

# CENTREVILLE LAYTON SCHOOL

## Course Offerings

### Visual Art Course Offerings

#### Art Foundation

In this class students learn to use a variety of mediums to represent realistic or fanciful subjects. 9<sup>th</sup> grade students are required to take this course in the fall. Art foundation is a prerequisite course for any other art elective courses.

#### Art-The Figure

Students will study the human figure. Students will learn new skills in rendering a realistic figure by drawing, painting and cartooning. Materials used will be pencil, charcoal, watercolor paint, pen and ink. *Students must complete Art Foundation before enrolling in this course.*

#### Art-Painting

Painting skills taught will be color theory and strategies for color mixing, preparation of surfaces, making opaque and transparent marks and paint, brush handling and care and proper use of acrylic and watercolor paint. Projects include a watercolor painting on paper and acrylic paintings on canvas and wood. Materials introduced are acrylic paint, canvas, watercolor paint and watercolor papers. Important painters past and present will be introduced relevant to subject matter and styles chosen by the students. Students will visit the Delaware Art Museum to study painting styles and applications. Subject matter is suggested by the instructor, but students are encouraged to think out of the box, to push the envelope and to be creative in their design ideas for this upper level class. *Students must complete Art Foundation before enrolling in this course.*

#### Art-Literary Art Journal

Students incorporate student writing and create art to publish a literary arts journal for the Upper School. They will learn strategies for planning, time management and team building as well as the visual arts skills

introduced specific to the project. *Students must complete Art Foundation before enrolling in this course.*

#### Elements of Television and Film

Students will view clips from television and film. They will identify the five aesthetic elements of media. Those elements include light, the two-dimensional field, three-dimensional space, time/motion, and sound. Students infer what the director is communicating by using these aesthetic elements.

#### Filmmaking I

Students use the aesthetic elements they learned in the elements class in short film projects. The course begins with short projects focusing on each element. The final project incorporates all elements into a short 2-3 minute film. *Students must complete Elements of Television and Film before enrolling in this course.*

#### Filmmaking II

Students incorporate the aesthetic elements of film and basic digital editing techniques to create a short 10-20 minute film by the end of the quarter. *Students must complete Elements of Television and Film and Filmmaking I before enrolling in this course.*

#### Yearbook

Students collect and document happenings for the Centreville Layton School yearbook. Students learn elements of design, photography, and journalism as they create yearbook pages for the school.

#### Google Applications

Learn about the free, and always accessible, Google Apps. Over the course you will be briefly introduced to the Google Apps suite: Gmail, Calendar, Docs (word processing), Sheets (spreadsheets), and Slides (presentations). These applications will help you in high school and beyond.

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### Performance Art Course Offerings

#### Acting I

In this class students learn to act using the Think/Feel/Do method. Students participate in theatre games, dramatic readings, and acting in a number of scenes. At the end of the quarter students perform a scene for their acting peers.

#### Acting II

Students continue to develop acting talent. They will also create and direct short scenes for classmates. Students will perform the scenes for an audience at the end of the quarter. *Students must complete Acting I before enrolling in this course.*

#### Music Exploration

This class is highly interactive and promotes music appreciation, critical listening and problem solving, both in groups and individually. Students have the opportunity to explore a variety of instruments while discovering and building on their aptitudes and comfort levels. Music Exploration is *an entry level course* in the music program.

### Carpentry I-Animal Houses

If you are interested in either basic carpentry, building bird housing or animal shelters this elective is for you. The class will be using basic hand tools (hammer; saw, hand drill, square and measuring stick). Class participants will research some basic shelter for the housing they want to build, create a list of what they need, and design the blue prints and directions to make the shelter, and complete the building of the shelter. Students will mount the shelter that they build on the Centreville Layton campus.

### Carpentry-Boxes

Students build a shaker step-stool with hand tools. The step stool contains through-mortice-and-tenon joints, and four dovetailed corner braces. *Students must complete Carpentry I before enrolling in this course.*

### Carpentry I-Box Car Derby

Students are introduced and/or strengthen their understanding of design, construction, hand tools, and the use of hand tools through building a soap box derby car. As students are placed in teams this course develops and strengthens communication and cooperation skills. Students are expected to collaborate in the production of a vehicle to be “road ready” for competition on the last day of class.

### Cooking-Simple Dishes

What goes into making a great meal? Learn the basics of cooking, from shopping for ingredients to using cooking utensils properly. Students will find and follow recipes to make dishes for breakfast (waffles, pancakes, omelets), lunch (cheeseburger, cheesesteak, grilled cheese and soup), and dinner (pizza, spaghetti and meatballs). Join us in the kitchen and learn how to cook.

# CENTREVILLE LAYTON SCHOOL

## *Course Offerings*

### **Fly Fishing**

A life time sport elective with educational and “vacational” qualities. If you choose the fly-fishing elective this quarter you will learn:

- Fly Fishing rod anatomy and assembly
- Casting techniques
- How to hook, play, land and safely release a fish
- How to tie flies
- How to Tie essential knots
- How to “Read” a waterway (Understand where fish are, why they are there and how to best approach them)
- Entomology (specifically - stages in the life cycle of aquatic macro-invertebrates.....Caddis flies, May flies and Stone flies)
- Proper fly selection - How/when to use certain flies and how to present them
- Appropriate GEAR selection – How/when to use certain fly-fishing equipment and accessories

### **Physical Education Course Offerings**

#### **Football and Archery**

Students will begin the quarter participating in team building activities and strategies. They learn how to work as a unit and develop leadership skills. Students then move into a unit on football, learning rules and techniques appropriate for the beginner as well as the more experienced athlete. The quarter will culminate with a unit on archery. Students will focus on safety, skills, and technique. This course earns 1/8 credit toward your physical education elective requirement.

#### **Physical Education 9**

This course focuses on a variety of team oriented sports (hockey, basketball, handball, soccer, football, etc.). Games are used to teach skills in isolation. As the games are played, the students are encouraged to discuss strategies for improving team performance. Strategies are introduced by the teacher and discussed by the class as well. Part of the course includes strength training and core building.

#### **Physical Education 10**

This course focuses on a variety of team oriented sports (hockey, basketball, handball, soccer, football, etc.). Games are used to teach skills in isolation. As the games are played, the students are encouraged to discuss strategies for improving team performance. Strategies are introduced by the teacher and discussed by the class as well. Part of the course includes strength training and core building.

# CENTREVILLE LAYTON SCHOOL

## *Course Offerings*

### **Metacognition Course Offerings**

#### **Metacognition 9**

In this class students discuss and examine future life goals, why they are important, and some skills to help achieve them. Students look specifically at;

- The importance of daily planning
- Discussions of what success means to them
- An examination of what their future lifestyle would cost to maintain
- An examination of their personal learning styles

#### **Metacognition 10**

The focus of this course is on student self-awareness. At the beginning of the course students explore learning styles by completing a variety of lessons and reflecting on their experiences. They also complete the VARK questionnaire to learn more about their learning style affinities and weaknesses. Next, students explore their executive functioning by completing a Student View survey from the Schools Attuned program to learn more about their executive function strengths and weaknesses. After learning about these areas students write a self-awareness summary report and present it to faculty members and classmates.

#### **Metacognition 11**

The focus of this course is on college exploration; personal, digital and geographical. Students opened an account with the College Board web site, both to register for the SAT but also to explore the their available resources. Students answer a series of questions about themselves to prepare for seeking college recommendations from faculty, take a career interest inventory, complete two assessments of their independent executive function abilities, consider the idea of a “GAP” year, and build

a list of colleges they would like to explore further.

#### **Metacognition 12**

Seniors have four major objectives during this course. They write a complete college essay, finalize the list of colleges from which to apply, submit a completed college application, and prepare for and lead conference at the end of the first quarter utilizing and incorporating growing self-knowledge.

# CENTREVILLE LAYTON SCHOOL

## *Course Offerings*

### **Health Course Offerings**

#### **Health 9**

In health 9, students studied nutrition and a healthy/balanced diet; exercise and fitness; personal hygiene and cleanliness; and internal and external physical development/changes to the body. Students are assessed based on class participation, projects and in-class assignments.

#### **Health 10**

The health curriculum covers: nutrition; exercise and fitness; physical and psychological dependence; effects of tobacco and alcohol on the body; and personal and social responsibility. Students are assessed based on class participation, projects and in-class assignments.

#### **Health 11**

The health curriculum covers: nutrition; exercise and fitness; physical and psychological dependence; effects of tobacco and alcohol on the body; personal and social responsibility. Students are assessed based on class participation, projects and in-class assignments.

#### **Health 12-Financial Literacy**

Students participate in the University of Arizona's "Life in the United States," a family finance spending plan simulation experience. The simulation is designed to emulate the constraints families encounter when managing their finances. To begin the simulation, participants are given a "new identity" or profile. Then they utilize their new career and income to develop a spending plan for their profile. Participants first receive a paycheck for their new career area representing the national average pay for that profession with taxes deducted. Participants are then provided with a spending plan worksheet to guide them through the decision making process when choosing housing, utilities, transportation, insurance, food, and flexible expenses such as personal care and entertainment for their new identity. The simulation is complete when they have designed a spending plan with a zero balance.



# CENTREVILLE LAYTON SCHOOL

## *Course Offerings*

### **Foreign Language Course Offerings**

#### **Spanish 1**

Students in Spanish 1 will develop a basic proficiency in the four skills of listening comprehension, speaking, reading and writing with special emphasis on cultural awareness. Students begin to develop their ability to understand simple spoken and written Spanish. At the same time, they learn to communicate orally and in writing in a culturally appropriate manner about familiar topics that include greetings, weather, dates, numbers, self, school, food, sports and family.

Basic grammatical structures are taught within the context of these everyday topics. Grammatical structures include nouns, adjectives, articles, the verbs ser and tener, possessive adjectives, present tense of regular verbs ending in –ar, -er, -ir, and present tense of stem changing verbs, ir, dar and estar. Culture is embedded throughout the course and relates directly to the topics studied. The text book “**Asi se dice**” integrates the five C’s of the national standards at all levels (Communication, Culture, Connections, Comparisons, and Communities.).

#### **French 1**

Students in French 1 will develop a basic proficiency in the four skills of listening comprehension, speaking, reading and writing with special emphasis on cultural awareness. Students begin to develop their ability to understand simple spoken and written French. At the same time, they learn to communicate orally and in writing in a culturally appropriate manner about familiar topics that include greetings, weather, dates, numbers, self, school, food, sports and family. Basic grammatical structures are taught within the context of these everyday topics. Grammatical structures include nouns, adjectives, articles, the verbs avoir and être, faire, aller, venir, vouloir, possessive adjectives, present tense of regular verbs ending in –er, -re, -ir, and the partitive. Culture is embedded throughout the course and relates directly to the topics studied. The text book “**Bien Dit**” integrates the five C’s of the national standards at all levels (Communication, Culture, Connections, Comparisons, and Communities.).

# CENTREVILLE LAYTON SCHOOL

## Course Offerings

### **Spanish 2**

Students in Spanish 2 continue their voyage of discovery as they further explore the language and the culture of the peoples who speak this modern world language. Students continue to develop their ability to understand spoken and written Spanish. At the same time, they learn to communicate orally and in writing in a culturally appropriate manner about a variety of familiar topics that include doctors visit, summer and winter activities, birthdays and pass times, shopping for clothing and food, plane travel, parts of the body and daily routine.

Basic grammatical structures are taught within the context of these everyday topics.

Grammatical structures include preterit tense of regular verbs ending in –ar, -er, -ir, direct object pronouns, affirmative and negative expressions, verbs saber and conocer, comparatives and superlatives, present progressive tense, reflexive verbs. Culture is embedded throughout the course and relates directly to the topics studied. The text book “**Asi se dice**” integrates the five C’s of the national standards at all levels (Communication, Culture, Connections, Comparisons, and Communities.).

*Students must complete Spanish 1 before enrolling in this course.*

### **French 2**

Students in French 2 continue their voyage of discovery as they further explore the language and the culture of the peoples who speak this modern world language. Students continue to develop their ability to understand spoken and written French. At the same time, they learn to communicate orally and in writing in a culturally appropriate manner about a variety of familiar topics that include clothing, sports equipment, chores, house, furniture, places in the city, means of transportation, the pharmacy, bank, post office, travel items, at

the hotel, train station and airport, parties and celebrations.

Basic grammatical structures are taught within the context of these everyday topics.

Grammatical structures include demonstrative and interrogative adjectives, the passé composé of er, re, ir verbs with être and avoir, verbs like dormir, devoir, pouvoir, voir, savoir, connaître, appeler, prepositions with cities and countries, direct and indirect object pronouns. Culture is embedded throughout the course and relates directly to the topics studied. The text book “**Bien Dit**” integrates the five C’s of the national standards at all levels (Communication, Culture, Connections, Comparisons, and Communities.).

*Students must complete French 1 before enrolling in this course.*

### **Spanish 3**

Students in Spanish 3 will further develop their proficiency in the four skills of listening comprehension, speaking, reading and writing with special emphasis on cultural awareness. Students continue to develop their ability to understand spoken and written Spanish. At the same time, they learn to communicate orally and in writing in a culturally appropriate manner about a variety of familiar topics that include train travel, more about food and restaurants, festivals, traditions, computers, telephone, e-mail, hotels, hostels, city life, transportation and country life.

More complex grammatical structures are taught within the context of these everyday topics. Grammatical structures include preterit of irregular verbs, prepositional pronouns, adjectives of nationality, the passive voice with se, the imperfect tense, the present perfect tense, double object pronouns and the future tense. Culture is embedded throughout the course and relates directly to the topics studied. The text book “**Asi se dice**” integrates the five C’s of the national

standards at all levels (Communication, Culture, Connections, Comparisons, and Communities).

*Students must complete Spanish 2 before enrolling in this course.*



# CENTREVILLE LAYTON SCHOOL

## Course Offerings

### **French 3**

Students in French 3 will further develop their proficiency in the four skills of listening comprehension, speaking, reading and writing with special emphasis on cultural awareness. Students continue to develop their ability to understand spoken and written Spanish. At the same time, they learn to communicate orally and in writing in a culturally appropriate manner about a variety of familiar topics that include fruits, vegetables, cooking, food shopping, school places and events, computer, daily routine, childhood activities, country life, camping, nature, animals, **parts** of the body, injuries, illnesses, movies, book, television shows, vacation.

More complex grammatical structures are taught within the context of these everyday topics. Grammatical structures include pronouns *y* and *en*, *depuis*, *il y a*, pronouns with *passé composé*, reflexive verbs in present and past, *imparfait*, comparative and superlative, future tense, subjunctive, conditional, relative, interrogative and demonstrative pronouns. Culture is embedded throughout the course and relates directly to the topics studied. The text book “*Bien Dit*” integrates the five C’s of the national standards at all levels (Communication, Culture, Connections, Comparisons, and Communities.).

*Students must complete French 2 before enrolling in this course.*

### **Spanish 4**

In Spanish 4 students use the program “*Destinos*” which teaches speaking, listening, and comprehension skills in Spanish. This telenovela, or Spanish soap opera, immerses students in a mysterious and entertaining story while viewing everyday situations with native speakers. It also introduces the cultures, accents, and dialects of Mexico, Spain, Argentina, and Puerto Rico, helping students understand a range of Spanish and appreciate many Hispanic cultures. Every episode of *Destinos* covers new grammatical concepts, vocabulary, and cultural practices.

*Students must complete Spanish 3 before enrolling in this course.*

# CENTREVILLE LAYTON SCHOOL

## *Course Offerings*

### **Language Arts Course Offerings**

#### **Language Arts 9**

Students read, discuss, and write responding to a variety of short stories, plays, poetry, and novels. The first quarter starts with a sample of readings with an element of suspense and surprise. During quarter two readings focus on journeys of self-discovery. In the third quarter students read about characters who face limits and speak out against injustice. The year ends with a study of the mystery genre.

#### **Reading 9**

This course is designed for ninth grade students who need reading support. Students will read a variety of literature at an appropriate level in a small class setting (6 students or less). Students receive explicit instruction in reading and comprehension skills in this course.

#### **Writing 9**

This course is designed for ninth grade students who need writing support. Students will write in a variety of creative and expository contexts throughout the year. Students receive explicit instruction in grammar, mechanics, style, and structure in a small class setting (6 students or less).

#### **Language Arts 10**

Students read, discuss, and write responding to a variety of short stories, plays, poetry, and novels. The year begins with a reflection on the price of progress. Readings during quarter two focus on the search for identity. Throughout the third quarter students read about love in all of its forms. During fourth quarter the readings focus on the discovery of truth.

#### **Reading 10**

This course is designed for tenth grade students who need reading support. Students will read a variety of literature at an

appropriate level in a small class setting (6 students or less). Students receive explicit instruction in reading and comprehension skills in this course.

#### **Writing 10**

This course is designed for tenth grade students who need writing support. Students will write in a variety of creative and expository contexts throughout the year. Students receive explicit instruction in grammar, mechanics, style, and structure in a small class setting (6 students or less).

### **Grades 11/12 Language Arts Electives (semester courses; ½ credit)**

#### **Mystery**

Students explore the mystery genre by reading and viewing a variety of fictional and non-fictional mysteries. As a final project students create their own mystery and publish it for the school community.

#### **Dystopia**

Over time many authors have made predictions about the future. Students will explore and critique these predictions. Students will read and view a variety of fiction and non-fictional accounts in this genre. Students will make their own prediction into the future in their final project for this course.

#### **Comedy and Drama**

During the first quarter students will study a number of dramas for the stage. In the second quarter they will study a number of comedies. Students will learn beginning acting techniques and basic stage direction during this course. Students will create a short comedy or drama script for their final project in this course.

#### **Family Ties**

Students will explore many different types of families and the lasting ties families have on each other. Students will read and view a

variety of fictional and non-fictional accounts of families. Students will write a memoir for their final project in this course.

# CENTREVILLE LAYTON SCHOOL

## *Course Offerings*

### **Harlem Renaissance**

Students explore the writing and art of the Harlem Renaissance. Students will study what caused the Harlem Renaissance and its effects on the civil rights movement in the United States. Students will complete a project based upon an artist or writer from the period for their final project in this course.

### **She Said**

Students explore the writings of women. They will study the challenges women have faced and continue to face when raising their voices in the public sphere. Students will read and view a variety of fiction and non-fictional accounts of their experience. Students will complete a research project based upon the content for their final project in this course.

### **Outcasts**

Many writers write out of a sense of isolation. Readers often read to quell feelings of loneliness. In this class, students will explore various stories about the experience of exclusion and its repercussions, both positive and negative. What causes one group to marginalize another? What makes an individual feel excluded? Is loneliness a condition externally imposed on a group or individual, or does it arise internally? And does it make a difference either way?

### **Short Fiction**

Students will study the short story and the novella, identifying and analyzing plot, theme, character, setting, and point of view. We will discuss author's purpose, as well as social and cultural contexts. Students will be supported as they develop the ability to think critically and approach text with a discerning eye and an open mind.

# CENTREVILLE LAYTON SCHOOL

## .....*Course Offerings*

### **History Course Offerings**

#### **Civics**

The main focus of study for Civics will be the Constitution of the United States. This course has eight units:

- A. *The Roots of the Constitution of the United States*
- B. *The Preamble*
- C. *The Legislative Branch*
- D. *The Executive Branch*
- E. *The Judicial Branch*
- F. *State Rights and the Amendment Process*
- G. *The Bill of Rights/ Amendments*
- H. *Juvenile Justice*

For each unit, students will complete a "chapter" in a Constitution portfolio entitled "The Constitution Made Easy." In addition, students will study current events through weekly shared inquiry discussions and presentations from articles in magazines, newspapers and electronic sources on the topic areas selected by each student. For the final unit, Juvenile Justice, students will explore the concept of juvenile protection under the law, become familiar with the laws of abuse and neglect, learn about the legal rights and responsibilities of parents and children, and understand the various ways in which the juvenile system attempts to take care of juveniles and their families. This unit ends with students participating in a "mock trial," where they become familiar with the role of trial courts in solving legal disputes, are introduced to court procedures and decorum, explore the roles of various people in the courtroom, and learn important critical thinking and communication skills.

#### **Modern World Civilizations**

Students begin the year with an examination of the early American empires of the Maya, Aztec, and Inca. Then they begin a study of Islamic empires including the Ottomans, Safavids, and Mughals and their impact on history. Later, students focus on the Plague and its consequences and move into the Renaissance. Next, students look at the impact European colonization had on the Americas, Africa, and Asia. As the year concludes, they study the Enlightenment and a variety of revolutions including the French Revolution, the Industrial Revolution, and the Russian Revolution with a culminating focus on communism and democracy. Within these topics, students expand their note-taking skills, supportive writing, and develop research skills.

#### **Modern United States History**

In 11th grade, students study the development of the United States in becoming a world power. They examine the origins of WW I and the ramifications of that war including the failures of the Treaty of Versailles. Then they focus on the 1920s and causes of the Great Depression and the purpose of the New Deal. From there, students learn about the rise, and consequences including WWII and the Holocaust, of dictatorships in Europe and Japan. The final areas of discussion include the Cold War and its impact on US domestic and foreign policies through the 1980s and a discussion of US relations with nations and groups in the Middle East, Pakistan, Afghanistan, and North Africa.

#### **Special Topics in History**

This elective course is designed to help students examine modern issues by tracing their historical roots. Topics may include, but are not limited to, Civil Rights, genocide, women's rights, the devolution of some nations in the Middle East, US/Iranian

relations. Emphasis will be on research, writing, and class discussion.

### **History of the Effect of Technology on Human Development**

Study of the effect of technology on human development from prehistory through to the current day. The class will also examine the feedback loop which has caused the speed of technological development to occur with increased rapidity. The class will also be reading sections of Jared Diamond's "Guns, Germs, and Steel."



# CENTREVILLE LAYTON SCHOOL

## .....*Course Offerings*

### Science Course Offerings

#### Foundations of Science

Students learn the scientific method while exploring a variety of science topics including geography, biology, physics, chemistry, etc. Students learn to ask research questions and generate a lab report to explain their findings.

#### Biology

Students learn about the chemistry of life, the biosphere, ecosystems and communities, and populations. They also learn about humans in the biosphere, cell structure, growth, and function, genetics, evolution, viruses, fungi, plant structure and reproduction, and animal structure, behavior, and diversity. Students also learn the body systems (digestive, nervous, skeletal and muscular, endocrine and reproductive, and immune).

#### Chemistry

Students learn about matter and change, atomic structure, electrons in atoms, the periodic table, ionic, covalent, and metallic bonding, and chemical names and formulas. They also learn chemical quantities, reactions, stoichiometry, states of matter, behavior of gases, water and aqueous systems, solutions, thermochemistry, reaction rates and equilibrium, and acids, bases, and salts.

#### Physics

Students learn about the science of physics, motion in one and two dimensions, forces and laws of motion, work and energy, momentum and collisions, circular motion and gravitation, fluid mechanics, heat and thermodynamics, vibrations, sound, light, electric forces and fields, magnetism, and atomic physics. Approximately ten labs and ten quick labs reinforce the material presented.

### Science Electives (semester courses; ½ credit)

#### Engineering

The engineering elective will be provided to those students who have a desire to pursue engineering disciplines following graduation. It will include:

1. Engineering drawing
2. Instrumentation and measurement
3. Introduction to calculus (derivatives and integrals)
4. Technical writing techniques
5. Class projects which could include aeronautics (glider building), technical papers on subjects of interest chosen by the students, etc.

#### Harnessing the Power of Nature

Students learn the history of technology through a hands on project (Tesla water turbine), YouTube videos, and field trips. The focus of the course will be on how the taming of natural resources to power technology.

#### Human Physiology and Anatomy

Anatomy and physiology is a laboratory and discussion based study of the human body. This course explores the structure and function of the human body at multiple levels: individual cells, their working together to form tissues, the organization of tissues into organs, organs working together as parts of organ systems, and finally how those organ systems support one another to maintain the body. Dissections of systems appropriate organs will compliment course work.

# CENTREVILLE LAYTON SCHOOL

## .....*Course Offerings*

### **Mathematics Course Offerings**

#### **Pre-Algebra**

Pre-Algebra provides students with a reinforcement of pre-Algebra skills as well as an in-depth examination of core Algebra 1 concepts. Topics include fractions, decimals and percent; ratios and proportions; Algebraic expressions, integers and exponents; one-step linear equations and their graphs; and inequalities. Other topics covered include spatial thinking, area and volume, right triangles, probability and nonlinear functions and polynomials. Identified skill gaps will be addressed as needed. Students will also work on understanding the appropriate use of a calculator in math computation.

#### **Algebra 1**

The topics covered in Algebra 1 include linear expressions; rational numbers; solving equations and inequalities; solving systems of equations and inequalities; exponents, polynomials and factoring; and introductory probability and statistics. As time permits, students will also cover advanced Algebra 1 topics such as analyzing and graphing quadratic, radical and rational functions, simplifying radical and rational expressions, and solving quadratic, radical and rational equations. Pre-algebra skills will be reinforced as needed. Students will also work on understanding the appropriate use of a calculator in math computation and for problem solving as well as basic programming on the TI-83/84.

#### **Geometry**

Geometry skills covered include reasoning and proofs; parallel and perpendicular lines; properties of triangles and quadrilaterals; congruence and similarity theorems; right triangles and trigonometry; area, surface area and volume; and properties of circles. Algebra and Pre-algebra skills will be reinforced as needed. Students will also work

on understanding the appropriate use of a calculator in math computation and for problem solving as well as basic programming on the TI-83/84.

#### **Algebra 2**

Algebra 2 concepts include equations and graphs, linear systems, matrices, functions (quadratic, polynomial, exponential, logarithmic, and rational), quadratic relations and conic sections. Students learn how to describe and translate among graphic, algebraic, numeric, tabular, and verbal representations of relations and use those representations to solve problems.

Explorations include practical applications and modeling. Manipulatives, calculators and application software are integral to instruction and assessment.

#### **Probability/Statistics**

The Probability/Statistics course covers probability of multiple events, permutations and combinations, the Binomial Theorem, binomial and normal distributions, algebraic and geometric sequences and series, and the relation between distribution curves and the area under a curve. Students learn how to describe and translate among graphic, algebraic, numeric, tabular, and verbal representations of relations and use those representations to solve problems.

Explorations include practical applications and modeling. Manipulatives, calculators and application software are integral to instruction and assessment.

#### **Pre-calculus**

Pre-calculus provides students with an in-depth examination of trigonometric functions, identities and equations; analytic trigonometry and applications of trigonometry; probability and statistics topics including permutations, combinations, the Binomial Theorem, distributions, and sequences and series; and, time permitting, an introduction to calculus concepts such as limits, derivatives and

integrals. Prerequisite skills are reinforced as needed. Explorations include practical applications and modeling. Manipulatives, calculators and application software are integral to instruction and assessment.

## **Community Service Course Offerings**

### **Community Service 11**

Community service class allows students the opportunity to experience volunteering in the community as a group for the first quarter. Speakers from local non-profit organizations share volunteering opportunities in their organizations. Ten volunteer hours are available during this quarter. Juniors are required to complete ten additional hours with one non-profit organization during their 11th grade year.

### **Community Service 12**

Students meet with the community service coordinator at the beginning of the year to establish a community service partnership with a non-profit organization. Seniors are required to complete 20 hours with one non-profit organization during their 12th grade year.