

THE MONTANA ACADEMY ACADEMIC PROFILE

Montana Academy, founded in 1997 as a therapeutic boarding school, offers a high school curriculum that is fully accredited by Northwest Association of Accredited Schools (previously NAAS, but now AdvancEd) and the National Independent Private School Association (NIPSA). The Academy is located in a remote mountain valley situated on 450 pristine acres at the headwaters of the Fisher River near numerous trout filled lakes. The campus is surrounded by a conifer forest near the world class ski slopes of Whitefish Mountain Resort, the hiking trails of Glacier National Park, and the peaks of the Cabinet Wilderness Area.

Our Mission:

- Montana Academy provides a safe therapeutic environment for developmental maturation. The Academy encourages healthy relationships, academic excellence, and the development of life skills.

Our Beliefs:

- Education is individualized and builds upon the unique strengths of each student.
- Learning is active and encourages students to take responsibility for their education.
- Adolescents learn and mature best within an environment that encourages the development of the whole person.
- Adolescents should be provided opportunities to learn ways of thinking and behaving that allow them to achieve a productive and meaningful life.
- Appropriate character development is best promoted by establishing clear program rules within a safe environment.
- Effective therapy for adolescents reinforces students' introspection to gain emotional openness, to improve social skills, and to form healthy relationships that instill self-esteem and confidence.
- Programs should focus on the student's familial, cultural, and social systems that influence adolescent development.

Salient Features of the MA Program:

The staff at Montana Academy believes that students learn and mature best within an environment that nurtures both academic and emotional dimensions of life together with a healthy balance of athletic, vocational, and recreational activities.

An exceptional teaching staff provides engaging curricula in a structured, caring atmosphere. Positive student-teacher relationships are a vital component of academic success.

A student's emotional development is inextricably linked to his or her academic success. Teachers meet twice weekly as a group to discuss and assess each student's academic progress and then convey this information to therapists. Each teacher is a member of a Treatment Team and serves as liaison between teachers and therapists to provide a continual flow of information regarding students' academic and therapeutic progress.

Students are assigned a Team Teacher who is a key participant in a student's Treatment Team. The Team Teacher provides support for students and parents in academic concerns ranging from standardized test registration to academic planning. Team Teachers know each student's complete academic history and are an invaluable resource for guiding post-MA educational experiences and placements.

Education at Montana Academy creates an intellectual environment that is individualized and builds upon the unique strengths of each student. Teachers provide compassionate and nurturing classes that offer courses of study which actively engage students in the learning process. They help students develop metacognitive skills about learning how to learn by weaving reading, writing, and learning strategies into subject area content.

Small class sizes allow for individualization of instruction. Teachers emphasize mastery learning in core subject areas and require students to earn a C or better before considering their course work complete.

The academic calendar is divided into four twelve week academic blocks with graduations occurring in December, May and August. Each twelve week block is equivalent to one semester, and each block contains two six week grading periods. Teachers provide students weekly grade and behavior reports, and parents receive grade reports at six week intervals. Teachers welcome new students into their classes at any time and provide assistance for their successful transition. Course offerings are continually modified to fit student needs.

Students attend school five days per week (Monday through Friday). They typically take three academic classes and one study hall. Teachers provide individualized academic assistance during afternoon tutorials.

In the final period of the afternoon, students participate in physical education. Throughout the week, students rotate through various fitness activities such as strength training, running, snow-shoeing, aerobics, cardio-circuit training for overall fitness. They also can participate in team sports such as basketball and soccer. Occasional seasonal sports include horsemanship, skiing, fishing, and swimming.

Sophomore and junior students take the PSAT (Preliminary Scholastic Aptitude Test), and all juniors and seniors typically take the SAT (Scholastic Aptitude Test) and/or the ACT (American College Testing) test at least once during their stay at MA. Depending on their college plans, some students may also take SAT II (Subject Area Tests.) The Testing Coordinator makes arrangements for these tests. SAT & ACT test preparation classes are offered to augment the preparation students are expected to do on their own. Advanced Placement tests are scheduled and administered on campus. The Testing Coordinator arranges other specialized school placement exams.

GRADUATION REQUIREMENTS

Basic and College Bound

Montana Academy adheres to the basic graduation requirements set forth by the Montana Office of Public Instruction. Students need a minimum of 20 credits for high school graduation with 13.5 credits in required courses and 6.5 credits in elective courses. College bound students usually accumulate at least 26 credits of recommended courses that reflect college and university admission requirements. Many MA students who graduate with minimum graduation requirements attend post graduate vocational programs or often complete a post graduate year in another private school. However, most students complete the college bound requirements.

<u>Basic Credit Requirements</u>
4 credits of English
2 credits of Science
2 credits of Social Studies including .5 credit Government
2 credits of Mathematics
0 credit of Foreign Language
1 credit of Fine Arts
1 credit of Health Enhancement (P.E)
.5 credit of Health Science
1 credit of Vocational/Technical
6.5 credits of electives
<u>Total 20 Credits</u>

<u>College Bound Credit Recommendations</u>
4 credits of English
3 credits of Science with 2 credits laboratory science
3 credits of Social Studies including 1 credit American History, 1 credit World History, .5 credits Government and .5 credits elective
3 credits of Mathematics
3 credits of Foreign Language
2 credits of Fine Arts
1 credit of Health Enhancement (P.E.)
.5 credit of Health Science
1 credit of Vocational/Technical
5.5 credits of additional elective courses
<u>Total 26 Credits</u>

COURSE DESCRIPTIONS BY SUBJECT AREA**ENGLISH LANGUAGE ARTS*****Introduction***

The Montana Academy English program offers course selections that satisfy graduation requirements in the language arts while also offering a fine array of elective courses. All courses emphasize college preparatory writing skills, reading comprehension, and metacognitive learning strategies. Courses serve multi-age and multi-level classes and draw students actively into the learning process. Staff recommends that students take two blocks (semesters) of American Literature, British Literature, World Literature and A.P. Literature and that these courses be taken consecutively. Students can take other courses for either one or two academic blocks including Writing Workshop, Writing and Grammar, Literature and Composition, Journalism, The American Short Story, The Montana Academician, and Mythology & Writing

English Course Offerings

Class	Non College Bound Students	College Bound Students
British Literature	Elective	Recommended
World Literature	Recommended	Recommended
Mythology & Writing	Elective	Recommended
Advanced Placement Literature and Composition	Not Recommended	Recommended
Writing and Grammar	Elective	Elective
American Literature	Recommended	Recommended
Writing Workshop	Recommended	Recommended
Pulitzer Prize Novel	Elective	Elective/Recommended
Writing and Publishing	Elective	Elective
Shakespeare	Elective	Elective

BRITISH LITERATURE British Literature students read from a critical and historical perspective major literary works found in a variety of published sources including Norton Anthologies, Prentice Hall Literature Series and teacher owned (photocopied for students) sources. These readings include: Holy Grail myths, Celtic mythology, Chaucer's *Canterbury Tales*, Renaissance poetry, Shakespeare's *Hamlet* and *King Lear*, and selected writings from Henry James and George Orwell. Students respond to these readings in weekly formal essays or creative writings that are graded according to explicit assessment criteria. Each writing assignment focuses on a particular theme such as "The Holy Grail Enigma" or "Celtic Mysteries" or "Chaucer's Political Agenda" among others. All assignments link together to support the process of reading and writing and for each assignment students create a visual aid reflecting concepts and ideas expressed in their written work. Skills such as six trait editing, critical thinking and reading, planning and organizing along with learning strategies are emphasized. Students also practice public speaking in weekly classroom presentations and do a formal presentation as part a final performance assessment project. A wide range of supplemental reading selections augment the textbook mentioned below.

Text: *Timeless Voices, Timeless Themes, the British Tradition*, Prentice Hall; copyright 2000.

WORLD LITERATURE This survey course includes poetry, myths, legends, plays, and novels representing various world cultures. The reading assignments range from ancient Mesopotamian epics, to Persian Classics to Islamic-Sufi poetry, to Japanese and Chinese poetry, to Hindu Vedas, to Native American mythology, and to English novels. Students write weekly analytic essays or compose self-selected creative pieces such as plays, poetry, and short stories. Course content is enriched with video resources portraying historical, biographical, cultural, and literary elements. To provide a framework for grasping literary themes, a strong dose of relevant historical information is added to augment the literary units. The course culminates with student presentations and essays based on critical analyses of poetry. Phil Jones, who has lived, taught and traveled in many parts of Asia and the Far East, enriches the course with his extensive collection of art objects, slides, and personal narratives.

Text: *Literature, World Masterpieces*, Prentice Hall.

MYTHOLOGY AND WRITING

Mythology and Writing in a six to twelve week course offering opportunities to delve into Native American indigenous mythology, Celtic Mythology, and Norse Mythology. Students will focus upon gaining a familiarity with the fundamentals of three major world mythologies (cosmology, pantheon, world view) and upon applying those fundamentals in close examination of major works of the most well-known excerpts from these three mythological traditions. In addition, students will sharpen their oral presentation skills and their writing skills in response to a variety of assignments (expository, analytical, and creative). *Resources are teacher generated from a variety of reference sources.*

ADVANCED PLACEMENT LITERATURE AND COMPOSITION AP Literature and Composition provides an in-depth study of literature for juniors and seniors while preparing them for the AP English Literature exam. Students study poetry, plays and novels selected to meet the AP standards. Students write essays, both timed and untimed, in response to these readings. They also learn test-taking skills and strategies for achieving success on the AP exam. These skills include: a working knowledge of literary terms, analytic skills to grasp meanings in complex works of literature, practice in reading and writing about literature using the AP essay style, and practice with revision and editing. Students also give frequent class presentations based on their most recent essays. The curriculum for this course was awarded Advanced Placement designation by AP Central following a course audit. A wide range of supplemental novels, plays, and poetry is used along with the anthologies listed below.

Textbooks: *AP English Literature and Composition Student Guide*; *Literature, World Masterpieces*, Prentice Hall.

AMERICAN LITERATURE The four-part sequence of American Literature spans over 500 years of our country's contribution to the literary world. We examine both well-known and lesser known writers who have contributed to our literary heritage. Throughout the course we continually ask, what constitutes literature and how does it change over time? What does it mean to call literature "American?" What social and cultural factors affect literature and how is it produced and understood? And how do we choose what to read and what not to read?

Text: Prentice Hall, *Timeless Voices, Timeless Themes, The American Experience*, Prentice Hall; copyright 2000.

Internet resources: *Outline of American Literature*, Kathryn VanSpanckeren.

usinfo.state.gov/products/pubs/oal/oaltoc.htm; copyright 1998. PAL: Perspectives in American Literature, Paul Reuben Ph.D. www.csustan.edu/english/reuebn/pal/.

WRITING WORKSHOP The Writing Workshop addresses the Six Traits concept and takes it a step further. For every writing piece the writer must understand his/her *Purpose* for writing, know the *Organization* of the particular writing piece, provide appropriate *Details*, demonstrate a strong command of his/her *Voice*, and improve one's *Grammar, Usage, and Mechanics*. Students learn that writing is, indeed, a process. Students can expect to complete a writing piece for every week by taking each piece through the writing process: brainstorming, 1st handwritten draft, 2nd typed draft, peer conference, teacher-edit conference, and revision/final draft. Students help design the course and assist in creating a class syllabus. Students take responsibility for creating lessons in which they teach their classmates about a writing genre (personal essay, short story, etc.) of their choice. Students also create weekly 1) personal goals, 2) Montana Writing Standards goals, and 3) writing goals pertaining to the new writing piece.

Text: *Writers INC S Student Handbook for Writing and Learning*, Houghton Mifflin.

WRITING AND GRAMMAR This course focuses on drafting, revising, and editing and grammar skills applied to a wide range of weekly writing assignments. Students study basic and advanced grammar elements which they then use to improve their own writing. They also apply their knowledge of grammar to practice sections of the new SAT test. This course is particularly helpful to students taking a foreign language.

Text: *The Evergreen Guide to Writing*; Fawcett, Sandberg, Houghton Mifflin.

PULITZER PRIZE Students in this class - expect to read! Students read from a variety of novels selected by the Pulitzer Prize board since 1918. Novels read in past classes are Alice Walker's (1983) *The Color Purple*, Jhumpa Lahiri's (2000) *Interpreter of Maladies*, Pearl S. Buck's (1932) *The Good Earth*, and a variety of others chosen by the students for their final read. The class functions, as more than one student have expressed, "...like a book club." Guided and independent reading of the novels, class discussions, and written essays of literary criticism are fundamentals of the class.

WRITING AND PUBLISHING The Writing and Publishing class is responsible for producing the weekly school publication *The M.A.G.* Fundamental to any journalistic endeavor understanding the large ethical responsibility of

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reporting the news. Comparing and contrasting newspapers, exploring various media, reading about journalism and practicing and developing the craft of news writing students of this class will produce a weekly paper for the students, staff, and parents of the Montana Academy community while developing their own writing and critical thinking skills. Text: *The Associated Press Guide to News Writing: The Resource for Professional Journalists*. Arco; copyright 2000. Internet resources: *Journalism.org: Research, resources, and Ideas to Improve Journalism*. Project for Excellence in Journalism. <http://www.journalism.org/default.asp>

SHAKESPEARE Reading Shakespeare can be a challenging experience for a variety of reasons: diction, syntax, vocabulary and the many literary and historical allusions often come together to make comprehension difficult. On top of this, the very name itself comes freighted with hundreds of years of literary baggage. Shakespeare is often cited as the super genius of literature, the pinnacle of poets and playwrights, and is grouped with the likes of Beethoven, Mozart, Homer, and other immortals of the arts. All of these factors often stand between the reader and the material, and complicate an authentic and personal connection with Shakespeare's language, characters, and ideas. To the extent possible, the goal of this six week course is to minimize the barriers that can frustrate the creation of a meaningful connection to the text and to emphasize a playful engagement with the plays we read. In short, the goal of this six weeks course is to *enjoy* Shakespeare. This can be a difficult proposition, and requires some sustained application of mental powers, which is true of most anything worth doing. The more you put in, the more you get out.

FOREIGN LANGUAGE

Foreign Language acquisition is a challenging and rewarding experience. The goal is to build a basic knowledge of vocabulary and sentence structure in order to formulate coherent sentences in both in written and verbal forms. Students are encouraged to continue through the higher levels of Spanish, expanding their potential for proficiency. The culture of Spanish speaking countries is introduced as an important part of the class. Through the study of a foreign language, students begin to recognize the important contributions made by individuals as well as groups of other peoples and cultures outside of the students' immediate spheres. To be able to communicate in another language bridges the gap between cultures and presents the opportunity for a deeper inter-personal exchange when traveling and visiting in a foreign country. Learning a foreign language also helps students to see and understand their own native language from a new perspective. Formal grammar skills taught through a foreign language parallel the grammar necessary to speak English correctly. The approach emphasizes oral proficiency as well as reading and writing skills in Spanish.

World Languages Class Offerings

Class	Non-College Bound Students	College Bound Students
Spanish I	Elective	Recommended
Spanish II	Elective	Recommended
Spanish III/ Literature & Composition	Elective	Recommended

Spanish I

Spanish I is designed to introduce students to the language and culture of various Spanish speaking countries. Students will learn a wide range of vocabulary and heavy grammar content. Spanish I students learn familiar conversational phrases; including greetings, numbers, telling time, likes and dislikes. Vocabulary associated with families, daily life, and other activities is enhanced through written and verbal communication. Basic Spanish grammar structure is introduced focusing on noun and verb placement, and verb conjugation. Students will learn the present tense of regular and irregular verbs, as well as stem-changing verbs. Various Latino traditions will be incorporated into the curriculum, including art, holidays and other types of cultural celebrations, in addition to learning about aspects of political and historical events of Latin America. All students will also conduct a block-long research project on a particular aspect of Latin American history/culture/politics/art/etc. in which they will complete weekly updates on their topic and present their findings to the class during the final week. Specific requirements on the project will vary from block to block.

Resources

- *"Puntos de Partida: An Invitation to Spanish"*--7th ed., McGraw-Hill, 2005 ISBN 0-07-287394-9

Spanish II

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Spanish II builds upon vocabulary and grammar structures learned in Spanish I. More advanced sentence structures are introduced including a review of the past tense and an introduction to the imperfect tense verb conjugation. Additionally Students will begin writing letters and short stories using irregular verbs in various tenses. Oral practice is enhanced by short student presentations and/or student plays. New vocabulary introduced focuses on nature, health and well-being, modern life and pressures associated with it, and professions and career choices. Cultural celebrations are studied more in depth, as well as dance and art, and students continue to learn about the political and historical aspects of Latin America. All students will also conduct a block-long research project on a particular aspect of Latin American history/culture/politics/art/etc. in which they will complete weekly updates on their topic and present their findings to the class during the final week. Specific requirements on the project will vary from block to block.

Resources

- "*Puntos de Partida: An Invitation to Spanish*"--7th ed., McGraw-Hill, 2005 ISBN 0-07-287394-9

Spanish III & Literature & Composition

Students entering Spanish III will already have a very solid foundation of Spanish grammar and vocabulary on which they can continue to build. Due to the varying range in abilities that "advanced" Spanish students may exhibit, Spanish III is a course that is not as sequential as Spanish I and II, but rather consists of a series of stand-alone six-week lessons that may be appropriately utilized based on the abilities of the students in the class. These topics will include some of the most advanced grammatical concepts such as speaking about hypothetical events in the past, present and future, persuading others to see certain points of view, and clarifying indefinite or nonexistent clauses. Advanced students may also spend a six-week block studying Literature & Composition, where they read and analyze advanced texts designed for native speakers and write summaries and essays based on the reading. This course will help students hone their reading comprehension and writing skills while exposing them to cultural, political and social themes of Latin America. All students will also conduct a block-long research project on a particular aspect of Latin American history/culture/politics/art/etc. in which they will complete weekly updates on their topic and present their findings to the class during the final week. Specific requirements on the project will vary from block to block. Students in Spanish III may spend one or two blocks in Literature & Composition as opposed to a traditional language and grammar class. In Literature & Composition students will, depending on their fluency, read a variety of texts ranging from "readers" designed specifically for young native speakers of Spanish or foreign language students to full-length novels written by and for native Spanish speakers. Students will be responsible for completing daily reading assignments accompanied with reading logs, or summaries of what they read, outside of class and will then hold discussions in Spanish during class time to discuss the book. These reading logs, demonstrating a completion of daily reading assignments, will account for half of the student's overall grade. Following the completion of each book students will also take comprehension quizzes and then complete a final block project, which will vary based on what books have been read and student fluency.

Resources

- "*Puntos de Partida: An Invitation to Spanish*"--7th ed., McGraw-Hill, 2005 ISBN 0-07-287394-9

FINE ARTS

High school college bound graduation requirements at Montana Academy include two credits of Fine Arts. Students are recommended to take at least one credit in visual arts and one credit in performing arts (music or drama).

VISUAL ARTS COURSE OFFERINGS

Visual Art classes offered at Montana Academy include Ceramics, Painting, Printmaking, Drawing, 3-Dimensional Art and Art Fundamentals. It is recommended, but not required that students take Art Fundamentals prior to other Art courses offered at Montana Academy. Aside from Ceramics II, all Visual art classes are designed to be a great beginner course for the students working with the medium for the first time, as well as a great refresher and skill-building course for the experienced artists. Montana Academy's High school graduation requirements include 1 credit of Fine Arts and College bound graduation requirements include 2 credits of Fine Arts.

Visual Arts Class Offerings

Class	Non College Bound Students	College Bound Students
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Painting	Recommended	Recommended
Drawing	Recommended	Recommended
Printmaking	Elective	Recommended
Ceramics	Elective	Recommended
Ceramics II	Elective	Elective
3-Dimensional Art	Elective	Elective

PAINTING:

This painting course will cover a wide variety of projects, suitable for artists of all levels. Students will learn how to use Sumi-e ink, explore with encaustic techniques, and paint with acrylic and watercolor while experimenting on a variety of surfaces. Each student will create several paintings based on assigned themes from life, images, and imagination. During this course students will be exposed to various artists' styles and engage in art history, art appreciation, art criticism, aesthetics and production. Students will be encouraged to explore, invent and build upon their art skills and knowledge progressively. Sketchbooks will provide a place to practice techniques, take notes, complete the weekly homework assignments, and become a portfolio that represents the span and scope of the course. Student and teacher based rubrics will be used in assessment. During project development and critiques students will practice active listening, informal public speaking, problem solving, and group discussion. There will be a written component to each project. Written work can include topic on; self-reflection, critiques, research, biography, or analysis of historical art periods.

DRAWING

This drawing course is geared towards helping students learn how to draw what they see, not a simple task. Students will learn the critical act of observation. They will learn how to make sense of complicated scene, coordinate what they want to portray, and arrange that on a piece of paper. Students will learn the basics of drawing through a variety of techniques including: sketching, contour lines, shading (value), mark making, graphing, and perspective. Sketchbooks will provide a place to practice techniques, complete the weekly homework assignments, and become a portfolio that represents the span and scope of the course. Student and teacher based rubrics will be used in assessment. During project development and critiques students will practice active listening, informal public speaking, problem solving, and group discussion. Students will be encouraged to explore, invent and build upon their art skills and knowledge progressively. There will be a written component to each project. Written work can include topic on; self-reflection, critiques, research, biography, or analysis of historical art periods.

PRINTMAKING

Printmaking is a great way to experience the simplicity of creating multiple pieces of art works from a single block. This introductory course requires no prior experience in printmaking. This course will include an exploration of multiple printmaking blocks including: potato, numerous types of linoleum and wood cut. Students will create block prints, mono-prints, and explore the art of collagraph printing. Students will learn the basics of design, the process of preparing a plate, and the printmaking process. The latter part of the course will cover screen-printing and a deeper focus on creating backgrounds with both water color and the Chine Colle techniques, as well as registering a two colored reduction print. Sketchbooks will provide a place to practice techniques, take notes, complete the weekly homework assignments, and become a portfolio that represents the span and scope of the course. Student and teacher based rubrics will be used in assessment. During project development and critiques students will practice active listening, informal public speaking, problem solving, and group discussion. Students will be encouraged to explore, invent and build upon their art skills and knowledge progressively. There will be a written component to each project. Written work can include topic on; self-reflection, critiques, research, biography, or analysis of historical art periods.

CERAMICS

The focuses of Ceramics are in the three hand building methods; pinch, coil, and slab, as well as combinations of the three and the subtractive form of clay building. This course is designed to be a great refresher and skill-building course for experienced potters or a great beginner course for the students working with clay for the first time. Students will become familiar with ceramic tools and their usage, clay terminology, helpful strategies in clay building, glazing techniques, and alternative firing methods. Students will be exposed to various artists' styles and engage in art history. Both written and oral critiques will be an essential part of the course and allow students to

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share opinions and techniques, and receive and give feedback in a constructive non-judgmental approach. Sketchbooks will provide a place to practice techniques, note taking, glaze recording, complete the weekly homework assignments, and become a portfolio that represents the span and scope of the course. Student and teacher based rubrics will be used in assessment. During project development and critiques students will practice active listening, informal public speaking, problem solving, and group discussion. Students will be encouraged to explore, invent and build upon their art skills and knowledge progressively. There will be a written component to each project. Written work can include topic on; self-reflection, critiques, research, biography, or analysis of historical art periods.

CERAMICS II

This course is designed as an extension for the practiced potter. Ceramics II will take the knowledge from beginning Ceramics and apply it in a deeper way. Projects will focus around throwing on the potter's wheel, freestanding sculptures, and slip casting and mold making with plaster. All projects will be self-guided and students will emphasize and utilize their personal design strategies. Students will explore with diverse clay bodies, different glazing techniques, and alternative firing methods. Throughout the course students will be exposed to various artists' styles and engage in art history, art appreciation, art criticism, aesthetics and production. Both written and oral critiques will be an essential part of the course and allow students to share opinions and techniques, and receive and give feedback in a constructive non-judgmental approach. Sketchbooks will provide a place to practice techniques, note taking, glaze recording, complete the weekly homework assignments, and become a portfolio that represents the span and scope of the course. Student and teacher based rubrics will be used in assessment. During project development and critiques students will practice active listening, informal public speaking, problem solving, and group discussion. There will be a written component to each project. Written work can include topic on; self-reflection, critiques, research, biography, or analysis of historical art periods.

3-DIMENSIONAL ART:

Experience and explore creating art that can be viewed from any angle. This 3-dimensional art course experiments with a wide variety of techniques including but not limited to, sculpture, decorative ornaments, and bookmaking. Students engage in projects that include art history, art appreciation, art criticism, aesthetics and production. Sketchbooks will provide a place to practice techniques, take notes, complete the weekly homework assignments, and become a portfolio that represents the span and scope of the course. Student and teacher based rubrics will be used in assessment. During project development and critiques students will practice active listening, informal public speaking, problem solving, and group discussion. Students will be encouraged to explore, invent and build upon their art skills and knowledge progressively. There will be a written component to each project. Written work can include topic on; self-reflection, critiques, research, biography, or analysis of historical art periods. This is an excellent course for the beginning or advanced artist.

MUSIC

The Music classes offered at Montana Academy include Music Fundamentals/Making Music, Music in Our World, choral and instrumental ensemble, and private voice and guitar study opportunities. There are no pre-requisites for these courses. For the college-bound student intending to study music all the following classes are recommended. Montana Academy High School Graduation requirements include one credit of Fine Arts for non-college bound students and two credits of Fine Arts for college bound students.

Music Class Offerings

	Class	Non College Bound Students	College Bound Students
1.	Music in Our World	Recommended	Recommended
2.	Applied Music	Recommended	Recommended
3.	Academy Voices/Instrumental Ensemble	Elective	Elective
4.	Private Music Instruction	Elective	Elective

APPLIED MUSIC These are classroom courses focused on practical music making and the development of skills and acquisition of knowledge necessary to this endeavor.

MUSIC FUNDAMENTALS/MAKING MUSIC This course is designed for any student with an interest in music. Students gain general knowledge of the primary elements of music: melody, harmony, rhythm and form. These elements are explored through listening, playing, composing, analyzing and interpreting several different genres of music. Students are encouraged to apply the study of music fundamentals to writing, recording and/or performance projects to share within the class and the larger MA community. Students who have completed a 12-week block of Music Fundamentals, or enter MA with an advanced standing in music theory, may choose to propose for an independent study in some aspect of music-making, and/or may petition to take the Introduction to Recording/Sound Engineering class.

Resources: Surmani and Manus. Complete Essentials of Music Theory. 2008, Alfred Publishing Co. Teoria. Online Music Theory Tutorials and Exercises. © [José Rodríguez Alvira](#).

INTRODUCTION TO RECORDING/SOUND ENGINEERING A brief introduction to the art of sound recording (analog and digital) and digital manipulation of sound through the processes of sound engineering. Students should leave this class with a basic understanding of vocabulary, tools and techniques of sound recording. Class members serve as lab band for the class. (Prerequisite of Music Fundamentals/Music Making)

Resources: Paul White. The Basic Series. (Digital Recording, Microphones, Mastering, Live Sound, Effects and Processors, Mixing Techniques, MIDI, Home Studio Design, VST Instruments, Sampling). London: SMT.

MUSIC IN OUR WORLD

The focus of this class changes each block and will include the history of rock and roll, tribal music of the world (includes constructing instruments indigenous to many of the regions studied), and surveys of film music and Broadway musicals. Students should leave this class with an understanding of the roots, cultural context, salient characteristics and important literature of each studied genre. Course work includes a research paper on an appropriate topic of the student's choice. The individual class descriptions are listed below:

MUSIC GOES TO BROADWAY This course presents a brief introduction to and survey of the history of musical theater, focusing primarily on the music of the Broadway stage. Students should leave this class with an understanding of the cultural significance of American musical theater (along with its British counterpart), its salient characteristics, and aspects of culture that either influenced or were influenced by it.

Resources: Instructor generated handouts: Assigned reading of journal articles. Media!

MUSIC GOES TO HOLLYWOOD A brief introduction to and survey of the history of film music, focusing primarily on the music of the Hollywood sound stage. Students should leave this class with an understanding of the cultural significance of music written for films, its production techniques, aspects of culture that either influenced or were influenced by it, and the dominant composers in this genre.

Resources: Instructor generated handouts: Assigned reading of journal articles. Film!

TRIBAL/NATIVE MUSIC Music exists in all societies and is a basic activity of human life. This class will investigate music in several of the world's native cultures developing an understanding of musical style, the aesthetic viewpoints of differing cultures, and the function that music fulfills in these diverse societies. The student will not only encounter new musical expressions but also the philosophies and worldviews that accompany them.

Resources: Wade, Bonnie. Thinking Musically: Experiencing Music, Expressing Culture (Second Edition). New York: Oxford University Press.

HISTORY OF ROCK AND ROLL Popular music in the post-WW II United States has in many ways both influenced and served as a mirror of culture, particularly among the youth of the nation. It has been a catalyst for social and civic revolution, and has grown to be one of the largest economic forces in the world. This course will endeavor to provide students with an introduction to rock and roll music as both a social and an artistic medium, with an overview of its larger movements and their salient features.

Resources: Larson, Thomas E. History of Rock and Roll. Dubuque, Iowa: Kendall-Hunt Publ. Co. Time-Life DVD: The History of Rock and Roll, 5 volumes.

ENSEMBLES:

Music can be enjoyed in a couple of different ways, emotionally and intellectually. Music study requires discipline, as discipline is the foundation upon which the growing skills of refinement in learning, expression and interpretation can be built. Participation and a growing skill in music create a joyful and satisfying experience, and therefore lends to human contentment through self-expression. Music performance sets in motion a satisfactory meeting through musical sound of composer, performer, and listener, and as an experience in time, can provide emotional, physical, and intellectual satisfaction for all participating. The students will focus on a number of different kinds of music, working together as an ensemble to produce an aesthetically pleasing performance at various times in the year. These activities, which may be awarded credit, are offered on a pass/fail basis.

ACADEMY VOICES The Academy’s choral group is open to all who love to sing. Focus will be on individual/group vocal development through practice and performance of choral music from the renaissance to present day. Emphasis is on unaccompanied singing, great and challenging choral music, and camaraderie through music. Meets two nights per week (TBA)

INSTRUMENTAL ENSEMBLE The Academy’s instrumental group is comprised of students who have a music reading ability and a desire to play with others. The make-up of the group is determined each block. Meets two nights per week (TBA)

PRIVATE INSTRUCTION:

(Voice, Guitar; other instruments by arrangement)

Students may sign-up for half-hour private lessons during their study-hall if it coincides with the instructor’s free periods. Lessons will be on a first-come, first-serve basis and upon approval of the Treatment Team and parents. Students are responsible for providing or renting their own instrument. Students may elect to receive academic credit for their private instruction.

SOCIAL STUDIES PROGRAM

The social studies program at Montana Academy includes classes in U.S. History, World History, American Government, Civics, Geography/Global Issues, and Agricultural Studies. Specialty courses may also be available based on student need and interest. Graduation requirements include U.S. History and American Government. American Government, World History, and U.S. History are recommended for all students and required for college-bound students. All classes are designed around key concepts and require no pre-requisites.

Social Studies Class Offerings

Class	Non College Bound Students	College Bound Students
U.S. History	Required	Required
World History and Culture	Required	Required
American Government*	Recommended	Recommended
Civics*	Elective	Recommended
Geography/Global Issues	Elective	Elective
Agricultural Studies	Elective	Elective

* Satisfies the Government credit recommendation

U.S. HISTORY This two block course surveys major events and topics in American History. The first block of the course covers Colonial America, the Founding Era, Westward Expansion, and the Civil War and Reconstruction. The second block emphasizes the eras of the Roosevelts, the U.S. role in World War II, the Cold War, September 11th and the War on Terror. We examine historical events and trends through the eyes of people involved, exploring the key differences between the past and the present. Students take on individual research projects in which they teach the class about important historical events, people, or trends. They also read, write, and discuss current events with particular emphasis on relating them to past events. Reading, writing, and learning strategies are integrated

within content instruction. Students also participate in large and small group discussion. Text: *America: Pathways to the Present*, Prentice Hall; a variety of magazines and other readings as assigned by instructor.

WORLD HISTORY AND CULTURE This course focuses on major topics in world history and culture, east and west. Students analyze significant historical eras, major events, prominent personalities, and transformational historical processes within a social, historical, and cultural context with an eye to traditional values and religious traditions. The first semester concentrates on the development of peoples and world views beginning with European Paleolithic time then follows the ancient Silk Road into the “the land between two rivers” era of Mesopotamia’s rise of the first civilizations. Next the course continues east into ancient Persia and the Indus Valley civilization with the emergence of Zoroastrianism, the arrival of Hinduism, and the emergence of Buddhism. Students then complete their journey with a survey of Far Eastern history and traditions in China and finally Japan including Confucianism, Taoism, Zen Buddhism and Bushido. The second semester focuses on the rise and fall of ancient Greece and Rome and ends with early Medieval Christendom. Students become “Theoretical Historians” as they articulate their own theories to explain the rise of Athens and Rome to the level of empire and their eventual decline. Learning strategies and fundamental study skills for reading and listening comprehension are integrated within content instruction, and students work individually and collaboratively in a range of assessment tasks including writing assignments, objective tests, formal presentations, and research projects. Students also engage in large and small group discussion. Text: *World History, Patterns of Civilization*, Prentice Hall; augmented by a wide range of teachers resources.

AMERICAN GOVERNMENT In this one block course, students explore the structures and functions of the US. Government. They study the three branches of the federal government, including an in-depth examination of the Supreme Court, addressing how the interpretation of the Constitution has changed throughout American history. Students also will be introduced to American politics. By the end of the session, the students should have a strong foundation in American government, to help them become active and productive citizens. Text: *Magruder’s American Government*, Prentice Hall; a variety of magazines and other readings as assigned by instructor.

CIVICS This one block course focuses on citizen participation in the American government and American society. This course also can also satisfy the Government requirement. Students trace the role of individual and group action through several major citizen movements in U.S. history, which include the civil rights, labor, women’s issues, and environmental movements. The course also examines the practical application of skills addressing student and citizen action. Students undertake projects based upon their individual interests that have real-world application so that they begin to understand how citizens’ actions can effect changes in local, state and national governing bodies. Text: *Civics Today*, Glencoe. *Civics for Democracy*, Center for Study of Responsive Law; copyright 1992; a variety of magazines and other readings as assigned by instructor.

GEOGRAPHY/GLOBAL ISSUES This one block elective course surveys world geography according to five major geographic themes: location, place, human environment, movement, and region. Students select projects focusing on particular regions of the world: North America, Latin America, Europe, Asia, North Africa/Middle East, Sub-Saharan Africa, and Australia/New Zealand/Oceania. They gain an appreciation of the larger world around them and the migratory flows of people, resources, technology, and ideas around the planet. The course then focuses on current issues of importance to the world. Students examine international cooperation through multinational institutions such as the United Nations and international treaties. They explore conflicts with international implications, such as the Israeli-Palestinian conflict, tensions between India and Pakistan, North and South Korea, and concerns over the future of the Middle East. Students also examine major international issues such as global health, threats to the global environment, and poverty. Students participate in projects where they examine the history and evolution of specific conflicts, attempts at resolution, and potential future steps. Text: *World Geography*; a variety of magazines and other readings as assigned by instructor.

AGRICULTURAL STUDIES This spring and summer elective course combines the academic study of agriculture through history and around the globe with practical experience in Montana Academy’s gardens. Each block will feature a different academic focus, including such topics as Agriculture Through History; Cross-Cultural Perspectives on Food and Farming; and Small-Scale, Localized Agriculture in a Super-Sized, Globalized World.

Practical projects will depend on season, taking students through the cycle of planning, planting, and maintaining gardens. Text: Various readings provided by instructor.

MATHEMETICS and PHYSICS

Introduction

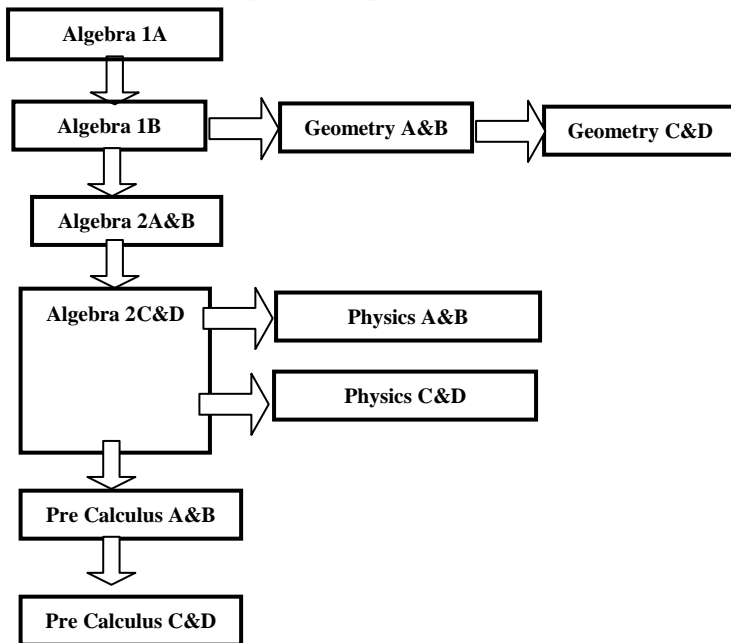
The mathematics and physics program at Montana Academy includes classes in first and second year algebra, geometry, pre-calculus, and non-calculus based physics. All classes are offered in two 12 week blocks. College bound students must take a minimum of three classes, typically Algebra I, Geometry, and Algebra II. Physics is a lab science class and strongly recommended for college bound students. (Please note: Physics is part of our science course offerings, but are listed in the mathematics section since it is taught by the math teacher.)

Mathematics and Physics Class Offerings

Class	Non College Bound Students	College Bound Students
Algebra I	Required	Required
Geometry	Required	Required
Algebra II	Elective	Required
Pre-calculus	Elective	Recommend
*Physics	Elective	Recommend

**Are also part of our science course offerings.*

Mathematics Prerequisite Map



Sequence and Prerequisite:

The normal sequence of math classes is Algebra 1, Geometry, Algebra 2, and then Pre-calculus. It is possible for some students to start Geometry after only taking Algebra 1A. It is also possible to start Algebra 2A before taking Geometry. Physics is a sequential course and should be started from the beginning.

ALGEBRA I Prerequisite: Pre-Algebra or being able to add, subtract, multiply and divide integers, decimals and fractions, to simplify fractions, and know multiplication tables (1 to 10). A previous introduction to variables, substitutions, equations, and the basic rules of algebra is helpful but not required. This course is an introduction to Algebra. Topics include evaluating and solving algebraic expressions, exponential notation, writing and solving proportions, using percentage, solving inequalities, mathematical operations on exponentials, scientific notation, multiplying, adding polynomials, factoring polynomials, and solving quadratic expressions. Calculators: A simple four-function calculator with a square root is all that is required, although a scientific calculator with exponential capabilities is especially helpful. Graphing is done entirely by hand in this class. Topics also include: solving quadratic expressions, graphing linear equations, finding equations of lines, and solving systems of equations both

graphically and algebraically, set theory, one & two variable inequalities, absolute values, using the Pythagorean Theorem & quadratic formula, solving rational equations, and simplifying radicals. Calculators: A simple four-function calculator with a square root is all that is required, although a scientific calculator with exponential capabilities is especially helpful. Graphing is done by hand.

Text: *Algebra 1*, Prentice Hall, by Smith, Charles, Dossey, Bittinger.

GEOMETRY Prerequisite: Algebra 1. This course is an introduction to Geometry. Topics include points, lines, and planes in two and three dimensions, parallel lines, congruence, similarity, and major categories of angles, triangles, and quadrilaterals. Postulates and theorems are explored and applied through compass/straight edge constructions, problem solving, and two column proofs. Calculators: a simple four-function calculator with a square root is all that is required. Topics also include the following: area and perimeter of polygons and circles, area and volumes of solids, trigonometry, law of sine and cosine, fractals, characteristics of circles, secant and tangents lines, and spherical geometry. Postulates and theorems are explored and applied through compass/straight edge constructions, problem solving, and two column proofs. The final few weeks are a thorough review of Algebra 1 as well as newer more difficult material including solving linear equations/inequalities, absolute values, functions & their graphs, and solving systems of equations with 3 variables.

Texts: *Geometry, Concepts & Applications*, Glencoe, by Boyd, Cummins, Carter, et. Al.

ALGEBRA II Prerequisite: Geometry. This course is a continuation of first year Algebra 1B & Geometry B. The course immediately starts with new material and assumes the student has recently completed Geometry B. Topics include the following: exponential manipulation, relations and functions, graphs of functions, polynomial functions, synthetic division, evaluating and/solving radical expressions and equations, matrices and determinants, mean, mode, median, standard deviation, imaginary and complex number systems, solving quadratics by factoring & graphing, completing the square, parabolas, circles, ellipses, hyperbolas, remainder and factor theorem, fundamental theorem of algebra, rational zero theorem, and Descartes' sign rule. Topics also include the following: probability, composite and inverse functions, rational functions & their graphs, introduction to log properties, introduction to sequences & series, trigonometry, laws of sines, law of cosines, trig functions, and introduction to trigonometric identities. Calculators: A graphing calculator such as the TI-83plus is required. Texts: *Algebra 2*, McDougal Little, by Larson, Boswell, et. All.

PRECALCULUS Prerequisite: Algebra 2. This course is the first part of a two part Pre-calculus class. Topics include the following: modeling data/graphs, regression, operations on functions, compositional functions, function transformations, inverse relations, polynomial functions, polynomial division, synthetic division, remainder and factor theorem, fundamental theorem of algebra, rational zero theorem, Descartes' sign rule, composite and inverse functions, rational functions, complex numbers, exponential functions, logarithmic functions, properties of log functions, logistic and exponential growth and decay with applications to finance, trigonometry, degrees/radians, DMS, unit circle, sinusoids, composite functions, inverse trig functions, laws of sines, law of cosines, trig functions, trigonometric identities, sum & difference, and multiple – angle identities. Topics also include the following: vectors, dot products, parametric equations, polar coordinates, De Moivre's Theorem, systems of equations, matrices, determinates, augmented matrices/row reduced echelon form, partial fractions, two variable inequalities, linear programming, conics, polar equations of conics, translation and rotation of axes, three-dimensional Cartesian coordinates, permutations, combinations, binomial theorem, probability & statistics, arithmetic & geometric sequences and series, and an introduction to differentiation and integration. Calculators: A graphing calculator such as the TI-83plus is required.

Texts: *Pre-calculus 7th Edition*, Houghton Mifflin Company, by Larson, Hostetler, et. All.

PHYSICS Prerequisite: Algebra 2. This is the first course in a two block non calculus based Physics class. Topics include the following: displacement, velocity, acceleration, projective motion, Newton's first & second laws, friction, work, conservation of momentum, rotational motion, torque, fluid dynamics, buoyancy, and Bernoulli's Equation. The course uses a succession of labs and stresses the scientific method to derive the basic equations of motion and then uses problems to develop problem solving techniques. Topics also include the following: heat transfer, thermodynamics, entropy, waves, characteristics of sound waves, properties of light, electricity, magnetism, charge, capacitance, inductance, resistance, and electric & magnetic fields. The course uses a succession of labs to derive the basic equations for electricity. Calculators: A scientific calculator with sin, cos, tan,

square root, and exponential capabilities is required. A graphing calculator such as the TI-83plus is recommended. Text: *Physics: Principles & Problems*, McGraw-Hill, by Zitzewitz, Haase, & Harper.

SCIENCE PROGRAM

Introduction

The science program at Montana Academy requires that all students complete three credits of lab science, two of which are chosen from the available core lab courses chemistry, biology, or physics. The third is selected from the list of electives given below. Working with team teachers, students choose electives with *careful* attention to college entry requirements, high school science credits already earned, and other factors. Typically the chemistry, biology and/or physics series are taken by college-bound students. Nearly all Montana Academy science classes include laboratory components and many involve fieldwork (Please note: Physics is listed in the mathematics program).

Science Class Offerings

Class	Credit Hours	Non College Bound Students <i>See Introduction above</i>	College Bound Students <i>See Introduction above</i>
Biology*	1.0	Core (<i>See above</i>)	Core (<i>See above</i>)
Chemistry*	1.0	Core (<i>See above</i>)	Core (<i>See above</i>)
Field Biology**	1.0	Elective	Elective
Physical Science*	0.5	Elective	Elective
Ecology and Evolution*	0	Elective	Elective
Earth Science*	0.5	Elective	Elective
Anatomy and Physiology*	0.5	Elective	Elective
Forensics*	0.5	Elective	Elective
Freshwater and Marine Biology*	0.5	Elective	Elective
Astronomy*	0.5	Elective	Elective
S.T.E.M. Topics	0.5	Elective	Elective

*Indicates laboratory-supported class.

**Indicates class requires fieldwork.

Note: Physics is detailed in the mathematics scope and sequence.

BIOLOGY: 2 Blocks, I Credit

The biology series is a course designed to introduce students to the fundamental concepts of modern biological science. The class satisfies one of the core lab sciences required by most colleges and is suitable for 9th up through 12th grade. No preliminary courses are required. This class emphasizes the investigative nature of science; how to approach a problem; how to design an experiment to answer a given question and how to collect objective data. Applications of the scientific method are demonstrated across curriculum boundaries, into the arts, literature, engineering, and other fields. In order to account for the multiple intelligences displayed in any classroom, material is presented in varied forms. Lectures are supplemented with visual material and animated videos of biochemical processes. Hands-on lab activities emphasize the concepts presented in the text. Students make use of the learning aids found in textbooks and transform the information into essays, drawings, and concept maps. Students develop and in-depth familiarity with selected sections of the curriculum and take on the responsibility for teaching that material to their peers.

Biology A begins at the atomic level with a study of basic chemistry, carbon compounds, and chemical reactions. The cell is introduced in terms of anatomical structure and function in both plants and animals.

Biology B begins with a study of photosynthesis followed by cellular respiration, cell growth, and division. An introduction to genetics precedes the structure and synthesis of DNA, RNA, and proteins. The block finishes with an overview of genetic engineering and the human genome.

Biology C introduces Darwinian evolution as the single central principal unifying the life sciences. Students examine the history of biology with an eye toward understanding the progression of thought from the classical Greek approach through the modern evolutionary synthesis. Evolutionary principals are expanded to explain the diversity of populations and the process of speciation.

In Biology D the fossil record serves as a basis for the study of the history of life on this planet and introduces basic taxonomic classification. Life's 5 kingdoms are broached with the study of viruses, bacteria, single-celled organisms, plant anatomy and physiology.

CHEMISTRY: 2 blocks, 1.0 credits

Chemistry is an introductory course designed to ignite interest and provide a broad foundation in the chemical sciences. Lectures are supplemented by laboratory exercises, demonstrations, video presentations, and computer animations. Intensive classroom discussions serve to explore the history and relevance of chemistry in today's society. Laboratory notebooks provide a means of communicating observations, experimental results, theories, and hypotheses to classmates and the teacher. Students select topics they find particularly interesting, research these topics, write formal essays, produce classroom presentations, and engage in additional experimentation.

Chemistry A begins with an examination of what science is, the scientific method, and how scientists approach the problems and opportunities they face. Properties of matter, states of matter, mixtures, energy, physical changes, measurement, chemical problem solving, mathematical conversions, atomic structure, chemical nomenclature, periodicity, and chemical quantities are all introduced.

In Chemistry B, students study the nature of chemical reactions, chemical solutions, stoichiometry, thermochemistry, the behavior of gases, the properties of electrons, the concept of the mole, molar mass, and molecular formulae.

In Chemistry C the different types of chemical bonding (ionic, covalent, and non-covalent) are examined in depth, along with properties of aqueous and other solutions, reaction kinetics, equilibria, acids, and bases.

Chemistry D covers oxidation-reduction reactions, electrochemistry, and properties of metals. Basic organic chemistry, including organic reactions, functional groups, and an introduction to biochemistry complete the course.

FIELD BIOLOGY: ½ Block, 1 Credit

Field Biology is a six week, one credit course concentrating on experimental methods in field ecology and natural history. We study local land forms, geology of the area surrounding Montana Academy, and methods of navigating and marking locations by GPS for field studies. The course emphasizes the structures of food webs and trophic cascades that a characteristic of the local temperate forest environment. Students study the impacts invasive species have in the area and the impacts human activities including logging. Substantial field time is passed on the Lost Trail Wildlife Refuge working with staff on projects including elk browsing on aspen trees and the relationship this has to the local wolf population. Invertebrate organisms including native and invasive crayfish and freshwater sponges are used as model systems to understand basic concepts in wetlands ecology. This course emphasizes data collection and analysis on a scale and depth that typifies many entry level college courses in field ecology.

PHYSICAL SCIENCE: 1 Block, 0.5 Credits

Physical Science is the first of a 24 week course designed to acquaint students with basic chemistry and physics. As it is a class for non-majors, the curriculum is set at the 9th and 10th grade level and only a minimal level of mathematics is required. The class primarily serves those students requiring additional elective credits in the sciences but lack the requirements and/or background to enroll in core chemistry or physics. Successful completion of this course earns students 1.0 credit in a laboratory science.

Physical Science A-B teaches the nature of science as an exploratory methodology using fundamental chemistry as its tools. Historical chemistry concentrates on the development of experimental models and theories over time. Students then discuss the atomic model and its relevance to modern observations and events. The synthesis of compounds and chemical mixtures is demonstrated in a laboratory setting. The chemistry underlying terrestrial geology and extra-terrestrial bodies, such as the creation of stars, is presented against a background of current events in these fields. Students explore marine systems, fresh water chemistry, and terrestrial ecology and examine how they fit into the chemical model. As with all lab courses, students keep detailed laboratory notebooks and

organize the information into formal laboratory reports. Students write essays to demonstrate their knowledge of basic chemical theory and some aspect of current chemical research. They will demonstrate how to develop testable questions and to design appropriate laboratory tests. Students also apply their classroom lessons to real world situations (for instance, students will evaluate for credit how well a typical evening news report explains some aspect of the science of chemistry).

Physical Science C-D is the second of a two block course designed to acquaint students with basic chemistry and physics. As it is a class for non-majors, the curriculum is set at the 9th and 10th grade level and only a minimal level of mathematics is required. The class primarily serves those students requiring additional elective credits in the sciences but lack the requirements and/or background to enroll in core chemistry or physics. Successful completion of this course earns students a 0.5 credit in a laboratory science.

ECOLOGY AND EVOLUTION: 1 block, 0.5 credits

Ecology is the scientific study of interactions of organisms with one another and with the physical and chemical environment. Evolution, on the other hand, is the change of a population of organisms from one generation to the next. Ecology is a science that contributes considerably to our understanding of evolution because evolutionary change occurs in direct response to ecological factors. In this course we study ecology and evolution side by side in order to make both sciences more understandable and fulfilling. The course covers topics in population growth and decline, competition, predation, symbiosis, community structure, succession, energy flow, nutrient cycling, biogeography, and invasive species. Topics in evolution include the molecular basis for population variability, natural selection, Mendelian inheritance, genetic drift, and early life on Earth. For field activities students visit the area's numerous examples of remarkable and beautiful terrestrial and aquatic ecosystems. In the laboratory students build models of simple aquatic ecosystems and study their behavior. The course puts heavy emphasis on developing strong, scientifically rigorous skills in thinking and empirical observation.

EARTH SCIENCE A&B: 2 Blocks, 0.5 Credits

Covers the topics of geology and oceanography with a laboratory emphasis on mineral identification and ocean water chemistry. The concepts of volcanism, plate tectonics, rock cycles, erosion, fossilization, and the biotic and abiotic components of the ocean ecosystems are introduced. Marine ecology is presented against a backdrop of ocean physics and processes.

Earth Science B deals with the topics of meteorology and astronomy. Climatology and its effects on the earth are stressed along with the composition of the atmosphere, the causes of weather, and historical time periods as identified by the effects on human history (ex. ice ages). Astronomy is presented against a historical background. Beginning with the early Greek and Moslem astronomers, the class follows changes in how humans regarded and studied the heavens. Following this the class moves into a detailed study of the solar system and Milky Way galaxy. The birth and death of stars is covered as are the origins and behaviors of the minor bodies in the solar system (asteroids, comets).

ANATOMY AND PHYSIOLOGY 2 Blocks, 0.5 Credits

This intensive 12 week laboratory course acquaints students with the basic principles of human anatomy and physiology at the micro and macroscopic levels. It begins with a study of cellular respiration and moves through tissue and organ level placements and functions. Students make extensive use of both computer animations and preserved laboratory specimens as they familiarize themselves with the mammalian system. Using a hands-on approach, students gradually find their way through the skeletal, muscular, nervous, digestive, endocrine, and circulatory systems of representative laboratory specimens. Students learn the effects of illicit drug use by handling and classifying diseased tissue. They take detailed, organized notes and maintain an up-to-date lab manual. The lab manual follows the format used in most college-level laboratory classes. Students are evaluated through written tests, essays, and laboratory practicum.

FORENSICS A-B: 2 Blocks, 0.5 Credits

Forensic analysis is usually associated with criminology, but in the classroom it provides an unparalleled means for teaching observational skills and deductive reasoning. Students learn to note and apply the subtle clues upon which so much of science relies. The class is taught at an 11-12 grade level but can be suitable for younger, self-motivated students. The class is presented against a background of historical criminal cases in order to demonstrate the evolution of forensic science over time. Individual methodologies and analyses are clarified (footprints, fingerprints, blood type, DNA, etc.). Where possible, students apply modern tools to unsolved cases and compare

individual results. Students are presented with a hypothetical case and graded on how well they apply their new-found knowledge. Surrounded by undeveloped nature, the Montana Academy campus offers an excellent field experience in which to train one's observational skills. Animal tracks and pathways abound in the surrounding woods and fields. The remains of predator kills are common. Migrating animals leave marks as to their passage. Students use clues like these to reconstruct past events, much like the criminal detective reconstructs a crime scene, and they spend substantial amounts of class time learning to read these events. The science of paleontology also figures into the curriculum. Bone detectives use clues found on the skeletons of extinct animals in order to reconstruct an animal's life history and these skills can be applied in a modern forensic approach toward criminology.

FRESHWATER AND MARINE BIOLOGY: 1 block, 0.5 credits

This course emphasizes fundamental biotic and abiotic features shared by freshwater and marine ecosystems. The course begins with selected topics in basic science relevant to aquatic environments. The chemistry of aqueous solutions, water solubility of gases, thermodynamics, and mechanics of water movement are covered prior to introductory units on geology, plate tectonics, volcanism, and atmospheric science. A major theme of the course is morphological and physiological adaptations of the major groups of aquatic microbes, invertebrates, and vertebrates. Physical and chemical constraints the environment puts upon biology, biodiversity, and evolutionary adaptation are discussed and explored during field observations and in the laboratory. The structure and function of coral reefs, tidal estuaries, rivers, alpine lakes, bogs, salt marshes, and swamps are explored in considerable detail. Primary production (photosynthesis), aquatic food webs, and nutrient cycling are topics covered in laboratory exercises and classroom activities. The course concludes by considering human impacts on aquatic environments, water quality, and the economic and cultural value of Earth's aqueous environments.

ASTRONOMY: 2 Blocks, 0.5 Credits

This course serves students who have either completed the core science curriculum and require additional background knowledge or who simply want an interesting academic challenge. The course opens with an outline of historical astronomy beginning with the earliest records of astronomical observations, applications, and mythologies among early peoples. Primitive and modern astronomical devices are covered from ancient Mayan calendars, to Stonehenge, to radio telescopes. Students study geometry as it relates to stellar distance and location. They also learn about the nature of gravity including the orbital motions of celestial bodies, the formation of planets, stars, galaxies, the effects of planetary moons, changes of seasons and oceanic tides within a background of current events. Basic chemistry as it relates to celestial processes is covered within the study of stars and heavy-element formation. Students learn how to classify stars as to size, temperature, and life expectancy. They also study celestial phenomenon such as quasars, neutron stars, and cosmic ray bursts as well as planets as the location, size, chemical make-up, and probable origin of each planet within our solar system. A portion of the unit is devoted to space exploration including early earth orbiters, the moon landing, deep space probes, and planetary rovers. The course culminates with an extended look at our own planet and its place in the galaxy. Students spend a number of evenings out of doors observing the visible stars, constellations, planets, and other celestial bodies. They learn about basic celestial navigation and use the positions of these bodies to judge the time of year. Students learn the use of telescopes, binoculars, and star charts. In addition to traditional tests and quizzes, students do research to complete in-depth essays concerning certain aspects of the course material. Students present their research with accompanying visual aids. Students are also evaluated on their knowledge of the local heavens, their use of star charts, telescopes and on class participation.

S.T.E.M Topics (Science, Technology, Engineering, Mathematics) 2 Blocks, 0.5 Credits

The U.S. Department of Labor expects there will be 1.2 million job openings in STEM related fields by 2018. STEM education integrates related concepts that are ordinarily taught as separate subjects and emphasizes the application of knowledge to real-life situations. This is a hands-on, minds-on class that stresses a project oriented approach to the various fields of scientific investigation. Students learn by doing, by seeing, by experiencing, and find their affinities and preferences through a trial and error approach. STEM teaches across subject lines and blends the various disciplines into a coherent and disciplined approach to problem solving. Class activities include, but are not limited to, and investigation of the Lost Prairie ecosystem, the integration of data analysis with modern software, aerial drone design, maintenance, and modification, unmanned aerial wildlife surveys, digital photography and image processing, telescope design and manufacture, computer animation, printed circuit design, computer technology, biomechanics, miniature submersible design and construction, remote wildlife photography,

limnology and remote sensing instrumentation, Global Positioning Systems and software, technical drawing, surveying, and architectural design. The class also incorporates aspects of S.T.E.A.M. (Science, Technology, Engineering, Art, and Mathematics). Music is composed on computer screens; speaker systems are designed and constructed with a goal toward maximum sound quality. 3D art finds a place in the molding of vertebrate skeletons, muscle, and tissue layers in facial reconstruction and ergonomic analysis. 2D drawings compare the anatomical similarities of otherwise unrelated organisms in phylogenetic studies.

PHYSICAL EDUCATION PROGRAM

SPORTS & FITNESS PROGRAM

The Afternoon Sports and Fitness course is an intramural program designed to engage all students in well directed physical activity. Throughout the year, the activities vary depending upon the season: basketball, soccer, cross-country skiing, cross country running, horseback riding, swimming, etc. Typically, students sign up for new and different physical activities every six weeks and are then assigned to that offering for the six weeks session. There are usually six to eight different activity options directed toward a variety of fitness levels, while encompassing different components of fitness. Monday, Wednesday, and Friday offerings are fitness oriented with a specific goal oriented toward physical fitness. Tuesday and Thursday offerings are game and team sports oriented.

LEADERSHIP AND FACULTY QUALIFICATIONS

Kathryn Sabol: Head of School,

M.Ed. in Multi-disciplinary studies with professional specialization in psychology, Montana State University-Billings, Billings, MT; BA in English Literature, Montana State University, Bozeman, MT; 20 years teaching English and Education courses at Montana State University, Billings.

Carol Santa: Director of Education and Owner of Montana Academy

Ph.D. in Educational Psychology with emphasis in reading, teacher, curriculum director, college professor, author of over fifty professional publications, author of *Pegasus*, a K-6 elementary reading program, developer of Project CRISS, a professional development program for teachers designed to improve student learning across the curriculum.

Philip O. Jones: Principal; English and History Instructor

MA English Literature, University of Montana; BA, English, History and Political Science; over two decades of teaching experience on both the high school and college levels (University of Montana and University of Maryland), including fourteen years teaching overseas in private college preparatory schools and more than a decade of teaching at Montana Academy; Teaching Certification: English, History and Political Science along with Administrative Certification: Grades K-12 Principal Licensure

David MacLean: English Instructor

MEd, Portland State University; BA Philosophy, University of Montana, Missoula; One and a half years with Montana Academy as a Weekend Team Leader, and eight years English teaching experience, seven with the Aspen School District. Teaching certification: Secondary English Language Arts, Montana and Colorado.

Connie L. Jones: Registrar, Librarian, Testing Coordinator, Study Hall Monitor

BS Elementary Education K-8; BS Special Education K-12; Eastern Montana College; Graduate work University of Montana; over three decades of teaching experience, K-8 Teacher, K-12 Guidance Counselor, K-12 Learning Specialist, including fourteen years teaching overseas in private college preparatory schools; nearly a decade of working for Montana Academy, Certification: Two Certifications, one in Special Education K-12 with Elementary Education, and also one in Library Media Specialist K-12.

Matt Keenan: Spanish Language Instructor

M. Ed. Curriculum & Instruction, Montana State University
BA, Foreign Languages & Literature – Spanish, James Madison University (Latin American Studies minor)
Nearly three years living and working in Spanish-speaking countries, including two-and-a-half years as a Peace Corps volunteer in Nicaragua completing community development projects. Nearly three years of experience

working in public schools, both as a substitute teacher and also as a youth development coordinator, creating educational and vocational curricula for after-school programs. Experience teaching both English to Spanish-speaking high school students, as well as Spanish to English-speaking high school students. Certification: State of Montana Educator License, K-12 Spanish endorsement.

Craig Hodges: Musical Arts Instructor

Doctor of Musical Arts, The Southern Baptist Theological Seminary; Master of Music, Colorado State University; Bachelor of Arts in Music, Kalamazoo College. Nearly three decades of experience as a performer, conductor and music teacher, including Professor of Music positions at Asbury University, Ouachita Baptist University and Campbellsville University, with an emphasis in choral/vocal music.

Claire Niewendorp: Visual Arts Instructor

BA in Fine Arts from the University of Montana, Missoula, MT. Claire has traveled internationally to teach. She has taught art in New Zealand and English as a second language in Chile. Her most recent teaching includes art classes for community based non-profits and organizing community art projects; Montana Teaching Certification in Art Education: K-12

William Wittpenn: Mathematics and Physics Instructor

BA in Math and Physics from Montana State University. Taught at Bozeman High School, Bozeman, MT: 9th-10th Grade Math. Also taught at Bozeman High School, Bozeman, MT: 11th-12th Grade Physics; Licensure and Endorsements from the State of Montana; Educator License-Certification and Endorsement in both Mathematics and Physics.

Richard M. Stern: Dean of Students; Social Studies Instructor

M.Ed. Curriculum Studies, M.S. Environmental Studies, University of Montana; BA Psychology, University of California; nearly a decade of high school teaching experience (Montana Academy and Missoula County Public Schools; Certification: Comprehensive Social Studies (History, Political Science, Geography, Economics and Psychology)

Jack C. Cesarone: Science Instructor

BA Biology (Marine Fisheries Emphasis), Western Washington University; M.Ed. Western Washington University; fifteen years researching marine mammals and fisheries concerns in Washington and Alaska with the National Oceanic and Atmospheric Administration; three years teaching at Montana Academy; Certification: Biology and General Science.

Recent College and University Acceptances		
2016	2015	2014
Alfred University, NY	Appalachian State University, NC	American Univ. of Public Affairs, DC
Becker College, MA	Arcadia University, PA	Augsburg College, MN
Beloit College, WI	Arizona State University, AZ	Barry University, FL
Boise State University, ID	Augsburg College, MN	Brandeis University, MA
Clark University, MA	Bard College, MA	Bard College, NY
Curry College, MA	Belmont University, TN	Carroll College, MT
Denver University, CO	Beloit College, WI	Clark University, MA
Earlham College, IN	California Lutheran University, CA	Coastal Carolina University, SC
Eckerd College, FL	Chapman University, CA	Colorado College, CO
Elon University, NC	Columbia College Chicago, IL	Colorado State University, CO
Geneseo College, NY	Connecticut College, CT	Columbia College Chicago, IL
Gonzaga University, WA	Eckerd College, FL	Connecticut College, CT
Goucher College, MD	Goucher College, MD	Earlham College, IN
Hunter College, NY	Grinnell College, IA	Fort Lewis College, CO
Ithaca College, NY	Hampshire College, MA	Furman University, SC
Kenyon College, OH	Hendrix College, AR	Guilford College, NC
Limestone College, SC	Ithaca College, NY	Hamilton College, NY
Marist College, NY	Knox College, IL	Ithaca College, NY
Marquette University, WI	Lesley University, MA	Lawrence University, WI
McDaniel College, MD	Lewis and Clark College, OR	Lewis & Clark, OR
Miami University, OH	Loyola University, MD	Loyola Marymount University, CA
Montana State University, MT	Lynn University, FL	Macalester College, MN
Ohio Wesleyan University, OH	Manhattanville College, NY	Miami University, OH
Penn State University, PA	Macalester College, MN	Montana State University, MT
Reed College, OR	Maryland Institute College of Art, MD	Muhlenberg College, PA
Seattle University, WA	McDaniel College, MD	Ohio Wesleyan University, OH
Skidmore College, NY	Menlo College, CA	Purdue University, IN
Susquehanna University, PA	Miami University, OH	Quinnipiac University, CT
University of Alabama – Honors, AL	Mount Holyoke, MA	Roanoke College, VA
University of Arizona, AZ	Oglethorpe University, GA	Skidmore College, NY
University of Bethlehem, PA	Portland State University, OR	St. Edward's University, TX
University of Delaware, DE	Quest University, British Columbia	SUNY University, Geneseo, NY
University of Idaho, ID	Savannah College of Art & Design, GA	Texas A&M, TX
University of Montana - Honors, MT	Skidmore College, NY	University of California, Davis, CA
University of Montana, MT	State University of NY-Purchase, NY	University of California, Santa Cruz, CA
University of NC - Wilmington, NC	St. Edward's University, TX	University of Colorado, CO
University of NC - Asheville, NC	The College of New Jersey, NJ	University of Denver, CO
University of Puget Sound, WA	Trinity University, TX	University of Maine, ME
University of Redlands, CA	University of Arizona, AZ	University of Montana, MT
University of Rochester, MN	University of Connecticut, CT	University of New Haven, CT
University of Vermont, VT	University of Dayton, OH	University of Puget Sound, WA
Washington College, MD	University of Delaware, DE	University of Rhode Island, RI
Whitman College, WA	University of Denver, CO	University of San Francisco, CA
	University of Findlay, OH	Whitman College, WA
	University of Kentucky, KY	Willamette University, OR

	University of Miami, FL University of Montana, MT University of New Haven, CT University of New Mexico, NM University of Puget Sound, WA University of San Diego, CA University of Southern California, CA University of The Arts, PA Wake Tech Community College, NC Wells College, NY Whitman College, WA Whittier College, CA	
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Recent High School Acceptances		
<p><u>2016</u> Dublin School, NH East Burke Academy, VT High School of Performing & Visual Arts, TX Kents Hill School, ME Linsly School, WV McClatchy High School, CA Ojai Valley School, CA The White Mountain School, NH Tilton School, NH Vermont Academy, VT Villanova Preparatory School, CA</p> <p><u>2014-2015</u> The Bush School, WA Dublin School, NH Gonzaga Prep. School, WA The Harvey School, NY Kents Hill School, ME The Khabele School, TX Millbrook School, NY Orinda Academy, CA Post Oak High School, TX Tilton School, NH Xaverian High School, NY Wasatch Academy, UT White Mountain School, TX</p> <p><u>2013</u> Asheville School, NC Buxton School, MA Kent's Hill School, ME Kimball Union Academy, NH Luzac College (High School), The Netherlands New Hampton School, NH Oliverian School, NH Proctor Academy, NH Solebury School, PA St. Edward's School, FL Stevenson School, CA The Darrow School, NY The Dublin School, NH The Webb Schools, CA Vermont Academy, VT Westover School, CT</p>	<p><u>2012 High School Acceptances:</u> Blue Ridge School, VA Boulder High School, CO Chatham Hall, VA Dublin School, NH New Hampton, NH Pacific Hills School, CA Parkland High School, NC Sierra Canyon School, CA Saint Andrews-Sewanee, TN The Peddie School, NJ Vail Mountain School, CO Vermont Academy, VT Vista Mar School, CA Westover School, CT</p> <p><u>2011 High School Acceptances:</u> American Hebrew Academy, NC Glenwood High School, IL Gould Academy, ME Hudson Bay High School, WA Mercersburg Academy, PA Vermont Academy, VT</p> <p><u>2010 High School Acceptances:</u> Deerfield Academy, MA Edmund Burke School, Wash. D.C. Georgetown Day School, Wash. D.C. Gonzaga Prep High School, WA King's Academy, CA Lawrenceville School, NJ Lincoln High School, OR Marin School, CA Montgomery High School, NJ Parish Episcopal School, TX Rolling Hills Preparatory School, CA San Diego School of Creative & Performing Arts, CA South Eugene High School, OR Vermont Academy, VT Westchester Academy, TX West Nottingham Academy, MD Williston North Hampton, MA</p>	<p><u>2009 High School Acceptances:</u> Cardinal Newman High School, CA Country Day School, NC Countryside Montessori School, NC Darrow School, NY Flathead High School, MT Justin-Sienna High School, CA Kents Hill School, ME Lawrenceville School, NJ Miss Hall's Prep School, MA New Hampton School, MA Northfield Mount Hermon, MA North Star Charter School, ID Palo Alto Preparatory School, CA Perkiomen School, PA Providence Day school, NC Shorecrest High School, WA Skyline High School, WA Stevenson School, CA The Montgomery Academy, AL Wasatch Academy, UT West Nottingham Academy, MD Williston Northampton, MA</p> <p><u>Previous High School Acceptances include:</u> Berkshire Academy, MA Cheshire Academy, CT Deerfield Academy, MA Idyllwild Arts Academy, CA Kent School, CT Mercer Island High School, WA Purnell School, NJ Vermont Academy, VT</p>