis of the class is on developing beginning acting skills, teamwork, and self esteem.

MS Theater II

STEMMS229

| | | | |
|----------------------|---------|-----|--------------|
| Semester long course | 6th-8th | N/A | MS Theater I |
|----------------------|---------|-----|--------------|

Theater II helps students develop experience and skill in one or more aspects of theatrical production. Advanced courses concentrate on extending and refining dramatic technique, by expanding students' exposure to different types of theatrical techniques and traditions and increasing their participation in public productions. Theater II Curriculum is performance based. It has been developed to expand and deepen the students' skills as an artist. They will do so by building on material covered in Theater I curriculum, with units in: Character Analysis, Monologue Analysis, and writing, Shakespeare Performance, and Design. The curriculum will culminate in a performance.

MS Theater Performance

STEMMS230

| | | | |
|----------------------|---------|-----|---------------------|
| Semester long course | 6th-8th | N/A | MS Theater I and II |
|----------------------|---------|-----|---------------------|

Theater Performance courses provide students with experience and skill development in one or more aspects of theatrical production, by allowing them to concentrate on acting and performance skills. Introductory courses explore fundamentals, while advanced courses extend and refine technique, expand students' exposure to

different types of theatrical craft and traditions, and increase their participation in public productions.

Beginner Band

STEMMS0521S1/S2

| | | | |
|------------------|---------|-----|---|
| Year long course | 6th-8th | N/A | Student must have own instrument |
|------------------|---------|-----|---|

This year-long, non-repeatable course is an introduction to performing music in the concert band setting for students with limited or no musical experience. This is a great follow-up course to the Fundamentals of Music class. Instruments taught in this course are flute, clarinet, trumpet, trombone, baritone, and percussion, which can be expanded on in subsequent intermediate and advanced instrumental ensembles. **STEM does not supply instruments** but our instructor will help you determine the best option for obtaining the required materials before the year begins. Instrument maintenance, playing technique, and musical theory are all taught as you perform a variety of music with a group. We will perform as a band during concerts throughout the year.

MS Intermediate Concert Ensemble

STEMMS0522S1/S2

| | | | |
|------------------|---------|-----|--|
| Year long course | 6th-8th | N/A | Audition for appropriate placement is required |
|------------------|---------|-----|--|

This year-long repeatable course is the intermediary between STEM's Beginner Band/Orchestra courses and the Advanced Symphonic Ensemble. We will perform classical transcriptions and arrangements of popular music for multiple concerts and school events. Members must be able to perform a major scale of their choice with characteristic tone, a portion of the chromatic scale, and sightread notated music that feature rhythms such as half notes, quarter notes, quarter rests, and eighth notes. Instrumentation is for standard symphonic orchestra, including all winds, strings, and orchestral percussion.

Choir

STEMMS0515S1/S2

| | | | |
|----------------------|---------|-----|-----|
| Semester long course | 6th-8th | N/A | N/A |
|----------------------|---------|-----|-----|

- Students learn proper breath support and vocal production
- Students perform at concerts and events
- Students learn to read music as it applies to vocal scores
- Students write, produce and perform an original musical

MS Music Fundamentals

STEMMS0513

| | | | |
|----------------------|---------|-----|-----|
| Semester long course | 6th-8th | N/A | N/A |
|----------------------|---------|-----|-----|

Students will grow their appreciation of music both personally and in human culture. Listening, recreating, improvising, and writing are essential activities in understanding the fundamental elements of music and their role in the development of our culture. Singing, moving, playing instruments and using a variety of music technology will deepen understanding of how rhythm, pitch, dynamics, tempo, and timbre develop tonality, melody, harmony, form and texture, and how those secondary elements are used to create style and genre. Students will be able to identify and demonstrate those elements through discussion, writing, and performance, and be able to connect those technical elements to cultural significance.

MS Music Production

STEMMS0514

| | | | |
|----------------------|---------|-----|---|
| Semester long course | 6th-8th | N/A | MS Music Fundamentals is highly recommended |
|----------------------|---------|-----|---|

This advanced semester-long (Spring) repeatable course focuses on formal composition and songwriting,

utilizing two powerful industry-standard pieces of music software (Sibelius for notation and Ableton for recording and production). Other skills built are live recording, sound design, and music theory as an avenue to self expression and creation. This follow-up to any beginner music class is great for those interested in exploring the technological and theoretical aspects of music. In order to succeed in this class, you must be able to describe/demonstrate: basic harmonic progressions, the basics of rhythmic notation, musical form (in both classical and popular styles of writing), and be able to create simple melodies vocally or instrumentally. You will produce multiple pieces of music and you will build skills that allow you to more fluently express yourself through musical creation.

MS Intermediate Concert Ensemble

STEMMS0522S1/S2

| | | | |
|------------------|---------|-----|---|
| Year long course | 6th-8th | N/A | Audition and signature of music teacher is required |
|------------------|---------|-----|---|

This year-long repeatable course is the intermediary between STEM's Beginner Band/Orchestra courses and the Advanced Symphonic Ensemble. We will perform classical transcriptions and arrangements of popular music for multiple concerts and school events. Members must be able to perform a major scale of their choice with characteristic tone, a portion of the chromatic scale, and sightread notated music that feature rhythms such as half notes, quarter notes, quarter rests, and eighth notes. Instrumentation is for standard symphonic orchestra, including all winds, strings, and orchestral percussion.

General Electives

Real World Economics

STEMMS049

| | | | |
|----------------------|----------------------------------|-----|-----|
| Semester long course | 6th-8th (can only be taken once) | N/A | N/A |
|----------------------|----------------------------------|-----|-----|

In this course, students will have an opportunity to explore in depth how the world economy works, and will have the opportunity to develop a better understanding of interdependence by participating in a simulated world economy at the Young Americans Center for Financial Education's International Towne. Furthermore, students will learn about the ins and outs of checking and savings accounts, as well as the positive and negative ramifications of using credit and how to manage their own money. Students will also learn how to complete job applications, write a resume, and have the opportunity to participate in a job interview for their positions at International Towne.

MS Psychology

STEMMS0413

| | | | |
|----------------------|---------------|-----|-----|
| Semester long course | 6th, 7th, 8th | N/A | N/A |
|----------------------|---------------|-----|-----|

This course provides an introduction to the world of psychology based off of the American Psychological Association's National Standards. Psychology is the scientific study of the human mind and its functions, especially those affecting behavior in a given context. The following domains will be covered in this course; scientific inquiry, biopsychology, development and learning, sociocultural context, cognition, individual variations and applications of psychological science. This is a semester-long course that will focus on the development of scientific attitudes and skills, including critical thinking, problem solving, and an appreciation for scientific methodology.

Math Explorations and Problem Solving

STEMMS0213

| | | | |
|----------------------|---------|-----|--|
| Semester long course | 6th-8th | N/A | Student must be enrolled in Pre-Algebra |
|----------------------|---------|-----|--|

| | | | |
|--|--|--|-----------------------------------|
| | | | or higher level math class |
|--|--|--|-----------------------------------|

This math elective is designed for middle school students who wish to analyze and solve challenging mathematics problems. Through this course you will have the opportunity to delve deeper into math topics not often covered in most middle and/or high school courses. The overall goal is to build an appreciation of mathematics by exploring high-level math topics while solving and analyzing national level mathematical competition problems. We will use MATHCOUNTS as our main source of problems. The open-ended curriculum allows for a student centered approach. The only requirement is that you must love math!

MS Study Hall

STEMMS221S1/S2

| | | | |
|----------------------|---------|-----|-----------------|
| Semester long course | 6th-8th | N/A | Required |
|----------------------|---------|-----|-----------------|

Supervised class period devoted to completing assigned class work or projects

MS Math Enrichment

STEMMS228

| | | | |
|----------------------|---------|-----|--|
| Semester long course | 6th-8th | N/A | Teacher Recommendation Required |
|----------------------|---------|-----|--|

This is a course designed to help students who have historically struggled in their math classes. This course will provide extra support for any lagging skills, in addition to serving as a place for students to get help in their core math class.

MS English Enrichment

STEMMS227

| | | | |
|----------------------|---------|-----|--|
| Semester long course | 6th-8th | N/A | Teacher Recommendation Required |
|----------------------|---------|-----|--|

This course is designed to help students strengthen their literacy skills. Students will work on focused reading and writing skills in small groups, as well as receive additional support on existing literacy work in all classes. Students can take the course with a teacher referral.

MS Sources of Strength

STEMMS22107 S1/S2

| | | | |
|----------------------|---------|-----|-----|
| Semester long course | 6th-8th | N/A | N/A |
|----------------------|---------|-----|-----|

Sources of Strength is one of the nation's most rigorously researched peer leader programs and is presently on SAMHSA's National Registry of Evidence-based Programs and Practices - the nation's highest level of prevention programs. Through this course, students will be trained to be Sources of Strength Peer Leaders. Students will gain knowledge in the areas of: social/emotional health, peer Leadership, mentoring, activity/event planning and budgeting, and identifying warning signs of emotional crisis including risk of suicide. Students will plan and implement school-wide campaigns to bring awareness to positive support systems available to students at home, in their school, and in the community.

Courses Not Currently Offered - [Click here](#)