INDIAN SPRINGS

SCHOOL

Curriculum Guide

2022-2023 Edition

CONTENTS

1 | GENERAL

1.1 ADMINISTRATION

Head of School, *Scott Schamberger*

Assistant Head of School for Academic Affairs, *Jonathan Gray PhD*

Dean of Faculty, *Weslie Wald*

Dean of Students, *Hunter Wolfe*

Director of College Advising, *Amelia Johnson*

1.2 DEPARTMENTS

Arts, *Clay Colvin, Chair*

Computer Science & Engineering, *William Belser '80, Chair*

English, *James Griffin, Chair*

History, *Kelly Jacobs, Chair*

Languages, *William Blackerby '05, Chair*

Mathematics, *Chris Mullinax, Chair*

Physical Education, *Brad Skiff, Chair*

Science, *Tessa Magnuson, Chair*

1.3 COMMITTEES WITH ACADEMIC RESPONSIBILITIES

Academics Committee, *Jonathan Gray and Weslie Wald, Chairs*

Clay Colvin

William Belser

James Griffin

Kelly Jacobs

William Blackerby

Chris Mullinax

Brad Skiff

Tessa Magnuson

Amelia Johnson

Jourdan Cunningham

Commissioners of Education

Student External Engagement Committee, *Chris Tetzlaff and Hazal Mohammed, Chairs*

1.4 FACULTY

D'Anthony Allen, English

Neil Barrett, English

Jean Bassene, Languages

William Belser, Computer Science & Engineering

William Blackerby, Languages

John Brunzell, Mathematics

Athena Chang, Languages

Renee Chow PhD, English

Dan Clinkman PhD, History

Clay Colvin, Arts

Bob Cooper PhD, History

Colin Davis PhD, History

Emanual Ellinas, Arts

Jim Flaniken, Mathematics

Jonathan Gray PhD, Mathematics

James Griffin, English

Jonathan Horn PhD, Languages

Leslie Hurt, Science

Kelly Jacobs, History

Hye Sook Jung PhD, Arts

Mac Lacasse PhD, Mathematics

Tessa Magnuson, Science

George Mange, Languages

Pedro Mayor, Languages

Hazal Mohammed, Science

Chris Mullinax, Mathematics

Rebecca Neel, Mathematics

Dane Peterson, Arts

Justin Pino, Physical Education

Michael Sheehan, Arts

Jeffrey Sides PhD, Science

Brad Skiff, Physical Education

Chris Tetzlaff, Science

Stephanie Thomas, Mathematics

Greg Van Horn, Physical Education

Lauren Wainwright JD, History

Weslie Wald, Languages

Hunter Wolfe, History

Cal Woodruff, English

Lee Wright PhD, Arts

1.5 GRADUATION REQUIREMENTS

Department	Credits	Comments
Arts	1 credit	0.5 credits in Art History or Music History 0.5 credits in Arts
English	4 credits	At least one credit per year in grades 9-11
History	3 credits	1 credit of World History: To 1500 1 credit of AP World History or AP European History 1 credit of AP United States History
Languages	3 credits	Must be in same language
Mathematics	3 credits	Must include 1 credit at Algebra II level or higher
Physical Education	3 credits	0.5 credits WellFit and 0.5 credits 9th grade PE 1.0 credit in each of 10th grade PE and 11th grade PE
Science	3 credits	Must complete 1 credit in each of Biology, Chemistry, and Physics
Any	3 credits	

1.6 COURSE ENROLLMENT REQUIREMENTS

In general, students are required to enroll in seven, six, and five (Grades 8, 9-11, and 12, resp.) courses per semester.[1] At least four core subjects (English, History, Languages, Mathematics, Science) must be represented each semester; an MSON course or Independent Study cannot be used to reach the minimum course enrollment for a semester and will necessarily be the seventh (11th grade) or sixth (12th grade) course. Any deviation from the indicated enrollments must be approved by the Assistant Head of School for Academic Affairs.

To enroll in seven or more courses in grades 9-12, an Academic Overload form must be submitted to the Academics Committee for approval. Similarly, if a student wishes to enroll in two or more courses in a core subject, the corresponding form must be submitted to the Academics Committee for approval.

Grade 8

Students in 8th grade are required to enroll in

1. Art 8
2. English 8
3. 8th Grade Social Studies
4. A Chinese, French, Latin, or Spanish course

---

1 10th and 11th Grade PE are not used in enrollment counts.

5. A mathematics course

6. PE 8

7. Science 8

Grade 9

Students in 9th grade are required to enroll in

1. English 9

2. World History: To 1500

3. A Chinese, French, Latin, or Spanish course

4. A mathematics course

5. WellFit and PE 9

6. Biology

Grade 10

Students in 10th grade are required to enroll in

1. Critical Reading & Analytical Writing

2. AP World History or AP European History

3. A Chinese, French, Latin, or Spanish course

4. A mathematics course

5. Art History or Music History

6. Chemistry

7. 10th Grade PE

An additional semester elective must be chosen to complement Art History or Music History thereby bringing the total course enrollments to six per semester (not including PE).

Grade 11

Students in 11th grade are required to enroll in

1. AP English Language or Two English Electives

2. AP United States History

3. A Chinese, French, Latin, or Spanish course

4. A mathematics course

5. 11th Grade PE

Additional courses must be chosen to bring the total course enrollments to six courses per semester (not including PE).

Grade 12

Students in 12th grade are required to enroll in AP English Language or Two English Electives. Additional courses must be chosen to bring the total course enrollments to five courses and at least four core subjects (English, History, Languages, Mathematics, Science) are represented each semester.

1.7 GRADING SCALE AND GPA

A students grade point average (GPA) is calculated at the end of each year to reflect our cumulative grading model. Year and cumulative GPAs are recorded on the transcript each year. Independent Studies, MSON courses, 10th Grade PE, and 11th Grade PE are not included in GPA calculations. [2]

Starting in the Class of 2024, the GPA calculation was changed to an unweighted 4.0 system wherein the quality points earned are jointly proportional to the numerical grade earned in the course and the grade point credits for the course. E.g., if a student earns a grade of 87 in a 1.0 course, then the quality points earned are $0.87 \cdot 4.0 \cdot 1.0 = 3.48$. A more comprehensive example follows:

Course	Grade	Quality Points Possible	Quality Points Earned
English 9	91	1.0	$0.91 = 0.91 \cdot 1.0$
World History: To 1500	86	1.0	$0.86 = 0.86 \cdot 1.0$
Latin II	94	1.0	$0.94 = 0.94 \cdot 1.0$
Adv Geometry	82	1.0	$0.82 = 0.82 \cdot 1.0$
WellFit	90	0.5	$0.45 = 0.90 \cdot 0.5$
PE 9	100	0.0	$0.00 = 1.00 \cdot 0.0$
Biology	78	1.0	$0.78 = 0.78 \cdot 1.0$
Sum Total		5.5	4.76

The GPA earned for this year would then be $(4.76/5.5) \cdot 4.0 = 3.46$. In general, let $p_1, p_2, \ldots, p_k$ be the quality points possible for the respective courses wherein a particular student earned grades $g_1, g_2, \ldots, g_k$. The GPA corresponding to these k courses can be calculated by[3]

$$GPA = 4.0 \times \frac{\sum_{i=1}^{k} g_i \cdot q_i}{\sum_{i=1}^{k} q_i}$$

Note: While not reflected on transcripts, faculty may use the following grade translation table between numerical and letter grades:

$$\underbrace{97}_{A+} \quad \underbrace{93}_{A} \quad \underbrace{90}_{A-} \quad \underbrace{87}_{B+} \quad \underbrace{83}_{B} \quad \underbrace{80}_{B-} \quad \underbrace{77}_{C+} \quad \underbrace{73}_{C} \quad \underbrace{70}_{C-} \quad \underbrace{67}_{D+} \quad \underbrace{63}_{D} \quad \underbrace{60}_{D-} \quad \underbrace{0}_{F}$$

1.8 ACADEMIC POLICIES

1. *Drop/Add*

2. *External Coursework Reflected in GPA*

   GPAs recorded on the transcript include only coursework completed at Indian Springs. Because grading scales and course requirements vary from school to school, we do

---

2 For calculation purposes, these courses have 0.0 quality points possible.
3 Equivalently, one can take the dot product of the Q and G vectors, divide the latter result by Q in ℓ_1 norm, and then multiply by 4.

not print courses taken at other schools on our transcript nor do we include them in the GPA. When the student applies to college, any transcripts from other schools recording grades from 9th grade and above are sent alongside the Indian Springs transcript.

3. *Academic Overload*

Students in grades 9-12 who wish to enroll in seven or more courses in a semester must complete the appropriate form. Students must obtain the signature of their parent and advisor. The form is then provided to the Academics Committee for review. The Assistant Head of School for Academic Affairs will evaluate performance of the student during the first quarter of the school year. Students who are struggling in their overload class will be asked to remove a course at that time.

4. *Departmental Overload*

Students who wish to enroll in more than one course in a department during a semester must complete the appropriate form. Students must obtain the signature of their parent, advisor, and department chair. The form is then provided to the Academics Committee for review. The Assistant Head of School for Academic Affairs will review performance of the student during the first quarter of the school year. Students who are struggling in one or both classes will be asked to remove a course at that time.

5. *AP Exam Requirements*

The school deadline for choosing to take an AP exam for a course in which they <u>are enrolled</u> is the last day of Fall classes. This deadline is after the CollegeBoard's deadline. The CollegeBoard does not charge a fee if a student registers for an AP exam and cancels prior to their published date (typically mid-November). If a student cancels after that date, the CollegeBoard applies an "unused/canceled exam fee" per unused/canceled exam.

If a student wishes to take an AP exam for a course in which they <u>are not enrolled</u>:

a) Complete the required form and submit it to the Assistant Head of School for Academic Affairs by the second Friday in September. The form may be submitted on paper or by email.

b) The form will be reviewed and an approval will be considered based upon academic standing, exam preparation, exam load, scheduling constraints, and faculty interviews. The decision will be communicated by email.

c) If approved, you must contact the AP Coordinator by the last day of classes in September to confirm your intent to take the exam. The standard cost per AP exam will be billed home once confirmed.

2 | ARTS

2.1   PORTRAIT OF A GRADUATE

An Indian Springs School graduate, having completed the course of study in Arts, will . . .

- Demonstrate a command of content specific to their media of study.

- Demonstrate an appreciation for the acquisition of new content, knowledge, skills, and understanding, and be able to apply a methodical approach to acquire such.

- Demonstrate an understanding of various efficient practice/rehearsal techniques.

- Demonstrate practical studio safety, time-management, and self-discipline skills.

- Understand the process of audition, rehearsal, and performance.

- See the value in a positive studio and rehearsal environment, and understand how to make positive contributions

- Understand, demonstrate, and appreciate the skill of communication in all forums.

- Realize the value of the arts in the formation and communication of ideas.

- Understand the need for collaboration and mutual respect in ensemble projects.

- Recognize the value of empathy in collaborative and performative activities.

- Value perseverance and follow-through in individual and group activities.

- Develop appreciation of positive leadership skills in their particular artistic medium.

- Acquire an inner compulsion to express themselves in a creative, not imitative, form.

- Develop a healthy appreciation of self, peer, and professional critiques and reviews.

- Value/respect their own perspective and aesthetic and learn to value/respect the perspective and aesthetic of others.

- Understand and possess visual/musical/drama literacy, allowing them to effectively navigate the contemporary experience.

- Think critically about theatrical, visual, and aural information when it is presented and will be conscious of their theatric, visual, and aural culture output.

- Self reflect/empathize/identify with or draw personal contrast with historical voices, styles and periods.

- Develop an intellectual understanding of art concepts and a vocabulary to describe, analyze, compare, and judge works of art in various media and traditions.

- Become critically-thinking, motivated, disciplined, passionate, ethical, respectful, empathetic and courageous young artists prepared for a global society.

2.2   COURSE DESCRIPTIONS

2D Design (*Fall Semester*)   Clay Colvin

In this course, students explore various approaches to drawing and painting. They discover how to create space and form through mark making, value, perspective, and color. Subjects include still life, landscape, portrait, and the human figure. Learning about the principles of design strengthens students8217; compositions. By keeping a sketchbook/journal, students have the opportunity for further practice and exploration of individual interests.

Acting I - *Fall Semester*   Dane Peterson

Open to all students, whether novice actor or veteran performer, this course introduces the basics of acting: concentration, relaxation, observation, and characterization. Students learn juggling and pantomime techniques and use daily improvisations and theater games to build characterization skills and create original material for performance. At the end of the semester, they perform short scenes and monologues, both scripted and original. Additionally, students attend and critique local theater performances.

Art History - *Fall Semester*   Clay Colvin

Art History is one of the broadest and deepest disciplines in the humanities. In the 10th grade semester survey course students will examine the visual arts from the Paleolithic era to the present. The course will employ a variety of critical, theoretical and methodological perspectives and approaches. The main goal is to equip students with visual literacy to allow them to effectively navigate the contemporary experience.

Contemporary Music Ensemble - *Fall and Spring Semesters*   Emanual Ellinas

Digital Photography - *Fall and Spring Semesters*   Michael Sheehan

Intro to Black & White Photography - *Fall and Spring Semesters*   Michael Sheehan

Recording Arts - *Fall and Spring Semesters*   Emanual Ellinas

This is a semester course designed to introduce students to the principles of sound engineering and production. Technical objectives include learning about sound and acoustics as well as developing the "ear" of the students; that is, increasing their ability to interpret better what they hear. Becoming familiar with equipment by hands-on experience in a multi-track recording studio is also part of the technical side. Students are exposed to analog and digital formats.

Recording Arts is largely a laboratory-type course, and therefore, attendance and participation are essential. The students take increasing control of the studio and project as the semester moves along. One of the goals is to let them "run the ship" by the end of the course.

Stagecraft - *Fall and Spring Semesters*   Dane Peterson

In this course, students learn the basics of set construction and scenery and lighting design. They build, paint, light a set and serve as stage crew for one major Indian Springs theater production during the semester. In addition, students set up and run lights, sound, and media for Town Meetings and other school functions on a rotating basis.

3 | COMPUTER SCIENCE & ENGINEERING

3.1 PORTRAIT OF A GRADUATE

An Indian Springs School graduate, having completed the course of study in Computer Science & Engineering, will . . .

- Learn that solutions to problems, either engineering or programming, are best solved by following a process. While the exact steps can vary from model to model, there is a commonality among all of the procedures.
    - Engineering problems are best solved with an iterative design cycle that moves through research, decomposition, modeling, implementation, measuring and testing, communicating results, and back to research.
    - Programming problems are best solved with Computational Thinking that decomposes problems, recognizes patterns, abstracts the rules for those patterns, and then produces algorithms.

- Know how to learn. A graduate will understand the skills and steps needed to learn, discover, and master new information on their own.

- Be able to seek knowledgeable assistance correctly. A graduate will understand how, when, and where to get assistance from knowledgeable people.

- Be able to communicate and teach what they know. A graduate will understand how to easily transfer knowledge and skills.

- Know the four pillars of Object Oriented Programming (OOP); Abstraction, Encapsulation, Inheritance, Polymorphism.

- Know fundamental programming concepts outside of OOP, such as
    - Data types and data collections; how to access them and what their limitations are.
    - How to make decisions with relational, logical, and control operators.
    - Big O: a representation of the time and space complexity of algorithms as they scale.
    - Recursion
    - Top Down Design / Bottom Up Implementation

- Understand how a team efficiently approaches learning about and mastering a topic or area of expertise. A graduate will understand how to manage time and resources for a project.

- Learn the basic fundamentals of Artificial Intelligence / Neural Networks / Machine Learning

- Be able to document their work. A graduate will understand the skills and steps needed to create and maintain Engineering, Technical, and Code Repository documentation.

- Be proficient at managing code in a team software repository and presenting code in a public code repository

- Be proficient enough with Linux to be more than exceeding comfortable using it in a college environment. A graduate will be conversant enough to accomplish basic programming, data management, and data analysis.

3.2 COURSE DESCRIPTIONS

4 | ENGLISH

4.1 PORTRAIT OF A GRADUATE

An Indian Springs School graduate, having completed the course of study in English, will . . .

- Understand and interpret visual texts (cartoons, sculpture, etc.).

- Craft a visual response to texts that demonstrates understanding of the texts rhetorical purpose.

- Demonstrate guided mastery of database use.

- Demonstrate mastery of close reading of texts.

- Demonstrate mastery of parts of speech and how they are used.

- Understand and adjust arguments for a variety of audiences.

- Master reference text usage (Dictionaries, Encyclopedias, Journals, etc.).

- Demonstrate mastery of modes of writing.

- Exhibit understanding of textual context including, but not limited to culture, history of composition, history of the book/genre/form, biography of the author.

- Master MLA citation form.

- Be competent in assessing appropriateness of secondary sources.

- Understand that reading, writing and thinking are concurrent processes.

- Be able to "read" situations, as well as poems or short stories, and be able to "confirm" the "text" (discuss its purpose, tone, significance, argument, etc.) and "complicate" the "text" (question the authors assumptions and linguistic/ rhetorical choices).

- Communicate well to a variety of audiences.

- Be independent, lifelong readers.

- Be able to make a cogent, cohesive argument based on textual evidence.

- Be able to research independently.

- Be able to edit his or her own and others writing.

- Recognize logical fallacies.

- Have used personal essays as a vehicle for self-reflection.

- Analyze and be able to criticize the authors "purpose" with appropriate objectivity.

- Write with subtlety and finesse.

- Understand plagiarism and intellectual dishonesty.

4.2   COURSE DESCRIPTIONS

5 | HISTORY

5.1 PORTRAIT OF A GRADUATE

An Indian Springs School graduate, having completed the course of study in History, will . . .

- Be prepared for a future of lifelong learning and active, responsible global citizenship.
    - Recognize that individuals are agents of historical change and that an individual today can be an engaged and informed citizen who affects change in the world.
    - Understand the differences between major forms of political, economic, and social organization across times and places
    - Theorize and practice the fundamentals of individual and group self-governance
    - Have developed strategies to maximize their own learning strengths, including digital and civic literacy necessary to navigate the modern world of information and mis/disinformation

- Possess an historical perspective of who they are, why the world is the way it is, and how the past systemically influences the present.

- Grasp the interconnectedness of geography, politics, economics, social conditions, and ideas; the role of power in each; and the impact of each on the human experience.
    - Think critically, including:
    - Assimilate and synthesize large amounts of information,
    - Evaluate the credibility and limitations of evidence and arguments
    - Construct and defend theories of the human condition, such as political theory, social theory, and theory of mind
    - Analyze and interpret historical documents
    - Problem solving.

- Think historically about relationships/connections (comparison, causation, contextual) in the human experience.
    - Think chronologically and explain continuity and change.
    - Be able to draw comparisons between time periods and regions in order to identify transcending themes.
    - Be able to analyze cause and effect, including multiple causation, and to challenge arguments of inevitability.

- – Be able to compare and contrast competing historical narratives and evaluate major debates among historians.

- Communicate effectively, including reading comprehension, writing, speaking, and listening.
  - – Be able to create and support contestable thesis statements
  - – Be able to structure and support logical argument.
  - – Be able to interpret and deconstruct the arguments of others

- Be able to conduct effective research.
  - – Be comfortable with independent learning.
  - – Be able to formulate historical questions.
  - – Be able to obtain and evaluate data (both primary and secondary sources), consider gaps in what we know, and use data to support an argument.
  - – Understand the difference between ones own original thought and someone else's.
  - – Be competent with MLA and Chicago styles.

- Be sensitive to bias and understand that the present influences our understanding and interpretation of the past.
  - – Be able to distinguish between different forms of bias and understand how points of view shape peoples interpretations of events and ideas

5.2   COURSE DESCRIPTIONS

6 | LANGUAGES

6.1 PORTRAIT OF A GRADUATE

An Indian Springs School graduate, having completed the course of study in Languages, will . . .

- Engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions.

- Understand and interpret written and spoken language on a variety of topics.

- Demonstrate an understanding of the relationship between the products and perspectives of the culture studied.

- Reinforce and further their knowledge of other disciplines through the target language.

- Acquire information and recognize the distinctive viewpoints that are only available through the target language and its cultures.

- Demonstrate familiarity with the history of the cultures studied and key literary works and authors in those cultures.

- Present information, concepts, and ideas to an audience of listeners or readers on a variety of topics.

- Demonstrate an understanding of the nature of language through comparisons of the language studied and their own.

- Demonstrate an understanding of the concept of culture through comparisons of the cultures studied and their own.

- Use the language both within and beyond the school setting.

- Show evidence of becoming a life-long learner by using the language for personal enjoyment and enrichment.
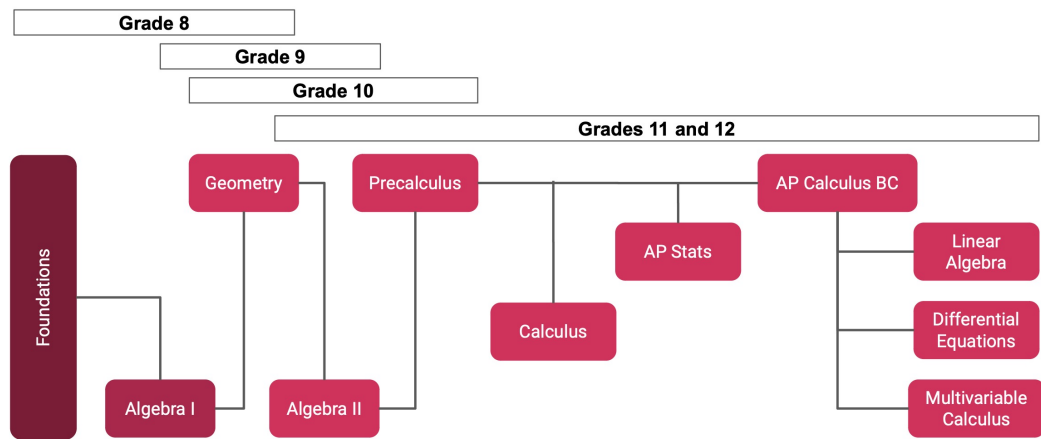
6.2 COURSE DESCRIPTIONS

7 | MATHEMATICS

7.1 PORTRAIT OF A GRADUATE

An Indian Springs School graduate, having completed the course of study in Mathematics, will . . .

- Perform elementary calculations and apply mathematical processes comfortably.

- Need to understand the whys and hows of mathematics.

- Communicate efficiently, accurately, and clearly in writing and speech.

- Form logical, coherent arguments and judge the validity of others arguments.

- Apply concepts and techniques from elementary mathematics to the world around them.

- Use prior understandings to inform and strengthen new concepts.

- Understand the importance of initial steps, that failure is a part of learning, and that growth is afforded by persistence.

- Appreciate the ubiquity of mathematics in the world around them.

- Guide personal decisions by specifying assumptions/non-negotiables and then make inferences based on these.

- Apply mathematics to the sciences to form inferences and support the Scientific Method.

- Apply the language of mathematics to the sciences to form inferences and support the Scientific Method.

- Connect the numerical, algebraic, graphical, and verbal perspectives of mathematics.

- Determine the appropriate structure or mathematical model so that one may
    - Apply knowledge and skills to ...
    - Solve known and novel problems and ...
    - Interpret the results or outcomes from the structure or model

- Collaborate and employ team-based approaches to explore concepts and solve problems.

- Use the appropriate technological tool for the problem at hand.

- Use statistics to become an educated citizen of our modern, data-driven world.

7.2   VERTICAL ALIGNMENT

Grade 8

Grade 9

Grade 10

Grades 11 and 12

Foundations

Geometry

Precalculus

AP Calculus BC

AP Stats

Calculus

Algebra I

Algebra II

Linear Algebra

Differential Equations

Multivariable Calculus

7.3   COURSE DESCRIPTIONS

8 | PHYSICAL EDUCATION

8.1 PORTRAIT OF A GRADUATE

An Indian Springs School graduate, having completed the course of study in Physical Education, will . . .

8.2 COURSE DESCRIPTIONS

9 | SCIENCE

9.1 PORTRAIT OF A GRADUATE

An Indian Springs School graduate, having completed the course of study in Science, will . . .

- Engage in scientific questioning to extend thinking and guide research.

- Utilize experimental design and the scientific process to explore new ideas or solve problems.

- Implement appropriate data collection techniques and analysis to interpret relevant scientific data versus biased data.

- Evaluate scientific evidence to reach a valid conclusion.

- Understand and appreciate the interconnectedness of the sciences.

- Conduct literature reviews in order to incorporate other research into science writings.

- Present research in front of a group of peers and defend research under questioning.

- Apply appropriate mathematical principles and graphical analysis to solve problems and support ideas.

- Utilize statistical tests and methods to accept or fail to accept scientific hypotheses.

- Use the appropriate lab equipment, techniques, and technology when investigating scientific inquiries.

- Use models and representations to communicate scientific phenomena and solve scientific problems.

- Engage in problem solving, inquiry, and design of innovative solutions.

- Integrate prior knowledge with new information in novel and creative ways to strengthen overall understanding.

- Develop curiosity for the natural world with regard to scientific inquiry.

- Apply conceptual understanding and critical thinking to real world problems.

- Promote environmental stewardship.

- Demonstrate the ability to collaborate with peers during scientific explorations.

- Make a scientific claim and provide supportive evidence.

- Connect the microscopic to the macroscopic across scientific disciplines.

9.2 COURSE DESCRIPTIONS

10 | INDIVIDUALIZED LEARNING

10.1   COURSE DESCRIPTIONS

11 | MALONE SCHOOLS ONLINE NETWORK

11.1 COURSE DESCRIPTIONS

12 | APPENDIX

12.1   SPECIAL DATES

12.2   DAILY SCHEDULE

12.3   SPECIAL SCHEDULES

12.3.1   45 Minute Activity Period

12.3.2   60 Minute Activity Period

12.4   FORMS

12.4.1   Academic Overload Form

12.4.2   Departmental Overload Form

12.4.3   Non-Springs AP Exam Request

12.5   SAMPLE ACADEMIC PATHS

12.6   FAQ