



Course Guide

2019-2020

Updated March 2019

Table of Contents

MSA Graduation Requirements	3
Typical MSA High School Course Progression	4
Student Transcripts	4
High School Credits Earned in Middle School	4
Withdrawal from a course: W	5
Repeat Course: R	5
Credits	5
Advanced Placement (AP) Courses	6
Current AP Courses Offered at MSA	6
Post Secondary Educational Options (PSEO) Courses	6
Course Equivalencies	6
Elective Courses	7
Enrichment Courses	7
Freshman Seminar (for new ninth grade students)	7
Credit Recovery	8
Course Descriptions	10
English	10
Required Courses	10
Enrichment & Elective Courses	12
Mathematics	14
Required Courses	15
Enrichment & Elective Courses	16
Science	18
Required Courses	18
Enrichment & Elective Courses	19
Social Studies	23
Required Courses	23
Enrichment & Elective Courses	25
Health & Physical Education	27
Required Courses	27
Fine and Visual Arts	28
Performing Arts	28
Visual Arts	30
Spanish	33
Required Courses	33
Elective Courses	35
Spanish Flowchart	36

MSA Graduation Requirements

Students complete the Minnesota academic standards by taking a core course of study that equips them with the knowledge and skills they need for success in post-secondary education, highly skilled work, and civic life. In order to graduate, MSA students must complete the required MSA subject specific requirements as well as a minimum of 21.5 total credits to meet Minnesota state requirements.

Subject	MN State Graduation Requirements	MSA Graduation Requirements
English	4 Credits	4 credits which must include: <ul style="list-style-type: none"> ● Literature and Composition ● World/British Literature
		Choose 2 from the following: <ul style="list-style-type: none"> ● American Literature ● AP Literature & Composition ● Research Writing (1 semester)/Composition (1 semester)
Math	3 credits, including algebra II, geometry, statistics and probability sufficient to satisfy the standards.	3 credits which must include: <ul style="list-style-type: none"> ● Progression through Calculus
Science	3 credits of Science, including a biology credit.	3 credits which must include: <ul style="list-style-type: none"> ● Biology OR AP Biology ● Chemistry OR AP Chemistry ● Physics OR AP Physics
Social Studies	3½ credits of social studies , including U.S. history, geography, government and citizenship, world history and economics.	4 credits which must include: <ul style="list-style-type: none"> ● Ancient World History and Geography ● Modern World History and Human Geography ● American History ● Political Science (semester)/ Introduction to Economics (semester)
Fine/Visual Arts	1 credit	1 credit (1 year)
Foreign Language	Not Required ➤ Many colleges/universities look for at least 2 years of a foreign language.	Progression through Spanish Flowchart based on placement level and grade of enrollment to MSA.
Health/P.E.	Not required	1 credit (1 year) <ul style="list-style-type: none"> ● 1 semester each of Health and P.E.
Electives	7 elective credits	<i>Please see the definition of elective courses on page 6.</i>

Typical MSA High School Course Progression

➤ Can vary based on course placement level and year of enrollment at MSA.

	9th grade	10th grade	11th grade	12th grade
English	Literature & Composition	British & World Literature	American Literature Research Writing/Composition	
Math	Algebra III W/Geometry & Trig	Pre-Calculus	Calculus	
Science	Biology	Chemistry	Physics	
History	Ancient World History & Geography	Modern World History & Human Geography	American History Political Science/ Introduction to Economics	
Spanish	Spanish III	Spanish IV	Spanish V	
Phy Ed /Health	Physical Education/Health			
Fine/Visual Arts	1.000 credit of Fine/Visual Arts required by graduation.			
Elective Courses	Additional elective courses may be required in order to reach the 21.5 total credit graduation requirement.			

Student Transcripts

High School Credits Earned in Middle School

Any high school class taken in middle school will be added to a student's high school transcript. High School credit will be earned for these courses, but the final grade will not be included in the student's high school GPA. These courses will also be listed on the middle school transcript. Below are courses that will be added to the high school transcript when taken in middle school:

Spanish II

High school Spanish II is taken as an 8th grade student if the student started sixth grade in Spanish 1A and passed both Spanish 1A in sixth grade and Spanish 1B in seventh grade.

Algebra III

Algebra III is typically a ninth grade class if the student passed the progression of math classes starting in sixth grade in Pre-algebra. Approximately twenty-five percent of sixth grade students begin in Algebra I and progress to Algebra III in eighth grade. Students who take Algebra III in middle school will have this high school class added to their high school transcript.

Withdrawal from a course: W

Withdrawing from a class is always a difficult decision. Middle school and high school students must withdraw within the first ten school days to have no penalty. Please read the important information below for students who are considering withdrawing from an enrichment course in middle school or any course in high school:

Withdrawing from a semester or year-long course		
<i>Timeline</i>	<i>Drop or Withdrawal</i>	<i>Letter mark on transcript</i>
Day 0-10	Student is dropped from the course	<ul style="list-style-type: none">• No letter grade• No list of course on transcript
Day 11- end of week 7	Student is withdrawn from the course	<ul style="list-style-type: none">• W (withdrawn) is issued for the course• Course will be listed on the transcript with “W” for withdrawn
Week 8-End of semester	Student is issued a grade for the course and withdrawn	<ul style="list-style-type: none">• Student is issued the current grade on the exact date of notification to withdraw.• Student will be issued a semester grade, and if a year-long class, will be given a “W” for withdrawn for semester two.

Repeat Course: R

Students who choose to repeat a class can do so following this criteria upon completion of the course:

1. The same course will appear twice on the transcript.
2. Whichever course has the better grade will be given the letter grade.
3. The course that has the worse grade will be issued an R for repeat. No credit will be given for the course with a R for repeat.

Credits

All year-long courses which a student passes earn the student 1.000 credit. Semester long courses earn the student 0.5 credits. Courses that earn 0.5 credits may be offered every day for one semester or a full-year, alternating days. Most MSA courses are year-long courses, unless stated otherwise.

Additional Course Options

Advanced Placement (AP) Courses

Advanced Placement (AP) courses at MSA are not given any extra credit value for the course. Year long AP courses earn 1 credit. Advanced Placement is a program run by the College Board (the makers of the SAT) that allows you to take courses at your high school, which can earn you college credit and/or qualify you for more advanced classes when you begin college. When you take an AP course, you have the opportunity to take the AP Exam in that subject. AP Exams are given in May. They're two- to three-hour tests made up of multiple-choice and free-response questions. The exams are scored on a scale of 1 to 5.

Current AP Courses Offered at MSA

• AP Biology	• AP Chemistry	• AP Physics
• AP Calculus AB	• AP Calculus BC	• AP Statistics
• AP English Literature & Composition	• AP Spanish Language & Culture	• AP Psychology
• AP Human Geography	• AP Studio Art	

Post Secondary Educational Options (PSEO) Courses

PSEO courses are given 1.000 credit for a semester-long course. PSEO grades, credits, and courses will be added to the student's high school transcript and calculated into the GPA. Postsecondary Enrollment Options (PSEO) is a program that allows 10th-, 11th- and 12th-grade students to earn both high school and college credit while still in high school, through enrollment in and successful completion of college-level, nonsectarian courses at eligible participating postsecondary institutions. Most PSEO courses are offered on the campus of the postsecondary institution; some courses are offered online. Each participating college or university sets its own requirements for enrollment into the PSEO courses.

Course Equivalencies

Specific AP and PSEO courses can be taken to meet MSA graduation requirements. Some AP courses can be taken in place of a general course at MSA (ex. AP Biology in place of Biology). Please contact your counselor to learn more on which AP courses and PSEO courses are equivalent to the general MSA courses that are needed to meet graduation requirements.

Elective Courses

Any course taken above the graduation required courses is considered an elective course. Some elective courses are also supplementary courses which allow students to explore their interests and passions in more depth. Students in grades 9-12 have the opportunity to choose from several elective course options in various subject areas, including AP courses.

Enrichment Courses

In grades 6-8, students may be placed in enrichment courses. Enrichment courses offer supplemental content and materials that often complements the core curriculum in our required classes. Students greatly benefit from the additional experience, skills, and knowledge they gain from enrichment classes. These benefits may aid students as they work towards mastery in their core subjects. Students are not necessarily able to select specific enrichment courses but may be placed in these courses based on scheduling and academic needs.

Freshman Seminar (for new ninth grade students)

This course is designed for new high school students to MSA. It will assist the student in assimilating into the MSA high school by providing support to the student in their academic courses. Essential skills to being successful at MSA will be developed and enhanced while students learn the school's culture and expectations.

- * Some AP courses and all elective courses are dependent on student registration numbers. If there are not enough students who register for a course, the course may be cancelled.*

Credit Recovery

Credit Recovery is a term used to describe a wide variety of educational strategies and programs that give high school students who may have failed a course the opportunity to redo a course or retake a course, sometimes through alternative means. MSA believes very strongly in student success and achievement and works hard to ensure that all students receive the educational content needed to be successful in life and in their postsecondary endeavors. The following definitions and procedures are intended to inform students and families of the credit recovery options available at MSA. ***Credit Recovery can only occur if a student has failed a course and only if the failed course impedes the student's expected graduation date at MSA.***

Credit Recovery Options for MSA students:

1. **MSA Course Repeat**- A student who has received a final grade of an F or who has not met the grade requirement based on course placement level in a course at MSA will repeat the same course the following year to relearn and master course content and standards. Courses in the subjects of English, History and Science can be taken concurrently.
 - a. *For example: A student who has failed Ancient World History at MSA in 9th grade, will be required to complete the same course in 10th grade. The student may also take another History course in 10th grade simultaneously.*
2. **Summer School Course**- A student who has received a final grade of an F in a required course at MSA may have the option to take an equivalent course through the family's home district and outside of MSA during the summer months. *This option should only be used if the equivalent course is offered and only when the failed course impedes the student's expected graduation date at MSA.* After successful completion of a summer math course, the student must also take a course final (scoring 80% or higher) in August at MSA to show readiness to move to the next progressive course.
3. **Postsecondary Enrollment Options (PSEO)**- A student who is behind a year in a required subject course at MSA may seek out course equivalent options through PSEO. Through the PSEO option, students may take the equivalent of a 1-year MSA course in a semester, potentially allowing for 2 courses to be completed in a school year.
 - Students may take a maximum total of **2** approved Summer School courses through an outside district to meet the MSA graduation requirements and receive an MSA high school (grade 9-12) diploma.
 - Courses through Summer School or PSEO must be **pre-approved** by MSA to ensure the courses taken will meet MSA's course standards and requirements.

- Any grades received from a summer course will not be included in the calculation of MSA's GPA. The course will be labeled on the MSA transcript with a Pass/Fail grade and as a transfer course. The failed MSA course will remain on the student's MSA transcript.
- MSA must receive a transcript or official completion grade from the school the course was taken from upon completion of the summer school course.
- In the case of a course being repeated at MSA, the failed MSA course will continue to appear on the MSA transcript. Once the failed course is successfully repeated at MSA, the GPA will be calculated from the repeated course grade rather than the initial course grade and the initial course grade will be changed to an R (Repeated).
- ***If you are still unsure of the options available to you, please contact MSA for more information.***

Many of our students take summer enrichment courses and we continue to encourage those. Courses through local schools (St. Paul School's summer classes, the Minnesota Institute for Talented Youth program, etc.) are excellent ways to delve into specific interests in the arts, sciences, and humanities and are usually very fun as well as enriching. With documentation that the course was successfully completed, these short, non-core, courses may be included on a student's transcript as summer classes, but will not have a grade attached to them; these do not need prior approval.

Course Descriptions

English

The English program focuses on improving student's writing skills, grammar, and vocabulary. We help students practice skills to enable them to write and speak clearly. The literature ranges from poetry and short stories to the classics and modern novels, allowing students to participate in different types of literary analysis. Grammar is taught directly and indirectly through literature and writing. Compositions range from five-paragraph essays to literary analysis to informative research papers. Oral presentations are also an essential element of our curriculum. Additionally, students develop study and test-taking skills.

Typical English Progression						
6th grade	7th grade	8th grade	9th grade	10th grade	11th grade	12th grade
English 6	English 7	English 8	Literature and Composition	World & British Literature	American Literature AND/OR AP Literature and Composition AND/OR Research Writing/ Composition	

Required Courses

English 6: 6th grade

English 6 will consist of reading, writing, speaking, and listening. Students will be reading novels, short stories, and nonfiction, creating book projects, working on technical and creative writing assignments, completing journal entries, and proofreading. This class will also include vocabulary, grammar, and writing mechanics, as well as giving speeches. Reading assignments may include *Touching Spirit Bear* and *The Witch of Blackbird Pond*.

English 7: 7th Grade

Seventh grade English includes the essential components of language arts: reading, writing, speaking, and listening. Units of study focus on parts of speech, sentence structure, and paragraph development; elements of fiction and character analysis essay writing; realistic fiction novel reading and reader-response; nonfiction reading and informative writing; mythology study and creative writing; historical fiction reading and analysis; sustained silent reading, spelling, and vocabulary. Texts include short story selections, *Downriver*, *The Miracle Worker*, myths, tales, and legends, and *The Call of the Wild*.

English 8: 8th Grade

English 8 encompasses all areas of language arts. Students will read novels, plays, poetry, and non-fiction. Students will spend time writing technical essays and a variety of other practical writing pieces. Throughout the year, students will study writing mechanics, usage, and grammar, as well as vocabulary. Students will also give speeches and class presentations. Reading assignments include *The Outsiders*, *The Diary of Anne Frank*, *Roll of Thunder Hear My Cry*, *The Giver*, and *Twelve Angry Men*.

Literature and Composition: 9th Grade

Students will be immersed in novels, short stories, and a play. They will be working on different persuasive and creative writing styles. The study of grammar and ACT level vocabulary will also add to providing the students with the reading, writing, speaking, and listening skills essential for today's students. Reading assignments may include: *Of Mice and Men*, *To Kill a Mockingbird*, *Fahrenheit 451*, *The Tragedy of Romeo and Juliet*, and *Speak*.

British /World Literature: 10th Grade

The literature of Great Britain is one of the oldest national literatures in the Western world. Many world famous masterpieces were written in Scotland, Wales, Ireland, and England. Students will take a chronological walk through British literature. They will read *Beowulf*, Medieval literature, Shakespeare's *Macbeth*, Mary Shelley's *Frankenstein*, romantic poems, Golding's *Lord of the Flies*, George Orwell's *1984*, and finally, Samuel Beckett's *Waiting for Godot*. For the World Literature portion, students will analyze representative masterpieces of world literature and make a comparative study of genres and themes as well as cultures and historical periods from Africa, Europe, Asia, North and South America. This course gives students an opportunity to examine literary works such as drama, short stories, poetry, and novels in order to heighten the student's awareness of the international and timeless themes in literature. Reading assignments include: *Cyrano de Bergerac*, *Metamorphosis*, *Things Fall Apart*, *A Small Place*, *A Doll's House*, and *Hamlet*.

American Literature: 11th-12th Grade

This year long course will trace the history and development of literature in America from the colonial days to the early twentieth century. Students will have a deeper understanding of the American experience after reading books that include *The Crucible*, *Catcher in the Rye*, *The Grapes of Wrath*, *Adventures of Huckleberry Finn*, *Death of a Salesman*, and *The Things They Carried*. Students will also be analyzing poetry from the Harlem Renaissance.

Composition: 11th-12th Grade (semester)

This semester long course is designed for students to work on proofreading skills, writing for a specific audience, and the three "C's" of technical writing (clear, concise, complete). The writing will focus on: short clear, concise, and complete pieces of writing, college essays, and presentations that effectively include text, graphics, images and sound with writing.

Research Writing: 11th-12th Grade (semester)

This semester course is designed to help students practice an effective research writing process: prewriting, drafting, revising, editing, and publishing. Students will work on developing complex sentences with grammar exercises throughout the course; also, they will write four academic essays: a persuasive essay, a how-to research paper, a narrative research paper, and a multi-genre research paper. Each research paper will be written within a creative writing format.

Enrichment & Elective Courses

Study Skills: Middle School

Students will learn the skills needed to be successful at the Math and Science Academy. The course will cover how to use a planner, how to take notes, how to read textbooks for maximum retention, how to study for a test, what sources to use in writing and research, the importance of making a schedule, and how to stay organized. The course will also cover other needs of students as these needs arise. Finally, study skills is also a time when the 6th graders get to meet with high school mentors, who make the new students feel welcome and help them navigate the various components of life at MSA.

Speech: Middle School (semester course, offered S1 & S2)

Students continue to develop their skills in oral communication, their focus on individual and cooperative presentation, and their abilities to set goals and work productively. Students will improve their research, outlining, and organization skills through the speech preparation process. Students will present information and supporting evidence clearly and logically such that listeners can follow the line of reasoning. The development, substance, and style of speech must connect to each purpose, as well. Students will make strategic use of digital media to add interest to presentations and to enhance the understanding of facts, details, and evidence. Also, students will practice appropriate verbal and nonverbal delivery cues and will improve listening skills through completing presentation evaluations. Speech assignments may include a group oral interpretation, a “my story” speech, an informative speech, a demonstration presentation, a persuasive “travel agent” speech, a group debate, and a special occasion speech.

Young Adult Literature: Middle School (semester course, offered S2)

This class will look at award-winning Young Adult Literature. Students will look at the criteria for these awards and discuss what makes a book "award-winning." With these criteria in mind, students will read various works of Young Adult Literature which have won literary awards in recent years, paying close attention to the award-winning elements of the book, as well as other literary elements of the text.

Study Skills: 9th Grade (semester course, offered S1)

This course is designed to help students learn and refine skills needed to be successful in the high school courses at the Math and Science Academy. These skills include: listening, speaking, reading, writing, note-taking, studying for tests, critical thinking, and time management. The course will cover how to prioritize, the importance of making a schedule, how to use a planner, how to take notes, how to read

textbooks for maximum retention, how to study for a test, what sources to use in writing and research, and how to stay organized. The course will also cover other needs of students as these needs arise.

Poetry: High School → not offered during the 19-20 school year

This is a semester long course. Students will study and write different forms of poetry. Students will explore literary devices, use of white space, traditional and nontraditional types of poetry.

Speech: High School → not offered during the 19-20 school year

This is a semester long course. Students will write and present different types of speeches. Speeches that will be presented will include: Oral Interpretation, Introduction, How-To, Persuasive, Special Occasion, and Informative. Some speeches will be read from published works; others will be written by the student. Some speeches will be memorized as well.

AP Literature and Composition: 11th-12th Grade

Prerequisites: B+ or better in British World Literature and a required essay before admittance

The AP English Literature and Composition course engages students in the careful reading and critical analysis of imaginative literature. Through the close reading of selected texts, students deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers. As they read, students consider a work's structure, style, and themes, as well as such smaller-scale elements as the use of figurative language, imagery, symbolism, and tone. Students will be expected to complete daily reading and writing assignments as well as take several AP practice tests.

Mathematics

The math program at the Math and Science Academy consists of a comprehensive curriculum that allows students to advance at their own pace, provided that they can demonstrate mastery of the content material. The typical sixth grade student will start in Pre-Algebra. After students have reached a level of understanding of basic mathematics, they will begin Algebra I with Geometry. After completing Algebra I with Geometry, Algebra II with Geometry, Algebra III with Geometry and Trigonometry, Pre-Calculus, and Calculus, students will have learned all of the mathematics necessary to succeed in a traditional college level calculus course. In order to graduate from MSA, students must successfully complete all courses in the math sequence through Calculus.

MSA students in Pre-Algebra through Algebra II classes gain math knowledge through the presentation of challenges. Students work on the challenges individually and in small groups then present and discuss their findings. Algebra III, Pre-Calculus, and Calculus students use a more traditional math textbook and class format in order to prepare them for college math classes. Student learning is assessed as students present and discuss their work in class each day. Formal assessment occurs through homework checks, quizzes, and tests.

MSA recognizes the fact that our math curriculum is more difficult than that of a typical high school, and that students will progress through this sequence at different speeds. Students may take classes more than once in order to master the content material. Whenever a student chooses to repeat a course at MSA, only the highest grade is recorded on the student's transcript.

The standard required math course sequence appears in the chart below. Students who are following the standard course sequence, will be allowed to continue that pace as long as they earn a final year course grade of C- or higher. Students who are progressing through the course sequence at an accelerated pace, will be allowed to continue that pace as long as they earn a final year course grade of B- or higher. Students who are progressing through the course sequence at a slower pace, must earn a final year course grade of D- or higher to move on to the next course.

Students who are unable to achieve the required minimum grade at the end of the year, must repeat that course the following school year.

Typical Math Progression						
6th grade	7th grade	8th grade	9th grade	10th grade	11th grade	12th grade
Pre-Algebra	Algebra I	Algebra II with Geometry	Algebra III with Geometry & Trigonometry	Pre-Calculus	Calculus	Math Elective

Required Courses

Pre-Algebra

This course is designed to provide students with an understanding of basic mathematics, and to gain the thinking and arithmetic skills necessary to succeed in Algebra I. Pre-Algebra uses materials from many sources, including the Connected Mathematics Project, Addison-Wesley Secondary Math's Focus on Algebra and Addison-Wesley Secondary Math's Focus on Geometry. Students will also be involved in many activities collected from a variety of sources. Students will be given an MSA math textbook to use as a resource. Topics include: measuring and perimeter, surface area, 3 dimensional objects, large numbers and scientific notation, factors and multiples, probability, more probability, squares and roots, angles and shapes, ratios and variables.

Algebra I with Geometry

This course is designed to study the relationships between the graphs, tables and rules of linear functions. Algebra I uses materials from many sources, including the Connected Mathematics Project, Addison-Wesley Secondary Math's Focus on Algebra, and Addison-Wesley Secondary Math's Focus on Advanced Algebra.

Topics include: linear functions, tables, graphs, symbolic rules, symbolic manipulation, ratios and proportions, inverse linear functions, linear systems, probability and statistics, geometry.

Algebra II with Geometry

This course is designed to study the relationships between the graphs, tables and rules of many complex functions. Algebra II uses materials from many sources, including Addison-Wesley Secondary Math's Focus on Advanced Algebra and Functions Modeling Change by Debra Hughes-Hallett.

Topics include: linear systems, quadratic functions, factoring, completing the square, radicals and the quadratic formula, inverses and exponents, geometry, sequences and polynomials, absolute value and inequalities, rational expressions.

Algebra III with Geometry and Trigonometry

This course is designed to start where Algebra II ends and continue the study of the relationships between the graphs, tables and rules of even more complex functions. Designed to prepare students for Pre-Calculus and Calculus, this class will involve a lot of practice in algebraic manipulation with the goal that many operations become almost second nature. Algebra III primarily uses Algebra and Trigonometry for College Readiness by Lial and Hornsby.

Topics include: exponents, polynomials, polynomial functions, factoring, rational expressions, rational functions, roots, radicals, root functions, conic sections, nonlinear systems, trigonometric functions, acute angles, right triangles, right triangle trigonometry, geometry, probability and statistics.

Pre-Calculus

This course is designed to prepare students for Calculus. Students will learn that functions can be grouped into families and that functions can be used as models for real-world behavior. Pre-Calculus primarily uses Functions Modeling Change by Debra Hughes-Hallett.

Topics include: linear functions, functions, quadratic functions, exponential functions, logarithmic functions, transformations of functions, trigonometry in circles and triangles, trigonometric functions, trigonometric identities and applications, compositions and inverses and combinations of functions, vectors and matrices, sequences, and series.

Calculus

This course is designed to introduce students to the study of calculus so that they can succeed in a traditional college level calculus course. Calculus primarily uses Calculus, Single Variable by Debra Hughes-Hallett.

Topics include: functions, derivatives, differentiation, definite integrals, integration, indefinite integrals, using derivatives and definite integrals

Enrichment & Elective Courses

Math Skills: assigned to some 6th graders

This course is designed for 6th grade students who may benefit from supplemental Math support as they transition into MSA's Pre-Algebra. The course will be taken concurrently with Pre-Algebra. Math Skills will help to support the Pre-Algebra course work, as well as to strengthen basic math skills. Math Skills uses materials from many sources.

Topics include: addition, subtraction, multiplication, division, fractions, decimals, and percent's.

Geometry: can be taken after Algebra II

This course is designed to introduce students to classical Euclidean geometry and to develop formal and informal reasoning skills. Geometry primarily uses Geometry Connections by College Preparatory Mathematics, as well as some unpublished material.

Topics include: logic, inductive and deductive reasoning, complex areas, triangle and circle proofs, trigonometry and probability, constructions, and three-dimensional modeling.

AP Calculus AB (can be taken instead of Calculus or as an elective)

Prerequisites: Pre-Calculus (B+ or higher)

This course is designed to introduce students to the study of calculus so that they can succeed in a traditional college level calculus course. AP Calculus AB primarily uses Calculus, Single Variable by Debra Hughes-Hallett. The AP Calculus AB test may be taken in May.

Topics include: functions, derivatives, differentiation, definite integrals, integration, indefinite integrals, using derivatives and definite integrals.

AP Calculus BC: can be taken after AP Calculus AB

Prerequisites: Calculus, AP Calculus (B+ or higher)

This course is designed to introduce students to the study of calculus so that they can succeed in a traditional college level calculus course. AP Calculus BC primarily uses Calculus, Single Variable by Debra Hughes Hallett. The AP Calculus BC test may be taken in May.

Topics include: all of the topics in AP Calculus AB plus Euler's Method, L'Hospital's Rule, derivatives of polar, parametric and vector functions, applications of integrals, integration by parts, substitution, improper integrals, logistic differential equations and using them in modeling, polynomial approximation and series, including Taylor and Maclaurin Series.

AP Statistics: can be taken after Pre-Calculus

Prerequisites: Pre-Calculus (B+ or higher)

The purpose of the AP course in Statistics is to introduce students to the major concepts and tools for collecting, analyzing and drawing conclusions from data. The course draws connections between all aspects of the statistical process, including design, analysis, and conclusions. Additionally, using the vocabulary of statistics this course will teach students how to communicate statistical methods, results, and interpretations. Students will learn how to use graphing calculators and read computer output in an effort to enhance the development of statistical understanding. AP Statistics primarily uses Practice of Statistics by Daniel Yates.

Topics Include: exploring data, describing patterns and departures from patterns, sampling and experimentation, planning and conducting a study, anticipating patterns, exploring random phenomena using probability and simulation, statistical inference, estimating population parameters and testing hypotheses.

Personal Finance: ~~9th-12th grade~~ → not offered during the 19-20 school year

Students learn how to navigate the financial decisions they must face and to make informed decisions relating to career exploration. They also learn the importance of investing in themselves in order to gain the knowledge and skills valued in the marketplace. Development of financial literacy skills and an understanding of economic principles will provide the basis for responsible citizenship, more effective participation in the workforce, and career success. Topics include: budgeting, banking, credit, insurance, spending, financing postsecondary education, taxes, saving and investing, buying/leasing a vehicle, and living independently.

Science

The science program at MSA was designed to broaden student understanding of a wide range of scientific concepts, nurture developing critical thinking skills, and cultivate engaged and scientifically literate citizens. Students learn subject matter disciplines in the context of inquiry, technology, science in personal and social perspectives, and the history and nature of science while integrating all aspects of scientific concepts. All elements of the program are consistent with the National Science Education Standards and Benchmarks for Scientific Literacy, and meet state-mandated goals as measured by the Minnesota Comprehensive Assessments (MCA's) Middle School and High School Science benchmarks.

Typical Science Progression						
6th grade	7th grade	8th grade	9th grade	10th grade	11th grade	12th grade
Life Science	Earth Science	Physical Science	Biology OR AP Biology	Chemistry OR AP Chemistry	Physics OR AP Physics	Science Elective

Required Courses

Life Science: 6th Grade

Students will learn subject matter disciplines in the context of inquiry, technology, science in personal and social perspectives, and history and nature of science while integrating all aspects of biological concepts consistent with State Standards, National Science Education Standards and Benchmarks for Scientific Literacy. Rather than study a broad range of general biological topics, students will study a few fundamental scientific concepts that will best prepare them for success in AP Biology/Biological Sciences. Students will practice inquiry by using multiple processing skills – manipulation, cognitive, procedural, laboratory investigations, and by performing relevant short-term and extended activities that investigate and analyze science questions.

Earth Science: 7th Grade

Students will investigate Earth science concepts including the nature and practice of science, Earth in space, geology, meteorology, and human interactions with Earth systems. Students will demonstrate the application of critical thinking skills to science problems and develop an awareness of basic underlying concepts that relate to or explain the natural world (systems, cycles, order, change, energy and matter, cause and effect). The course includes in-class and group activities, online learning, labs and inquiry, research projects, and other assignments.

Physical Science: 8th Grade

Physical Science is foundational to high school chemistry and physics. This class presents a wide range of topics including scientific methods, measurements, matter, chemistry, motion and forces, simple machines, sound, light, and electricity. It is mathematically intense, and the students will develop a

strong conceptual understanding of Physical Science by the end of the year. The first semester is an introduction to chemistry, and the second semester will concentrate on physics.

Biology: 9th Grade

Students enrolled in this course will learn about the living world at all levels of organization and the processes involved at those levels. To do this, students will work with concepts, theories, and principles of the living environment. Topics will include cells and cellular processes, genetics, evolution, diversity of life, body systems, and ecology. Laboratory activities and field investigations will be used to supplement student understanding of each of these topics. In addition to these topics, students will also learn about historical biology background, potential careers in the field of biology, and evaluate current biology-related issues.

General Chemistry: 10th Grade

Chemistry is a course in which the student will investigate chemical and physical behavior of matter using the scientific method. In laboratory the student will learn to make careful observations, seek out regularities, and attempt to provide explanations for observed behavior. The student is introduced to a fundamental understanding of chemical reactions and chemical bonding through a detailed analysis of the structure of the atom. Acid/Base Chemistry is the final unit where students will investigate both chemical and physical properties of the hydroxide and hydronium ion. These experiences are centered around laboratory activities with much emphasis being placed on process, observation, and evaluation of observation.

General Physics: 11th Grade

This course provides a conceptually-based exposure to the fundamental principles and processes of the physical world. Topics include basic concepts of mechanics, fluids, electricity and magnetism, sound, and light. Laboratory experiments and computer-based exercises enhance and consolidate the understanding of basic physical principles and applications. Prior to taking this class students should have 1 year of algebra and a basic understanding of trigonometry.

Enrichment & Elective Courses

Engineering Design: 8th Grade (semester course, offered S1 and S2)

Students will investigate engineering design concepts through project-based (STEM) activities. Past projects have explored the fields of industrial design, biomechanical engineering, forensics, aeronautics, civil and mechanical engineering, computer aided design (CAD), and 3D printing. Students will participate in guided investigations and open-ended problem solving activities, learn how to document their work, and communicate their solutions to others.

There will be a lab fee of \$15 for this course.

Anatomy & Physiology: 10th-12th Grade

Prerequisites: *Biology or AP Biology must be taken prior to enrolling in this course.*

This course will focus on the anatomy and physiology of the human body. Topics will include each of the body systems and will focus on the relationship between the physiological and anatomical features of each. Activities that may be done in class include labs, identifying structures on models, and doing computer simulations.

A Taste of Science: High School (semester course)

Have you ever wondered what makes bread rise? Why is red velvet cake red? Now is your chance to find out! In this course, we will explore the science behind cooking and food ingredients. You will explore the budding field of "molecular gastronomy" and become familiar with some techniques used in this field. For example, we will bake red velvet cake and investigate the secret behind the red color. You will also turn yogurt into "ravioli", create rock candy, make ice cream and marshmallows from scratch while learning the science behind these food items.! Time permitting at the end of the semester, you will have the opportunity to delve into the science of climate change and become a detective in the world of forensic science with opportunities to investigate blood-spatter patterns and bullet trajectories!

There will be a lab fee of \$20 for this course.

Introduction to Engineering (Engineering I): High School (semester 1)

This course will focus on basic principles of engineering including drafting, CAD, programming, and the engineering design process. The class will be project intensive as students work their way through the engineering process from beginning to end to find creative solutions to problems. Topics include: mechanical, electrical, and civil engineering with continual themes of environmental responsibility, engineering in the workplace, cost analysis, and testing of designed solutions.

Advanced Engineering (Engineering II): High School (semester 2)

This course will continue to focus on basic principles of engineering including CAD, programming, and the engineering design process. The class will be project intensive as students work their way through the engineering process from beginning to end to find creative solutions to problems. Topics include: topics covered in Engineering I, and more advanced topics in CAD, programming, electronics and 3D printing.

Bioengineering : High School (semester 2)

In Bio engineering students will explore how the environmental impact has become an increasingly important concern during the process of engineering any new technology. This course covers the design, development and construction of working prototypes to address environmentally friendly alternatives to issues that are addressed in society. This class addresses how to solve sustainability challenges without causing harm to the environment or human health. Examples of project design challenges: sustainable household water and energy use, upcycled household waste, reductions in food waste, and greener alternative to food production and green transpiration.

Before developing these projects, students will conduct a cost benefit analysis to determine if it is truly feasible and beneficial in meeting the needs and demands of society.

There will be a lab fee of \$25 for this course.

AP Biology: 9th-12th Grade (can be taken instead of Biology or as an elective)

Prerequisites: Current 8th going into 9th grade: An A- or higher in Physical Science; For students taking the course as an elective (10th-12th grade): B+ or higher in Biology.

This course can be taken in place of Biology for the graduation requirement or as an elective for students in 10th-12th grade. This course is meant to be the equivalent of a two-semester college introductory biology course that covers topics of the living world at all levels of organization. Students should expect a higher workload than most classes, with 1-2 hours a night being spent on the course. Best success is seen in self-driven students with strong application skills. Students will have the opportunity to take the AP Exam in May for potential college credit.

AP Chemistry: 10th-12th Grade (can be taken instead of Chemistry or as an elective)

Prerequisites: 10th-12th Grade (can be taken instead of Chemistry or as an elective)

Prerequisites: A- or better in AP Biology (9th grade) or B or better in General Chemistry. Summer homework also required.

This course can be taken in place of Chemistry for the graduation requirement or as an elective for students in 11th-12th grade. The AP Chemistry course is designed to be the equivalent of the general chemistry course usually taken during the first college year, and uses a college level text signed out to enrolled students at the end of the prior school year. This course will prepare students for success on the May AP Chemistry Test. In addition to content work, students will complete many labs recommended by the College Board and use a Lab Notebook to submit the lab write ups for grading. This course is similar to any rigorous college science class where for every one (1) hour spent in class, a student should expect to spend 2 additional hours for homework, listening to podcasts and taking notes, and preparing/writing up labs in lab notebook.

Students must complete a self-paced summer preparation program consisting of videos, graded online homework covering chapters 1–3 and most of chapter 4 in the chemistry book. No late summer work will be allowed as we begin the content on Chapter 4 in September. The online summer homework is due before the beginning of school and may be started mid-June. Students must also pass a test on the summer homework the first week or two of school to stay in the class.

(Note-It is highly recommended that students take Chemistry before this course as AP Chemistry is considered to be a two-year class with general chemistry taken as a prerequisite. Students will be more successful and this will help ease the learning curve for the summer homework and the coursework in general.)

AP Physics: 11th -12th Grade (can be taken instead of Physics or as an elective)

Prerequisites: B+ or higher in Algebra III and B+ or higher in AP Chemistry or Chemistry.

AP Physics 1 is an algebra-based, introductory college-level physics course. Students cultivate their understanding of Physics through inquiry-based investigations as they explore topics such as Newtonian mechanics (including rotational motion); work, energy, and power; simple harmonic motion, mechanical waves and sound; and electrostatics and DC circuits. The course is based on six Big Ideas, which

encompass core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical world.

Social Studies

The study of History (Minnesota, U.S., and World) helps students to see how people in other times and places have grappled with the fundamental questions of truth, justice, and personal responsibility, to understand that ideas have real consequences, and to realize that events are shaped both by ideas and the actions of individuals. The global connections in areas such as commerce, politics, migration, and communications, make an understanding of the history of the world’s many cultures especially important in fostering the respect and understanding required in a connected and interdependent world.

The geographically literate person knows where important things are, why they are located in those places, and the significance of the location patterns of the world, as well as comprehending the nature and significance of multiple connections between people and places around the world. Included in Social Studies is the study of economics, which enables students to make reasoned judgments about both personal economic questions and broader questions of economic policy in a complex and changing world. The aim of Social Studies civic education is to ensure the participation of informed and responsible citizens who are skilled in the arts of deliberation and effective action.

Typical Social Studies Progression						
6th grade	7th grade	8th grade	9th grade	10th grade	11th grade	12th grade
MN Studies	U.S. Studies	Global Studies	Ancient World History & Geography	Modern World History & Human Geography	American History	Political Science/Intro to Economics

Required Courses

Minnesota Studies: 6th Grade

Minnesota Studies includes knowledge, comprehension, and analysis of Minnesota history from tribal settlement to modern-day. Some topics covered will include the daily life of native peoples, early settlement and statehood, Minnesota’s role in various wars (Civil War, Dakota Conflict, WWI, WWII, etc.), industrialization, state and local government, and immigration (among other topics). This is a blended course in which the first semester focuses primarily on Minnesota’s development, while the second semester brings Minnesota into the larger history of the United States.

US Studies: 7th Grade

US Studies focuses on history as the leading discipline, but also includes citizenship, economics, geography, and government. Students will study the founding documents and explain the impact of various policies on how people lived, worked, and functioned in society. Some of the themes discussed include the Birthplace of Democracy, the Civil War, Reconstruction, WWII, and the beginning of the Cold War. Students will also have the opportunity to complete in the National History Day Competition,

an inter-disciplinary research program which broadens students' historical experiences by completing a paper, an exhibit, a documentary, a play, or a website.

Global Studies: 8th Grade

This course takes a regional approach to understanding the world and how people interact with their environments. Students will analyze important trends in the modern world, participate in civic discussion, conduct historical inquiry, and study events over the last half century that have shaped the contemporary world. The units that students will study include: Geographic Skills, Overview of the World/Globalization, Australia/Oceania, East and Southeast Asia, Southwest and Central Asia, Africa, Europe/Russia, Latin America, and the United States/Canada. A research project is required as well as various smaller projects.

Ancient World History and Geography: 9th Grade

Ancient World History includes knowledge, comprehension, and analysis of World History from Ancient Rome through the Age of Revolution and Enlightenment. We will examine Rome and the Rise of Christianity, The World of Islam (up to 1800), early African peoples, civilizations of the Americas, the Asian world (up to 1800), Europe in the Middle Ages, Renaissance and Reformation, the Age of Exploration, and European Revolution and Enlightenment. We will examine history through the people, events, and ideas that made these periods and countries important, as well as trying to tie countries and people together.

Modern World History and Human Geography: 10th Grade

Prerequisites: Ancient World History and Geography

Modern World History will cover the period from the French Revolution to the late 20th Century. Students will not only examine key historical events, but hone their analytical and writing skills as they prepare for college. Assignments include research papers, essay exams, and document based questions and analysis. Students will read excerpts from a variety of sources. Key readings will come from primary source documents. These are integral to understanding events in world history. Students will have the opportunity to read a literature selection to enhance understanding of a key event or era in modern history and the repercussions that resulted from that extraordinary event. Options could include: *Animal Farm*, *All Quiet on the Western Front*, *When My Name was Keoko*, or *Persepolis*

American History: 11th Grade

This course provides a one-year survey of American history beginning with the migration of native peoples and civilizations in North America prior to European contact to the Colonial Period, the American Revolution, the Civil War, and other defining events for the United States, including analyses of various civil rights movements and the Vietnam War era. Using the textbook, primary documents, and current events, students will learn about the various political, social, religious, and economic developments that have shaped and continue to shape the United States. Essay writing and critical thinking are emphasized as integral ways of understanding how the past relates to the present and future. A major research paper is required as well as various smaller projects.

Political Science: 12th Grade (semester)

This is an introductory course which will provide students with the knowledge and skills needed for informed, responsible, and active participation in their communities. We will be framing the class with the Constitution – using it to explore such topics as rights/responsibilities of citizenship, political parties, the three branches of government, and domestic and foreign policy.

Introduction to Economics: 12th Grade (semester)

Economics is the study of how people coordinate their wants and needs, given scarce resources and the decision-making mechanisms, social customs, and political realities of their societies. We will examine how decisions made by consumers, workers, investors, managers, and government officials interact to determine the allocation of scarce resources. We will begin with a focus on microeconomics and gradually expand to macroeconomic topics such as GDP, unemployment, inflation, and public policy. This course will also include a unit on personal finance.

Enrichment & Elective Courses

MASCADA: 8th-12th Grade

This course will produce MASCADA, the Math and Science Academy school yearbook. Students in this course are tasked with producing a timeless, creative, all-encompassing, and innovative publication which will record our school's community, memories, and events. In this course, students will gain skills in the following areas: cover design, page design, publishing techniques, copywriting, editing, photography, record keeping, time management, teamwork, marketing, and leadership skills. Students will use various computer programs to complete the various yearbook creation tasks as well as Lifetouch's yearbook design program.

AP Psychology: 11-12th Grade

Prerequisites: B+ or higher in AP Biology, B+ or higher in Anatomy and Physiology and a B+ average for previously completed Social Studies courses. Summer homework packet also required.

The AP Psychology course is designed to introduce students to the systematic and scientific study of the behavior and mental processes of human beings and other animals. Students are exposed to the psychological 27 facts, principles, and phenomena associated with each of the major subfields within psychology. They also learn about the ethics and methods psychologists use in their science and practice.

AP Human Geography: 11-12th Grade

Prerequisites: None

The curriculum for this two-semester course consists of topics drawn from eight interrelated units of study outlined in the AP Human Geography Course Description booklet published by the College Board. The purpose of the course is to utilize geographic processes to systematically study and understand the following concepts. This class introduces students to the systematic study of patterns and processes that have shaped human understanding, use, and organization of the earth. Students will

employ spatial concepts and landscape analysis to examine human organization of space. This AP Human Geography class teaches spatial relationships at different scales ranging from local to global.

Sociology: 10-12th Grade

Sociology is the study of human interaction. It focuses on people and their ways of life as well as studying social trends, cultural changes, human development, social institutions and collective behavior. Sociology enhances students' understanding of the social world and offers an accessible setting to learn and use scientific thinking, and consider how society might address social issues. A sociological perspective underscores the importance of examining the social world with a critical eye, and to question assumptions and generalizations about the world. In Sociology you should be open to discussing many current issues including gender, race, class, religion and crime.

Health & Physical Education

The mission of this program is to inspire youth to become responsible for their overall wellness in hopes that they will choose a healthy lifestyle enhancing behaviors both now and in the future. The program also aims to motivate the students to understand and incorporate physical activity in their everyday lives. The curriculum is designed to help students understand that the decisions they make can affect the quality and longevity of their lives.

Required Courses

Health 7: 7th Grade

The curriculum is designed to help students understand that the decisions they make can affect the quality and quantity of their lives both now and in the future. The health lessons and activities focus on the National Health Standards, and include: personal wellness, mental and emotional wellness, nutrition, decision making and conflict resolution, alcohol and other drug abuse, healthy relationships, human sexuality, physical activity, and communicable and non-communicable diseases.

Health 9: 9th Grade

Upon completion of this class, the students will be able to identify and explain various systems in the body and how they work together. The students will also be able to explain how stress, sexually transmitted diseases, mental disorders, and puberty affect the body's natural functioning. The topics covered include: personal wellness, goal setting, mental and emotional wellness, nutrition, alcohol and other drug abuse, body systems, human sexuality, and early childhood development.

Physical Education: 6th – 9th Grades

Physical education focuses on the National Standards for Physical Education. The overall goals for students include: being physically active, having a positive attitude towards the activity being presented, and attending class in appropriate physical education attire. A wide variety of activities and skills are covered each week with a short introductory game, fitness activity, and a lesson focus. Students are exposed to numerous sports and activities that include team and lifetime sports, adventure activities, and team building strategies.

Fine and Visual Arts

Art is an essential part of a liberal education. There are a variety of music and art courses to choose from in every grade. Additional classes may be offered based upon student interest and teacher availability. Art is required in 6th and 8th grade. Students are required to take two additional semesters of fine arts between 9th and 12th grade.

Performing Arts

Performing Arts at the Math and Science Academy is a comprehensive instrumental and general music curriculum that allows students of all musical backgrounds to encounter and explore the musical genre. Instrumental and non instrumental music courses will progress from a general knowledge of music to the beginning, intermediate, and advanced stages of musical performance.

Band: Middle School

Students entering the 6th grade who are interested in instrumental music will be placed in the Concert Band. This includes beginning students or students with one year of performance experience. If they are playing a stringed instrument, they should plan to take the String Orchestra that meets after school on Mondays and Wednesdays. Continuing 7th grade students will either be placed in the Concert Band for continued experience or in the Wind Band which is a bit more advanced. All 8th grade students going into 9th grade will move into the Wind Ensemble.

World of Music/drumming: 6th grade

As a society, we tend to lock ourselves into a series of routines. We construct agendas, schedules, and timetables to the point that everyday tasks often become humdrum and boring. Well, the times they are “a changin’”. In this course, designed specifically for young, inquiring minds who have not become rigid and set in their ways, we will explore MANY new and exciting means of accomplishing those everyday tasks. Students will need on a daily basis to arrive to class with a pencil, a journal, and an inquiring mind. All additional materials will be required on an as-needed basis. Different ethnicities and cultures will be explored via the history and performance of constructed and ethnic percussion. New and ancient rhythmic systems will be explored.

Concert Band: 6th -7th Grade

This ensemble, designed for beginning to intermediate instrumentalists performs music at the Minnesota State High School League (MSHSL) Class I and II levels. These students possess a written and performing knowledge of theoretical and technical musical concepts appropriate to their skill level in accordance with the National Performing Arts Educational Standards for grades 6 through 7. These standards address issues such as solo/small ensemble/large ensemble rehearsal and performance, theory, terminology, and composition.

Wind Band: 7th -8th Grade

This ensemble is for the intermediate to advanced Middle School instrumentalist. Students will sight-read and perform music at the MSHSL levels of II and above, while addressing the theoretical and technical musical concepts appropriate with the National Performing Arts Educational Standards for grades 6-8. These standards address issues such as solo/small ensemble/large ensemble rehearsal and performance, theory, terminology, and composition.

Choir (For credit): High School

Now a curricular class - (0 hour for 9-12 grades) will be meeting on Tuesdays and Fridays from 8-9:10 a.m. 9-12 graders will have to sign up at the Back-to-school night or online to get credit. Attendance will be mandatory at all rehearsals to get credit recognition. Any questions should be directed to the Performing Arts Department..

Symphony (For credit): High School

Now a curricular class 8th hour for 9-12 grades, for credit will be meeting on Mondays and Wednesdays from 4:00-5:00 p.m. Attendance will be mandatory at all rehearsals to get credit recognition. Any questions should be directed to the Performing Arts Department..

Wind Ensemble: High School

This ensemble is for advanced instrumentalists. Students will sight-read and perform music at the MSHSL levels of Class II and above, while addressing the theoretical and technical musical concepts appropriate with the National Performing Arts Educational Standards for grades 9-12. These standards address issues such as solo/small ensemble/large ensemble rehearsal and performance, theory, terminology, and composition.

Wind Ensemble Online: High School

This is an online course specifically for those instrumentalists who cannot fit the curricular ensemble rehearsal into their daily schedule. Through the use of the online subscription rehearsal program, SmartMusic, and online class assignments, instrumentalists will cover the same material as the curricular course (see Wind Ensemble).

Visual Arts

The visual arts department begins at the middle school level with an overview of the building blocks of art and design. It introduces the students to a variety of two-and-three-dimensional art media, artists, and techniques. Students will study art in historical contexts to learn more about the impact and role visual arts has played in human achievement. They will learn how art and culture are intertwined, to help them better understand the visual world in which we live. Students will form connections, think creatively, and problem solve while learning new art skills and practicing art techniques.

At the high school level, the Art Department offers a variety of focused elective classes. Through these classes students will continue to appreciate multiple artistic styles and to practice solutions to visual problems. They will expand and refine their art skills and knowledge, and they will continue to transform, synthesize, and appraise their own work and the work of their fellow students.

Art and Creativity: 6th Grade

Art has a language all its own. In this class students will be introduced to the elements of design, which are the building blocks of art. They will learn about these art elements while creating a variety of projects by studying multiple artists and by experimenting with different art media and art styles. Students will learn how to brainstorm to gather ideas and will begin to understand how to use art vocabulary to talk about and make judgments about their own and others' artwork.

Art Basics: 8th Grade

Students will continue to explore their own creativity and hone their art skills using multiple art materials. By studying famous artists and artwork, students will explore and create with a variety of media and techniques. Students will continue to develop their artistic sense and craftsmanship skills while learning how to communicate ideas visually.

Art and Technology: Middle School

This Photoshop based class examines how digital imaging techniques can be used to design advertisements, create business cards, movie posters, and so much more. Students will gain experience with presenting their artwork in a critique setting to acquire helpful feedback from their peers. They will build an understanding of art in a professional environment and how to pursue careers in this exciting field.

Drawing: High School (semester)

Students will learn the basics of observational drawing. They will begin to understand and practice how to transfer what they see in the three-dimensional world onto a two-dimensional surface. They will learn to draw what they see not what they "think" they see. Light and value are important to this process. The work of famous artists will be analyzed and studied to help students understand techniques and develop their drawing and painting skills. They will explore different mediums (pencil, charcoal, pastel, ink) and different techniques (hatching, stippling, gesture) to create original works of art.

Fee: There is a \$15.00 lab fee for this course.

Painting: High School (semester)

Prerequisites: There is a prerequisite of Drawing or teacher approval for this course.

This course will focus on color theory and composition. Students will learn the various techniques associated with watercolor and acrylic painting as well as mixed media art. The work of famous artists will be studied and analyzed to help students learn from the masters. Here they will be inspired to hone their skills and develop their own style and voice.

Fee: There is a \$15.00 lab fee for this course.

Digital Photography and Visual Communication I: High School (semester)

This course will begin to teach students how to create effective visual images with photography, digital art, and video. Students will learn the basics of good design and put it into practice in a variety of ways. We will look at photography, graphic design, and video to understand how visual information can be best communicated to an audience. Students will use Adobe Photoshop to learn basic digital editing skills and Adobe Premiere for video editing. Students will learn about artists known for their photographic work, and how to enhance their own pictures with a great composition.

Fee: There is a \$15.00 lab fee for this course.

Digital Photography and Visual Communication II: High School (semester)

Prerequisites: There is a prerequisite Digital Photography and Communication I or instructor approval for this course.

This course is a continuation of Digital and Visual Communication I. Students will continue to work with digital and design media, expanding on previously learned skills. More attention will be given to finding your personal creativity and working more independently with in-depth projects.

Fee: There is a \$15.00 lab fee for this course.

Sculpture: High School (semester)

Students will be creating a variety of sculptures using different mediums such as paper, cardboard, and found objects, with a large emphasis on clay. Students will also be educated on the history of ceramics and they will get to experience hand-building and throwing on the pottery wheel. This class will give students an introduction to the history of craft and functional art.

Fee: There is a lab fee of \$15.00 for this course.

Ceramics: High School (semester)

Prerequisites: There is a prerequisite of Sculpture or instructor approval for this course.

This class will focus entirely on ceramics (clay). Students will learn advanced hand-building, wheel-throwing, sculpture, and decorating techniques. They will also learn about the history of ceramics and clay sculpture including different art styles and methods from various cultures.

Fee: There is a \$15.00 lab fee for this course.

AP Studio Art: 10th-12th Grade

Prerequisites: 1 year of High School Art, B+ or better in the class correlating to which AP portfolio you want to take and summer homework art pieces.

The course promotes a sustained investigation of all three aspects of portfolio development... quality, concentration, and breadth... The course enables students to develop a body of work investigating a strong underlying visual idea in drawing, 2-D design, or 3-D design that grows out of a coherent plan of action or investigation (i.e., a “concentration”). The course enables students to develop mastery (i.e., “quality”) in concept, and composition, and teaches students a variety of concepts and approaches in drawing, 2-D design, or 3-D design so that students are able to demonstrate a range of abilities and versatility with technique, problem solving, and ideation (i.e., “breadth”). Such conceptual variety can be demonstrated through either the use of one or the use of several media. The course emphasizes art making as an ongoing process that involves the student in informed and critical decision making. The course includes group and individual student critiques and instructional conversations with the teacher, enabling students to learn to analyze and discuss their own artworks and those of their peers. The course teaches students to understand artistic integrity as well as what constitutes plagiarism. If students produce work that makes use of photographs, published images, and/or other artists’ works, the course teaches them how to develop their own work so that it moves beyond duplication.

Fee: There is a \$25.00 lab fee for this course.

Spanish

Students at MSA are required to take Spanish and pass each year according to the flowchart. The purpose of this six-year program is to form a strong basis of the Spanish language. The learning includes grammar, vocabulary, writing, literature, conversation, and culture. Students will leave MSA with a strong background in Spanish to help them in their college studies. Students who would like to pursue college Spanish placement testing will be well prepared.

Students in 8th through 11th grade who are new to MSA and have not taken any Spanish courses will be placed into High School Spanish I. Students new to MSA who have previously taken Spanish and 6th graders from immersion schools will be required to take a placement exam in the spring.

Students with previous Spanish experience coming to MSA will take a placement test to determine a starting level and follow the flow chart from there. This does not apply to incoming 6th graders who have had Spanish approximately once a week throughout elementary school. Students need to follow the flowchart based on the benchmarks at MSA. For example, this means they may have taken a class called “Spanish II” at another school that is not the equivalent of our Spanish II because we start Spanish in 6th grade and have different course names. This student may still take MSA Spanish I based on the placement test.

Exceptions

- A 6th grade student who has gone through the immersion program may take a placement test and has the potential to start in Middle School Spanish IA, Middle School Spanish IB, or MSA Spanish II depending on their score. This student would follow an accelerated path until they exhaust the Spanish program at MSA and be required to maintain a B- to stay at the accelerated pace.
- A middle school student who gets below a C- will repeat the same course the following year.

Required Courses

Middle School Spanish IA: 6th Grade

This course is the first year of Spanish. It will include grammar, vocabulary, writing, listening, and cultural skills. Students will learn the basics of Spanish such as the alphabet, greetings, conjugation of verbs in the present tense as well as likes, dislikes, descriptive, school, family, clothing and food vocabulary. Some culture from Mexico, Puerto Rico and Spain will be introduced.

Middle School Spanish IB: 7th Grade

This course is the second year of Spanish. It will include grammar, vocabulary, writing, listening, and cultural skills. Students will learn basic communication discussing clothing, locations throughout the city and restaurants, identifying rooms and items in a house, activities to maintain one's health, body parts, technology, and free time. Students will focus on the regular preterite tense and irregular preterite

verbs. Students will also read a short novel and do discussion work. Culture from Spain, Ecuador, Dominican Republic, and Argentina will be introduced.

High School Spanish I: 8th-12th Grade

This course is for students new to MSA in grades 8-12 with little to no Spanish experience. It will cover information from Middle School Spanish IA & IB to prepare students for Spanish II. Topics include grammar, vocabulary, writing, listening, speaking and cultural skills. Students will learn greetings, present and past tense, verbs, likes, dislikes, school, family, food and house and health vocabulary. Culture from Mexico, Puerto Rico, Spain, Ecuador and the Dominican Republic will be introduced.

High School Spanish II: 8th-12th Grade

This course is the third year of Spanish. It will include grammar, vocabulary, writing, listening, and cultural skills. Students will learn to communicate about travel, sports, daily routines, shopping, myths and legends, and childhood experiences. The present, past, present progressive and imperfect tenses will be covered. Traditions and folklore from Mexico, Central America, South America, and Puerto Rico will be presented.

High School Spanish III: High School

This course is the fourth year of Spanish. It will include grammar, vocabulary, writing, listening, and cultural skills. Students will learn to communicate about food/cooking, making movies, technology, news, problem-solving, family relationships, and the environment. The present subjunctive, imperative, comparatives and superlatives, *por* and *para*, and impersonal expressions will be taught in this course. Traditions and folklore from Central America, the Dominican Republic, Spain, and the United States will be presented.

High School Spanish IV: High School

This course is the fifth year of Spanish. It emphasizes the use of the language for active communication. It will include grammar, vocabulary, writing, listening, speaking, reading and cultural skills. The subjunctive mood will be continued in this course. Students will learn to communicate about the outdoors, volunteering, the future of our planet, and heroes. Grammar will include a review of previous content, the present subjunctive will be continued in this course, and the conditional tense will be added. Traditions and folklore from Mexico, areas of the US, Central America, and the Caribbean will be presented.

High School Spanish V: High School

This is the sixth year of Spanish. Students will continue to advance their reading, writing, speaking and listening skills in the target language as well as their knowledge of grammar and vocabulary. Students will develop their understanding of the language and culture through the analysis of Hispanic literature. They will be able to communicate in Spanish about communication and organization, leisure time, the past and future, and literature. Grammar will include a review of previous concepts and the addition of the perfect tenses, progressive tenses, and other subjunctive tenses. Traditions and folklore from Bolivia,

Ecuador, Peru, Spain, Colombia, Venezuela, Argentina, Paraguay, Chile, and Uruguay will be presented.

Elective Courses

AP Spanish Language and Culture: 10th - 12th Grade

Prerequisites: B+ or higher in Spanish V. Summer homework packet also required.

This is the seventh year of Spanish at MSA. It is an Advanced Placement course offered to students who have completed Spanish V with a B+ or higher and teacher approval. The course is rigorous and reviews grammar from all previous levels and expands on higher-level vocabulary as well as culture from various Spanish-speaking countries. Students will take an AP exam in May including multiple choice listening and reading, interpersonal speaking, presentational speaking, interpersonal writing and presentational writing components.

Spanish Flowchart

Students who start at MSA in 6th Grade:



Students who start at MSA in 7th Grade:



Students who start at MSA in 8th Grade with no Spanish experience:



Students who start at MSA in 9th Grade with no Spanish experience:



Students who start at MSA in 10th Grade with no Spanish experience:



Students who start at MSA in 11th Grade with no Spanish experience:



Students who start at MSA in 12th Grade with no Spanish experience:

