

**Sterling School**  
**Charles Townes Center**  
**Middle School**  
**Program of Study**



# Charles Townes Center

The purpose of the Charles Townes Center (CTC) is to provide gifted and talented students with a highly challenging, full-time instructional program that enriches, accelerates, and extends the program of studies in Greenville County Schools. The curriculum in each content area exceeds South Carolina Standards. Differentiation in the depth, breadth, and pace of instruction is designed to challenge the abilities of advanced learners, with strong emphasis on the development of higher order thinking skills.

## Middle School Course Catalog

### English Language Arts

Courses are specifically designed to challenge students with text complexity, analytical and creative writing, research at an accelerated pace.

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### Mathematics

Courses are designed to build a strong foundation of factual, procedural, and conceptual understanding of mathematics.

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### Social Studies

A comprehensive study of world history from the earliest civilizations to current day South Carolina History

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### Science

Courses use higher level lab and field experiences to apply science process skills to a wide variety of science disciplines.

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### Spanish

These high school level courses are designed to build upon students foreign language foundation.

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### Electives

Well rounded students are a key component to our middle school program. PE is taken each year along with additional electives.

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### Sixth Grade

Courses offered and descriptions, course registration document. Electives are found in its own section.

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### Seventh Grade

Courses offered and descriptions, course registration document. Electives are found in its own section.

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### Eighth Grade

Courses offered and descriptions, course registration document. Electives are found in its own section.

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## Somethings Different

The Charles Townes Center's teaching philosophy on teaching gifted students is simple: Teachers should seek to challenge and engage students through instruction that enriches, compacts, extends and accelerates curriculum and that incorporates students' personal interests to keep them motivated to learn. Teachers should never 'punish' the gifted student for being gifted by giving him/her more work. Instead, teachers should provide challenging and appealing instruction that engages the gifted student within the same time constructs of learning, unless the student would like additional, independent study of any given subject/topic. Just because a gifted student can potentially do more, does not mean that they want to work more; this ideology is a common misconception of many teachers who sometimes forget that all students are kids, and behave as such.

### Gifted Terms:

Some gifted education terminology is listed below that will help parents & students understand WHY this curriculum is not just the 'regular' curriculum. Look for these verbs throughout the document:

**Extend:** to go beyond the current curriculum standards by addressing topics in a more advanced and in-depth way. Extending curriculum does NOT imply more workload, however. Rather, it asks

students to think in more advanced and critical ways, without necessarily requiring more energy and/or time.

**Compact:** to condense a quantity (unit) of instruction into a lesser amount of time in order to cover more material and/or to spend more time on advanced concept. Gifted students do not usually need a lot of repetition in order to grasp a concept, even advanced concepts; thus, compacting curriculum is a method for keeping the pace moving and preventing ennui.

**Enrich:** to 'add on' to a basic unit of study through a variety of, often, non-traditional methods in order to enhance a student's interest in the topic. Enrichment activities provide a more interesting and authentic 'layer' of instruction through field study, research, inquiry, guest speakers, and individualized instruction that engage students in a meaningful way.

**Accelerate:** to introduce curriculum ahead of the prescribed developmental stage - Algebra I in 7th grade, Geometry in 8th grade, English I Honors in 8th grade, Spanish I in 7th grade, and Spanish II in 8th grade. Acceleration works well for gifted students as they are often developmentally ready to receive, comprehend, and apply more advanced curriculum before the typical age/grade level.

The purpose of this document is to detail the courses your child will have the opportunity to explore and the standards, skills and content they will be learning.



# Sixth Grade

## English Language Arts CTC 6

**Grade Level:** 6<sup>th</sup>

**Prerequisite:** none

This course is designed to meet the specific needs of highly gifted students who were identified through the standard measures implemented by Greenville County School District. The curriculum designed for this course meets and exceeds the guidelines set forth by the South Carolina State Department of Education as criteria for Gifted and Talented instruction. Students should expect to find the curriculum challenging in a number of ways: text complexity, analytical and creative writing, compacted units, extension activities, technology based research and accelerated pace. Within the classroom, students should demonstrate the ability to work independently on multi-day assignments, arts integration projects and extension activities.

## Mathematics 6,7,8:

**Grade Level:** 6<sup>th</sup>

**Prerequisite:** none

In this course, students will review the sixth grade standards, while the seventh and eighth grade standards will be used to guide instruction. The emphasis in this standards-based course is on algebraic thinking and on extending the understanding of the real number system to include integers, rational numbers, and irrational numbers. Students will investigate applications of number theory and will acquire skills in adding, subtracting, multiplying, and dividing rational numbers. In addition, students will use rational numbers to solve a variety of real-world problems. Students will solve applied problems by using one-step and multistep equations and inequalities, percents, and proportional reasoning. Students will develop algebraic

thinking by analyzing patterns to discover relationships, by representing information through symbolic, graphical, and tabular methods, and by identifying relationships that are linear. Throughout the course, there is an emphasis on the process standards of problem solving, communication, reasoning, representations, and connections

## Social Studies CTC 6: Early World History

**Grade Level:** 6<sup>th</sup>

**Prerequisite:** none

Social studies at CTC in grade six develops and enhances the student's understanding of history through the study of people and events from earliest man to the era of European exploration. This course focuses on the significance of geography, economics, and government in the development of the human story, including the conflicts and accomplishments of the people and their roles in developing the social, economic, and political structures of the major civilizations.

Student explorations extend beyond grade-level standards; possible examples include:

- Primary source and secondary source analysis such as: texts, calendars, timelines, maps, mental maps, charts, tables, graphs, flow charts, diagrams, photographs, illustrations, paintings, cartoons, architectural drawings, documents, letters, censuses, artifacts, models, geographic models, aerial photographs, satellite-produced images, and geographic information systems.
- Using source analysis to write historical analytical essays
- Presenting historical analysis research through creative presentations
- Various field trips to historical sites either virtually or actual locations
- Creative writing utilizing historical research

## Science CTC 6:

**Grade Level:** 6<sup>th</sup>

**Prerequisite:** None

Sixth grade science at Charles Townes Center expands upon required state standards, while at the same time meeting all PASS objectives. Sixth grade sciences provides students with inquiry-based experiences in four major areas of study as they hone data collection and measurement skills. In the Animal Unit, students compare the classification, anatomy, physiology and behaviors of vertebrate and invertebrate animals by conducting population studies in and along Sliding Rock Creek and by dissecting preserved specimens such as crayfish, earthworm and squid. The Plant Unit finds students exploring the diversity of plants as they identify and catalog the native plants in the Sliding Rock Creek area and compare the structures of vascular/nonvascular plants and gymnosperms/angiosperms. During the Weather Unit, students use digital lab equipment, coupled to graphing calculators, to collect and analyze weather data. Students explore the complex factors that cause weather and storms, including the molecular motion of air and water molecules that bring about changes in atmospheric conditions. The Energy Unit weaves throughout each unit, beginning with animal and plant use of energy to solar energy heating air, to sources of energy for human activities. An in depth study of the forms of energy includes an investigation of renewable and sustainable resources, culminating in a visit to Furman University to see local efforts to build energy efficient buildings. As students investigate the relationships of energy, force and work, they collaborate with an artist-in-residence to create and build giant masks and puppets that demonstrate the principles of simple machines.



## Seventh Grade

### English Language Arts CTC 7

Prerequisite: none

This course is designed to meet the specific needs of highly gifted students who were identified through the standard measures implemented by Greenville County School District. The curriculum designed for this course meets and exceeds the guidelines set forth by the South Carolina State Department of Education as criteria for Gifted and Talented instruction. Students should expect to find the curriculum challenging in a number of ways: text complexity, analytical and creative writing, compacted units, technology based research and accelerated pace. Students should demonstrate the ability to work independently on outside assignments, arts integration projects and extension activities.

### Mathematics 8 for 7th:

Prerequisite: none

In order to differentiate our middle school mathematics curriculum to the needs of our academically talented students at CTC, we have created a course for those 7th graders who fit one of two criteria: 1) did not meet the district and state requirements to take Algebra I Honors in 7th grade, or 2) chose not to accept the recommendation to take Algebra I Honors in 7th grade. Math 8 for 7th graders is a pre-algebra course that emphasizes mastery of number and operation, data analysis and geometry concepts as well as explores the ideas that represent the foundation of Algebra I. Those topics include simplification and solution of algebraic expressions and equations, multiple representations of relations and functions, and use of integers in expressions and equations. To facilitate the mastery of this content and understanding of the foundations of algebra, a variety of tasks are implemented and many resources utilized like NTCM Navigations activities which require the students to derive formulas and communicate solutions in many ways including written, detailed descriptions, AP Springboard tasks which develop problem-

solving abilities, AIMS activities which integrate science content, and a pre-algebra textbook that provides advanced problem sets for daily practice.

### Algebra I Honors: Unit Credit: 1.00 Grade Level: 7th or 8th Prerequisite: Math Teacher Recommendation

This honors-level course will be a more extensive study of the algebraic concepts traditionally covered in Algebra 1. It is an intense program that includes all topics taught in Algebra 1 as well as additional enrichment topics. Students in this course must take a state-mandated end-of-course test as the final exam, and it will count as 20% of the final grade.

### Social Studies CTC 7: Contemporary World History Grade Level: 6th Prerequisite: none

Social studies in the seventh grade is a course in contemporary history that continues from the examination of early cultures through the renaissance in grade six. In grade seven, students examine the history and geography of human societies from 1600 to the present. They learn about the growing interaction among these societies as well as the exchange of ideas, beliefs, technologies, and commodities among them. Students also address the continuing growth of the political and economic ideas that shaped the modern world. They study the concepts of reason and authority, the natural rights of human beings, the divine right of kings, experimentalism in science, the development of limited government, and the roots of modern-day tensions and issues.

Student explorations extend beyond grade-level standards; possible examples include:

- Primary source and secondary source analysis such as: texts, calendars, timelines, maps, mental maps, charts, tables, graphs, flow charts, diagrams, photographs, illustrations, paintings, cartoons, architectural drawings, documents, letters, censuses, artifacts, models, geographic models, aerial photographs, satellite-produced images, and geographic information systems.
- Conducting research
- An emphasis on student historical analysis and discussion
- Conducting research necessary to formulate a thesis
- Supporting of thesis
- Using source analysis to write historical analytical essays
- Presenting research with support in informative in creative ways
  - Creative writing utilizing historical research

### Science CTC 7:

Prerequisite: Science CTC 6

Seventh grade science at Charles Townes Center expands upon required state standards, while at the same time meeting all PASS objectives. Seventh grade science provides students with inquiry-based experiences in four major areas of study. In the Chemistry Unit, students examine the underlying physical and chemical properties of elemental subatomic structure that cause chemical reactions. Study of atomic structure, ionic and covalent bonding, and determination of density are covered at beyond grade level. Understanding chemical formulas and reactions is further explored as students investigate metabolic reactions within cells; i.e. cellular respiration, cellular transport and photosynthesis, Krebs cycle and electron transport chain. During their study of Genetics, students determine genotypic and phenotypic ratios for offspring, extract plant DNA, build models of DNA and participate in a genetic engineering laboratory exercise at the South



## Seventh Grade

Carolina DNA Learning Center at Clemson University, as well as the studying pedigrees and sex-linked and normal inheritance. In addition to studying the structures and functions of Human Body Systems, students analyze possible outcomes of a malfunction of each system and justify their responses using their acquired knowledge of each system. Students will model various systems and run simulations of different disease scenarios to determine the best way to prevent and control both infectious and non-infectious diseases. A holistic approach to the Ecology unit finds students analyzing the abiotic factors within ecosystems (e.g., porosity and permeability of soil samples) and scenarios that replicate abiotic and biotic factors that influence populations within ecosystems as well as a study of interrelationships between organisms, an analysis of biomes, energy lost in the different trophic levels and human effects on the environment. buildings. As students investigate the relationships of energy, force and work, they collaborate with an artist-in-residence to create and build giant masks and puppets that demonstrate the principles of simple machines.

### Spanish I College Prep (CP):

**Unit Credit:** 1.00

**Grade Level:** 7th

**Prerequisite:** None

This course focuses on meaningful communication and language as it is used in real-world situations that students are most likely to encounter. Students will first begin to develop aural and oral skills, then read and write what they can say—familiar words, commands, phrases, short sentences, and basic questions. They will learn to use predictable language in familiar settings. They will begin to develop cultural awareness and the ability to recognize the products, practices, and perspectives of the culture they study. Students will also develop insights into their own language through linguistic and cultural comparisons with the foreign language and culture they study and use the the language to expand their knowledge in all content areas.



## Eighth Grade

### English Language Arts CTC 7 Unit Credit: 1.00

**Prerequisite:** Students identified as GTA automatically qualify. Students who are not identified as GTA must meet the following five criteria: PASS scores of Exemplary in 6th grade or 7th grade; MAP RIT score of 240 or above in Reading; High level of performance in reading and writing skills; Ability to think critically and demonstrated enthusiasm for language arts; Teacher recommendation

This is an honors-level high school course for academically gifted eighth grade students who have the ability to pursue an accelerated English program. These students are taking a high school level course in preparation for Advanced Placement English (college level courses) in their junior and senior years; therefore, the coursework will reflect more rigor than other middle school English courses. Literary study includes all genres, and students will be required to read extensively from texts with a wide range of complexity. Students in English 1 Honors will be expected to exhibit critical thinking skills when analyzing what they have read. Nonfiction readings will include literary criticism as well as political essays, memoirs, and historical texts. Composition skills of those entering the course must exceed mere proficiency and should exhibit the student's understanding of voice, style, and purpose. Grammar and usage skills will be reviewed through mini-lessons preceding each writing assessment. Students should expect major essay assignments on a frequent basis and for writing skills to constitute a large percentage of the final grade. The rigor of this course will fully prepare students for the EOC testing in English 1 and all future Honors or AP English courses. Note: This course earns high school credit and carries Honors GPA weighting.

### Algebra I Honors: Unit Credit: 1.00 Grade Level: 7th or 8th Prerequisite: Math Teacher Recommendation

This honors-level course will be a more extensive study of the algebraic concepts traditionally covered in Algebra 1. It is an intense program that includes all topics taught in Algebra 1 as well as additional enrichment topics. Students in this course must take a state-mandated end-of-course test as the final exam, and it will count as 20% of the final grade.

### Geometry Honors: Unit Credit: 1.00 Grade Level: 8th Prerequisite: Algebra 1 Honors or Algebra 1 CP with Math teacher recommendation

This honors-level course is for motivated mathematics students who are candidates for AP Calculus. It includes all topics taught in Geometry as well as a unit in formal logic and other enrichment topics. .

### Social Studies CTC 8: Advanced South Carolina History Grade Level: 8th Prerequisite: none

The focus for social studies in grade eight is the history of South Carolina and the role that the state and its people have played in the development of the United States as a nation. Students learn about the state's development during colonial times; the growth of the American ideal, which led to the break with England; and the rising controversy about slavery, which led to the Civil War. The continued study of South Carolina from Reconstruction to the present, including the struggle for social and economic justice waged by the people of South Carolina, further allows students to see the progress that the state has

made and also to visualize the future challenges yet to be met and overcome.

Student explorations extend beyond grade-level standards; possible examples include:

- Primary source and secondary source analysis such as: texts, calendars, timelines, maps, mental maps, charts, tables, graphs, flow charts, diagrams, photographs, illustrations, paintings, cartoons, architectural drawings, documents, letters, censuses, artifacts, models, geographic models, aerial photographs, satellite-produced images, and geographic information systems.
- Using source analysis to write historical analytical essays
- Presenting historical analysis research through creative presentations
- Various field trips to historical sites either virtually or actual locations
- Creative writing utilizing historical research

### Science CTC 8: Grade Level: 6th Prerequisite: None

8th grade science at Charles Townes Center expands upon required state science standards, while at the same time meeting all PASS objectives. 8th grade science provides inquiry based experiences in five major areas of study. The course of study in Earth's Biologic History includes complex geologic layering, radiometric dating, geologic periods and epochs, and South Carolina geologic history. Structure and Process in Earth Systems includes study of geologic measuring scales ((MMS, Mercalli, VEI), rock types and mineral composition, mechanism of mineral and rock formation, volcano types and intrusive and extrusive igneous structures, remote sensing, and heat transfer as the mechanism for plate tectonics. Astronomy includes a study of the Moon, cultural and



## Eighth Grade

historical contexts of astronomy, study of galaxies as part of the structure of the universe, and star structure and life cycles. Forces and motion emphasizes the study of Newtonian mechanics, the study of acceleration and velocity, calculations of force, mass and acceleration, non-linear vector addition and kinematics. The final area of study is Waves, which includes, electric and magnetic components of electromagnetic waves, concave and convex mirrors and lenses, anatomy and function of the eye and ear, vision and auditory problems, light and pigment mixing, and a study of the electromagnetic spectrum.

### **Spanish II College Prep (CP):**

**Unit Credit: 1.00**

**Grade Level: 7th**

**Prerequisite: None**

This course focuses on meaningful communication and language as it is used in real-world situations that students are most likely to encounter. Students will continue to learn to use predictable language in familiar settings and begin to not only express basic needs, but elaborate on them. They will continue to develop cultural awareness and the ability to recognize the products, practices, and perspectives of the culture. Students will continue to develop insights into their own language through linguistic and cultural comparisons with the foreign language and culture they study and use the language to expand their knowledge in all content areas.



# Electives

## Physical Education

**Grade 6**  
**Grade 7**  
**Grade 8**

Enrollment in this course fulfills the regulation that all students will complete one quarter of physical education each year in grades 6 – 8. Course content focuses on teaching students the four SC Middle School PE Student Performance criteria as mandated by the SC Department of Education. Students will demonstrate the abilities, concepts, knowledge, and skills required to: 1) demonstrate competence in modified versions of activities in three movement forms as identified in the SCPEAP standards; 2) demonstrate knowledge of the five components of fitness and the F.I.T.T. principle on a written test; 3) participate regularly in health-enhancing physical activity outside the physical education class; 4) meet the gender and age group health-related physical fitness standard as described by the National Association for Sport and Physical Education.

### Life Fitness

**Grade 6**  
**Grade 7**  
**Grade 8**

Life Fitness is a related arts class taught through the physical education department. It focuses on nutrition, exercise, along with cardiovascular and strength building activities. The purpose of the class is to encourage habits that lead to healthy, active adult life.

## Art

### Art 6

The purpose of this course is to enable students to communicate ideas and concepts through a variety of artwork, including drawing, painting, printmaking, sculpture, arts, and crafts. A study of artists and their work will help students understand the techniques, skills, and diverse intentions of artists from many cultures and times. Students will focus on developing creative problem-solving skills, visual literacy, and personal expression.

### Art 7

Students will develop creative-thinking and problem-solving skills as they observe the world around them. They will explore and produce artwork including drawing, painting, printmaking, sculpture, arts, and crafts. A study of artists and their work will help students understand the techniques, skills, and diverse intentions of artists from many cultures and times.

### Art 8

Students will refine their ability to communicate visually, manage a wide range of tools and materials, and achieve quality, style, and craftsmanship in drawing, painting, printmaking, sculpture, and crafts. Students will have opportunities for evaluating and critiquing their own and other students' artwork as well as studying artists and analyzing their work.

### Advanced Art 7

Students will develop creative-thinking and problem-solving skills as they observe the world around them. They will explore and produce artwork including drawing, painting, printmaking, sculpture, arts, and crafts. A study of artists and their work will help students understand the techniques, skills,

and diverse intentions of artists from many cultures and times.

### Advanced Art 8

The purpose of this course is to teach students who have advanced art ability to achieve work at a higher level than the general art classes. The knowledge of the principles and elements of design will be studied in depth through vigorous exercises and research. Students will be involved in a variety of experiences with local artists and community arts organizations.

### Graphic Art & Design 7

### Graphic Art & Design 8

The purpose of this course is to challenge the students' problem solving skills through the relationship of images and fonts. Compasses, French curves, protractors and ruler knowledge will be used to solve technical projects manually. The students will also learn the basics of letter formations and typographical formats. Some projects will be enhanced with computer graphics.

### Yearbook 7

### Yearbook 8

The main purpose of this class is to produce the yearbook for the school. In fulfilling this goal, many skills are introduced and/or developed. Organization, self-motivation, precise writing, and time management are major elements of this class. Computer skills, photography skills, and interpersonal skills are also key in the production of the yearbook. Students do not need to come into this class with these skills fully developed, but they do need to have the desire to develop them.





### Desktop Publishing

This course gives students experience with graphics software for the purpose of producing desktop-published camera/copy ready masters for reproduction using accepted journalism and presentation techniques.

## Spanish

### Spanish Language & Culture 6

This is the first course in an articulated, sequential, standards-driven program of foreign language study in middle school. It is for students with no previous experience with a second language. The focus is on proficiency, first oral and then written. Grammar is included only when the need arises and learned in context. Culture is centered around everyday customs and values. Students will continue their study of the language in all subsequent grades.

## Music

### (Yearlong Classes)

- Band 6**
- Band 7**
- Band 8**

This course provides beginning-level instruction on brass, woodwind, and percussion instruments. No previous musical experience is required. The curriculum includes the development of fundamental skills, concepts, composition, cooperative learning, music as it relates to history and culture, and band techniques. The class will include an expectation for the purchase or rental of an instrument and individual practice at home. Concert performances will be an outgrowth of the study of musical concepts.

### Strings 6

This course provides beginning-level instruction on violin, viola, cello, and string bass. No previous musical experience is required. The curriculum includes the development of fundamental skills, concepts, composition,

cooperative learning, music as it relates to history and culture, and string techniques. The class will include an expectation for the purchase or rental of an instrument and individual practice at home. Some larger instruments are available at the school, and parents should coordinate with the director for their use. Concert performances will be an outgrowth of the study of musical concepts

### Strings 7

This course is a continuation of Strings 6 for violin, viola, cello, and string bass. Intermediate-level middle school literature will be studied. The curriculum includes the development of fundamental skills, concepts, composition, cooperative learning, music as it relates to history and culture, and strings techniques. The class will include an expectation for the purchase or rental of an instrument and individual practice at home. Concert performances will be an outgrowth of the study of musical concepts.

### Strings 8

This course is a continuation of Strings 7 for violin, viola, cello, and string bass. Advanced-level middle school literature will be studied. The curriculum includes the development of fundamental skills, concepts, composition, cooperative learning, music as it relates to history and culture, and strings techniques. The class will include an expectation for the purchase or rental of an instrument and individual practice at home. Concert performances will be an outgrowth of the study of musical concepts.



# English Language Arts

*Middle School*

*Ms. Johnston & Ms. Royal*

## ***A Note on the Standards:***

*Because the nature of teaching gifted and talented students naturally lends itself to teaching beyond the grade level standards, for the purposes of this document, we are posting the 9th grade level standards that correspond with each component of English-language arts, with the understanding that all middle school students will meet or exceed these standards by or before 8th grade when they complete English I Honors.*

## **The Five Branches of English-Language Arts Instruction:**

There are five major components that comprise both a comprehensive study of and an in-depth understanding necessary to truly appreciate the art of the English language. These components are: Grammar, Vocabulary, Reading, Writing, & Communication.

### **GRAMMAR:**

The study of grammar includes understanding that grammar is a method of thinking about language as

well as organizing, classifying, and categorizing language. This type of learning provides the fundamental basis for recognizing the architectural and foundational rules of English, so that through analysis of text, students gain insight to an author's style, as well as recognize errors in textual patterns that they can then self-correct. Once mastered, the student becomes the artisan, crafting his/her own writing in ways that are unique to himself/herself and that give him/her the ability to communicate effectively in any setting. Finally, grammar is important to grasp first in one's own primary language so that it can then be translated and applied to the acquisition of additional languages (AKA Spanish at CTC). Grammar is not simply boring, pointless, busy-work devised by English teachers to force students to drool incessantly and completely check out of class. These unfortunate physiological responses have become the norm for many students (including myself), who have been force-fed grammar in isolation, hour upon hour, without any understanding of the why behind the drilling of this seemingly useless facet of English or without the connection to grammar and literature.

In reality, the beauty of grammar is that, for all intents and purposes, it is a formulaic, mathematical equation, which can be broken down and systematically analyzed and evaluated. Thus, in this program, we seek to eliminate the dread and, instead, build the confidence that one needs to become a master of the language, which can then be applied in myriad real-life scenarios.

The G/T Middle School Grammar Study Program is based on Michael Clay Thompson's Four-Level Analysis, which requires to students to dissect sentences (chosen from literature and student writings) into 4 levels:

- 1) Parts of Speech
- 2) Parts of the Sentence
- 3) Clauses
- 4) Phrases

After analyzing for these levels, students can 'see' the existing elements within a sentence and can then apply those same elements to his/her own writing.

MCT’s program is both challenging for the G/T student and accessible; it can be used with any sentence, whether extracted from the literature we are currently studying or from a student’s own writing repertoire. The beauty of this program is that it allows us to 1) integrate grammar study into our literary analyses and 2) recognize when words play varying roles – e.g. when a noun is acting as a verb, an adjective, or another part of speech and so on, and their effect on the reader because of the infinite possibilities that are available to the author in his/her crafting of the language. Finally, the other primary reason for using the Four-Level Analysis grammar program is that, once the basics are learned and students are familiar with program, it goes very quickly (<5 min. per day). We will use it as a bell work activity 3 days per week. We simply don’t have time in a 50 minute class to spend on grammar instruction for hours on end – thank goodness, right? – so we must maximize our allotted time, by compacting advanced grammar study through bell work. Once students have learned the terminology necessary for interpreting and analyzing sentence structure, we will use current literature being studied as well as student work from which to draw and correct sentences.

**Common Core Standards addressed through grammar:**

**Conventions of Standard English**

1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

- a. Use parallel structure.
- b. Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations.

2. Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

- a. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses.
- b. Use a colon to introduce a list or quotation.
- c. Spell correctly.

**Knowledge of Language**

3. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

- a. Write and edit work so that it conforms to the guidelines in a style manual (e.g., MLA Handbook) appropriate for the discipline and writing type.

**VOCABULARY:** The acquisition of vocabulary is a critical aspect of the understanding of English. It is best attained through a cumulative study of word stems coupled with an individualized study of unfamiliar terms and contexts via reading literature that allows a student to decode words and recognize contextual nuances in order to exponentially enhance his/her vocabulary. The study of stems empowers students to become walking dictionaries; it compacts word study in a way that gives students immediate access to parts of words that are familiar and from there, students can use context clues to decode the remaining word parts that may not be stems oriented. Stems will help students on high stakes standardized testing when they can – at the very least – decode part of an unfamiliar term and then make an educated guess at its definition.

**Middle School Stems Study**

Primary Program: The Word Within the Word by Michael Clay Thompson

While the study of stems is an important part of vocabulary instruction, it is by no means acceptable as the sole component. Where decoding a word leaves off, context picks up. Thus, along with stems, individualized word study is an important way to enrich and extend vocabulary instruction. Whole word study is critical because context becomes more

and more diverse with the more varied a student’s literary repertoire becomes. Also, what may be familiar to one student is not necessarily the case with another. For example, Student A may have seen a particular word in one context, but he/she may not recognize its particular denotation and/or connotation when it appears in a different context. Meanwhile, Student B may have the inverse experience with the same word, whereas Student C may be totally unfamiliar with the word in any context, having never been exposed to the word previously.

Take the word ‘mean’ for instance: Student A feels she is ‘very familiar’ with this term, as she’s used it many times when referring to her older sibling as ‘being mean’ to her, which in this context, of course, mean denotes a behavior and can be defined as “offensive, selfish, or unaccommodating; nasty; malicious: a mean remark; He gets mean when he doesn’t get his way” (dictionary.com).

However, when she comes across the same word in a different context, say she sees the phrase “a mean abode”, she realizes that her experience with the term does not match this particular situation.

When looking it up in a dictionary, students will see that the word ‘mean’ has a total of 31 definitions and can serve as a verb, an adjective, a noun, as well as in many idiomatic expressions!

Mean (as defined on dictionary.com – accessed on 9/28/12):

**Verb (used with object):**

- 1. to have in mind as one’s purpose or intention; intend: I meant to compliment you on your work.

**Example of MCT’s 4 Level Analysis: (does not include proofreading portion of the exercise, which will also be a required component for students to recognize mistakes in others’ and in their own writing.)**

Sentence Level	The	quick	brown	fox	jumps	over	the	lazy	dog.
1. Parts of Speech	adjective (definitive article)	adjective	adjective	noun (common)	Verb (action)	Preposition	adjective (definitive Article)	adjective	noun (common)
2. Parts of the Sentence				Subject	Predicate				
Phrases						Prepositional Phrase ( <i>dog</i> is the object of the preposition)			
Clauses	Independent Clause - simple, declarative sentence								
Other Notes	Context: This sentence is also a pangram: it contains all 26 letters of the alphabet and forms the premise of Mark Dunn’s dystopian novel, <i>Ella Minnow Pea</i> . Poetics: The use of adjectives makes this simple sentence visually vivid for the reader, and its singular use of all 26 letters of the alphabet make it an extraordinary composition in and of itself – I challenge you to compose another sentence using all 26 letters that actually makes sense as does this one. Go!								

### 6th Grade Grammar Program

Quarter	Bell work MWF	Description	Level	Sentences extracted from...	Student Resources	Assessments
One	Weeks 1-5	Parts of Speech – Nouns, Pronouns, Verbs	1	Literature studies	Marble Books	1 pre-test (non-graded)
	Weeks 5-9	Parts of Speech – Adjectives, Adverbs, Conjunctions, Prepositions, Interjections	2	Literature studies	Marble Books	1 quiz / 1 test
Two	Weeks 1-9	Parts of the Sentence	3	Literature studies	Marble Books + Lit. notes	1 quiz / 1 test
Three	Weeks 1-9	Phrase	4	Literature studies	Marble Books + Lit. notes	1 quiz / 1 test
Four	Weeks 1-9	Clauses	1-4	Student writing pieces	Marble Books + Personal Writing Pieces	1 quiz / 1 exam

### 7th & 8th Grade Grammar Program

Quarter	Bell work MWF	Description	Level	Sentences extracted from...	Student Resources	Assessments
One	Weeks 1-9	Review of all levels	1-4	Literature studies	Marble Books + Lit. notes	1 pre-test / 1 quiz / 1 test
Two	Weeks 5-9	All levels + poetics*	1-4	Literature studies	Marble Books + Lit. notes	1 quiz / 1 test
Three	Weeks 1-9	All levels + poetics*	1-4	Student writing pieces	Marble Books + Personal Writing Pieces	1 quiz / 1 test
Four	Weeks 1-9	All levels + poetics*	1-4	Student writing pieces	Marble Books + Personal Writing Pieces	1 quiz / 1 exam

\*Poetics: Includes identifying literary elements and devices used; recognizing historical context when applicable

2. to intend for a particular purpose, destination, etc.: They were meant for each other.
3. to intend to express or indicate: What do you mean by "liberal"?
4. to have as its sense or signification; signify: The word "freedom" means many things to many people.
5. to bring, cause, or produce as a result: This bonus means that we can take a trip to Florida.
6. to have (certain intentions) toward a person: He didn't mean you any harm.

7. to have the value of; assume the importance of: Money means everything to them. She means the world to him.

**Verb (used without object):**

8. to be minded or disposed; have intentions: Beware, she means ill, despite her solicitous manner.
9. mean well, to have good intentions; try to be kind or helpful: Her constant queries about your health must be tiresome, but I'm sure she means well.

**Adjective:**

1. offensive, selfish, or unaccommodating; nasty; malicious: a mean remark; He gets mean when he doesn't get his way.

2. small-minded or ignoble: mean motives.
3. penurious, stingy, or miserly: a person who is mean about money.
4. inferior in grade, quality, or character: no mean reward.
5. low in status, rank, or dignity: mean servitors.
6. of little importance or consequence: mean little details.
7. unimposing or shabby: a mean abode.
8. small, humiliated, or ashamed: You should feel mean for being so stingy.
9. Informal . in poor physical condition.
10. troublesome or vicious; bad-tempered: a mean old horse.
11. Slang . skillful or impressive: He blows a mean trumpet.
12. occupying a middle position or an intermediate place, as in kind, quality, degree, or time: a mean speed; a mean course; the mean annual rainfall.

**Noun:**

1. Usually, means. (used with a singular or plural verb ) an agency, instrument, or method used to attain an end: The telephone is a means of communication. There are several means of solving the problem.

2. means,
  - a. available resources, especially money: They lived beyond their means.
  - b. considerable financial resources; riches: a man of means.
3. something that is midway between two extremes; something intermediate: to seek a mean between cynicism and blind faith.
4. Mathematics.

- a. a quantity having a value intermediate between the values of other quantities; an average, especially the arithmetic mean.
- b. either the second or third term in a proportion of four terms.

5. Statistics. expected value. See mathematical expectation .

6. Logic. the middle term in a syllogism.

Idioms (noun)

7. by all means,
  - a. (in emphasis) certainly: Go, by all means.
  - b. at any cost; without fail.

8. by any means, in any way; at all: We were not surprised at the news by any means.

9. by means of, with the help of; by the agency of; through: We crossed the stream by means of a log.

10. by no means, in no way; not at all: The prize is by no means certain.

Teachers cannot assume students have the same prior experience with a word; nor can they assume that learning a word in one context means that that word has been 'learnt'. Unfortunately, and most frequently because of time constraints, teachers often focus on the list method for teaching vocabulary, and do not take into account prior knowledge, multiple meanings, and contextual reference for any particular term of study. However, memorizing list upon list of vocabulary words is not

the most effective means of word study, as students have different backgrounds with word exposure, and all words can take on a variety of meanings based on contextual usage as well as grammatical usage in parts of speech. Thus, learning terms in isolation does not give the student the applicative references needed to really mine the meaning(s) of English words. Activating prior knowledge, decoding unfamiliar terms with stems, and applying contextual reference to word usage is a much more challenging and effective method of word study than rote memorization of lists. This individual study will help students with reading all types of works and will certainly raise their test scores on high stakes standardized testing.

**Common Core Standards addressed through vocabulary:**

**Vocabulary Acquisition and Use**

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies.

- a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.
- b. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy).
- c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology.
- d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

- a. Interpret figures of speech (e.g., euphemism, oxymoron) in context and analyze their role in the text.
- b. Analyze nuances in the meaning of words with similar denotations.

6. Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

**Note on range and content of student language use:** *To be college and career ready in language, students must have firm control over the conventions of standard English. At the same time, they must come to appreciate that language is as at least as much a matter of craft as of*

**Middle School Stems Study**

**Primary Program: The Word Within the Word by Michael Clay Thompson**

Quarter	6th Grade Lists	7th Grade Lists	8th Grade Lists	6 <sup>th</sup> & 7 <sup>th</sup> Grades Only: HW	Student Resources	Assessments
One	1-3	11-13	21-23	3 Sets of Mystery Qs & Analogies	Study Stack & Moodle	3 sets of mys. qs + 3 quizzes
Two	4-5	14-15	24-25	2 Sets of Mystery Qs & Analogies	Study Stack & Moodle	2 sets of mys. qs + 2 quizzes + 1 review test
Three	6-8	16-18	26-28	3 Sets of Mystery Qs & Analogies	Study Stack & Moodle	3 sets of mys. qs + 3 quizzes
Four	9-10	19-20	29-30	2 Sets of Mystery Qs & Analogies	Study Stack & Moodle	2 sets of mys. qs + 2 quizzes + 1 exam

*rules and be able to choose words, syntax, and punctuation to express themselves and achieve particular functions and rhetorical effects. They must also have extensive vocabularies, built through reading and study, enabling them to comprehend complex texts and engage in purposeful writing about and conversations around content. They need to become skilled in determining or clarifying the meaning of words and phrases they encounter, choosing flexibly from an array of strategies to aid them. They must learn to see an individual word as part of a network of other words—words, for example, that have similar denotations but different connotations. The inclusion of Language standards in their own strand should not be taken as an indication that skills related to conventions, effective language use, and vocabulary are unimportant to reading, writing, speaking, and listening; indeed, they are inseparable from such contexts*

**READING:**

Reading is crucial to success in the world, and students who develop a love of reading from an early age have a huge advantage in that they have the benefit of drawing from stores of knowledge experienced through reading which can help them navigate a vast sea of real-world personal situations as they actually encounter them. A two-fold approach to understanding and appreciating literature includes:

A formulaic and decisive study through analysis of the primary literary genres including:

- in-depth readings of 1) prose: fiction & non-fiction, 2) drama, 3) poetry, and 4) non-print media such as visual and performing art, film & television, speeches and other orations

alongside the identification and evaluation of the use of elements of literature that are both

familiar (i.e. dialogue, plot, characters, etc.) as well as obscure (synecdoche, dactyl, etc.) in order to extract & infer meaning and purpose as a result of the author’s intentions – whether assumed or implied, hidden or obvious - and to understand the historical context(s) in which the pieces are set/written that round out a comprehensive understanding of the origin of a given literary work. It is important to extend and accelerate the gifted student’s knowledge of literary elements as he/she is highly likely to encounter obscure terms on standardized testing such as MAP; thus, early exposure to these terms gives the gifted student the ability to continue to score higher and higher on the vocabulary component of such tests. Without early exposure to these terms, a student’s score may fall because he/she simply had never seen a term that most college level students may not have ever seen as well. Students will maintain a personal handbook (in a spiral notebook) throughout 5th grade and middle school in which to record their terms, and the teachers will also provide an online database that can be accessed via Moodle (below is a sample entry):

Exposure to and experience with (rather than focused study of) literature based on both student-chosen and teacher-assigned works of literature across all genres increases an appreciation of reading, and may open the door to the love of a different genre. Typically, middle school students are fiction-focused. However, once they’ve been exposed to fun, interactive non-fiction (FYI – according to Debbie Barron, the ELA Coordinator for Greenville County Schools, U.S. adults’ literary consumption is 90% non-fiction), they often gain a new lifelong love of the genre that is rich

with information, often entertaining, challenging to read (being comprised of text as well as graphics), and abundant in supply. In fact, non-fiction requires students to apply higher order thinking skills to determine its relevance, applicability, and credibility in their own personal lives. Non-fiction is brain fuel because one has to determine whether or not to believe it from a factual level, recognizing that in all writing, there are inherent biases that must be inferred and analyzed before logical evaluation can occur. The CTC ELA department wants students to love all types of literature; thus, exposure to wide array of genres and mediums is paramount in connecting kids to reading at a more complex level than the average classroom can sometimes provide.

## Grade Level Specific Literature and Themes/Genres:

### 6th Grade

In 6th Grade, we focus on a genre-based study of literature, beginning with fiction and *The Westing Game* during the summer between 5th & 6th grades. This mystery novel is complex in characters and plot, and is challenging for most gifted students. I like for students to take notes on characters, clues, and strategies as they read, so I provide a note-taking guide for this purpose. This individual assignment provides a good introduction to reading for pleasure as well as for analysis, which is the foundation of our literature program. It is imperative that students read the book so that on day 1 of class, we can begin writing a whole-class book review, which then becomes a monthly, individual assignment throughout 6th grade. This monthly assignment incorporates reading for pleasure as well as requires research and analysis for the review the students write: students choose their own books each month, although each month I require a certain genre or category – e.g. October – banned book month; November – historical fiction; December – a classic piece of literature; January – non-fiction; February – May = any medium! After the first whole-class review, this assignment becomes an enrichment piece, completed at-home with unique requirements each month based on what we are working on with our writing components (see Section IV: Writing).

For additional fiction studies, we begin with short stories, as this compacted unit allows us to read and analyze several brief pieces in quick succession using Freytag’s Pyramid (AKA – the shark fin graphic organizer). I love this unit because each class votes on the stories they’d like to read from an extensive list, so each class’ discussions are varied and student (as opposed to teacher) driven. The philosophy behind the short story unit is that once the students can identify elements of the shark fin, then they can apply that knowledge to larger literary works we will study throughout middle school. Other fiction units focus on word play in *The Phantom Tollbooth* along with myths and legends in *The Red Pyramid*, *Odysseus in the Serpent Maze*, *The Lightning Thief* and *King Arthur and His Knights of the Round Table*.

In 6th grade, we also analyze poetry, and this unit is all about the poet and the forms of poetry. Students will choose poems to experience as well as study, along with a poet they would like to research. While every literary unit features certain elements of literature, the poetry unit is purposely packed with them (note the alliteration), as poetry is the perfect genre in which to identify elements and understand why they are being employed within a poem’s condensed language. This unit is both fun and challenging as students read a variety of poems in a range of formats by an array of poets. It is an individualized unit because students read different poems based on their interests as well as choose a poet to study. In our poetry study, we extend beyond the curriculum with identifying and analyzing above-grade level (I’m talking high school and college) literary terminology and author’s craft.

Non-fiction is often an untapped genre for most 6th graders, so I take them through a range of non-fiction options, from online mediums used in our research units, to communications based pieces like speeches, advertisements and cartoons, to scientific journals like *National Geographic*. Many students do not even realize that a lot of what they read and consume is considered non-fiction, so I have them keep a log of their media consumption for analysis. Using Microsoft Excel, we extend our knowledge through graphing and analyzing our reading habits and realize what percent is actually non-fiction vs. fiction.

Drama is the culminating unit for 6th grade, and it’s all about Shakespeare. This accelerated study of the Bard – the real deal, not abridged versions - requires students to read and comprehend complex poetic structure and apply much of the knowledge learned in previous units – from literary allusions to vocabulary, stems and elements – when deciphering Shakespeare’s meanings in his works. Because of time constraints, this unit is also compacted into a condensed study that truly challenges students in a fun and comprehensive way. Finally, we end with a celebratory enrichment day and our annual Shakespeare Festival featuring artists from the Warehouse Theatre’s *Wooden O* along with many other Renaissance festivities.

6th grade is a major transition year, so while the literature we study is challenging for gifted students, it is also purposely designed to enhance students’ confidence in their abilities to read literature from all genres, time periods, and authors as well as their appreciation of a wide range of literary works. By encouraging students to both experience and study literature, to try new genres and authors as well as to choose their favorites at times, they recognize that literature is accessible and diverse. This idea segues directly into the writing component of the 6th grade English program (see Section IV: Writing & Research).

*See tables for Scopes and Sequences.*

## Common Core Standards addressed through reading: Standards for Reading: Literature:

### Key Ideas and Details

1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
3. Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over

Literary Term	Genre(s)	Definition	Example 1	Example 2	Taught By	Year(s) Taught	Grade Level(s)	Piece(s) Found
Allegory	Fiction; Film	a narrative in which a literal meaning corresponds closely to a symbolic meaning and a lesson or moral is taught	<i>Animal Farm</i> by George Orwell tells a story about the adventures of farm animals while actually warning against the dangers of Communism.	<i>The Lion the Witch &amp; the Wardrobe</i> by C.S. Lewis is a fantasy story about 3 children who enter the fantasy world of Narnia, but it is also considered an allegory of the Bible.	Johnston, Reynolds	2009; 2011	6; 7	<i>Animal Farm;</i> <i>The Lion, The Witch &amp; The Wardrobe</i>

the course of a text, interact with other characters, and advance the plot or develop the theme.

### Craft and Structure

4. Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone.

5. Analyze how an author’s choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise. Analyze how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.

6. Analyze a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world literature.

### Integration of Knowledge and Ideas

7. Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words. Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment.

9. Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare). Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

### Range of Reading and Level of Text Complexity

10. Read and comprehend literature, including stories, dramas, and poems, independently and proficiently.

### Standards for Reading: Informational Text:

#### Key Ideas and Details

1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
2. Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.
3. Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced

### Scope and Sequence: 6th Grade

Unit	# of Weeks	Approximate Dates	Literature Piece(s)	Writing Piece(s)
Writing a Book Review	3	August-September	<i>The Westing Game</i>	Book Review (then continues monthly)
Short Stories	4	September-October	Literature Textbooks	Original Short Story
Fiction: Novel Study	3	October	<i>The Phantom Tollbooth</i>	Persuasive Essay - Dynamic Character Analysis
Figurative Language	2	October-November	ICE: Idioms, Clichés & Euphemisms	ICE Origins Presentations: Research Based
Non-Fiction: Bias & Propaganda	2	November	Political Speeches, Advertising & Cartoons	Create your own advertisement (any medium); media consumption log
Mythology of the Ancient World	4	December-January	<i>The Red Pyramid; Odysseus in the Serpent Maze; The Lightning Thief</i>	Mythology Research-Based Game
Communication: Speeches of Merit	1	January	MLK's "I Have A Dream" Speech; Other media	Write your own 2 minute speech
Fiction: Arthurian Legend	4	January-February	<i>King Arthur and His Knights of the Round Table</i>	Art Integration Piece
Non-Fiction: Science & Literature	3	February-March	Non-Fiction: National Geographic	Research Presentation on Nat Geo topic of choice
Poetry	4	March-April	Various Poems	Anthology and Poet Research Project
Shakespeare / Drama	4	April-May	Shakespearean Monologues	Recitations
			Shakespearean Sonnets	Sonnet
			Drama: <i>The Tempest</i>	Research: Tragicomedy Essay
PASS Preparation and Testing	1	Beginning of May	PASS Review & Preparation	PASS Writing Practice Samples
Exam Review and Final Exam Testing	1	End of May	Exam Review & Preparation	Final Exam

and developed, and the connections that are drawn between them.

### Craft and Structure

4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).
5. Analyze in detail how an author’s ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).

6. Determine an author’s point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.

### Integration of Knowledge and Ideas

7. Analyze various accounts of a subject told in different mediums (e.g., a person’s life story in both print and multimedia), determining which details are emphasized in each account.
8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.
9. Analyze seminal U.S. documents of historical and literary significance including how they address related themes and concepts.

**Range of Reading and Level of Text Complexity**

10. Read and comprehend literary nonfiction independently and proficiently.

**WRITING & RESEARCH:**

Writing is often a polarizing subject: as teachers, we tend to see students subdivide into two camps: I love to write or I hate to write. Many students are truly afraid to write, as they often see the process as overwhelming step after step, which makes them prefer to rush through an assignment, rather than linger over each step of the process, savoring word combinations and varying sentence structures, opening his/her palate to the experience of writing. Students want to ‘get done’ with an assignment, but one thing that must be inherently learned about writing is that a piece of writing can always be refined, revised, reworked and never has to be finished. We believe the most important concept to impart to students about writing is that, like yoga, it is a personal practice in constantly improving one’s skills. If teachers can instill a sense of patience in their students when it comes to writing, then they’ve won the war. This is the challenge we face as English teachers, but at CTC, we say, “Bring it on!” – Our goal: to change every “I hate writing” student into a student who feels comfortable in the process, even going so far as to say he/she loves a particular form of writing by the end of his/her middle school career. Conversely, the CTC ELA department wants to continue to foster a love of writing for those students who already do love it. We would like nothing more than to receive autographed first editions of former students’ published works. Some of our students are actually publication-ready by the time they come through the program, and that’s becoming another focus of our curriculum for those students who are truly writers at heart.

In order to encourage students to diversify their writing repertoire so that they can develop writing skills in a variety of genres, teachers should provide lots of opportunities and supportive instruction for students. At the very least, teachers should empower students to write across multiple genres, in order to foster writing skills in the hopes that they will be comfortable with writing, perhaps even cultivating an appreciation for the craft along the way. In order to do this, teachers must provide ample scaffolding of any given writing assignment with specific and direct instruction, followed by practice time for writing without penalty. Assessing students is important for teachers to know where each student’s strengths and weaknesses lie, but doing so does not have to paralyze a student’s confidence. Rather than constantly berating students for what they ‘missed’ in a writing piece, teachers must focus on what students ‘get’ out of accomplishing the act of writing in a given piece. CTC’s approach to writing is layered throughout the middle school program (beginning in 5th grade) to

**Scope and Sequence 7th Grade**

Unit	# of Weeks	Months	Literature Piece(s)	Writing Piece(s)
<i>Ella Minnow Pea</i> - Dystopia Preview	1	August	<i>Ella Minnow Pea</i> by Mark Dunn	Book Review
Dreams & Surrealism	4	August-Mid-Sept	<i>Gossamer</i> by Lois Lowry	Writing an Allegorical Short Story / Surrealism Collage
Reading & Writing the Political Cartoon	1	Mid-September	Research Sources: Political Cartoons	Create your own political cartoon
WWII - Historical Fiction & Context	8	Mid-September-October	Fiction: <i>Weedflower</i> ; <i>The Book Thief</i> & excerpts from <i>Anne Frank</i> Primary Sources: <i>Pictures from Poston</i> film study; <i>Jackdaw</i> ; various websites - Bias & Propaganda	Multi-genre writing: Intern Camp Scrapbook: Personal Narratives, Poetry, News Articles, Editorials, Letters, Camp Documents
Utopias/Dystopias	6	December / January	<i>The Giver</i> , <i>Animal Farm</i>	Research – Create your own utopia; Debate
Civil Rights	6	January	MLK, Jr.’s "I Have A Dream" Speech / <i>Watsons Go to Birmingham / Four Little Girls (film)</i>	Multi-Media Presentation
Shakespeare – Compare & Contrast	8	March-April	Drama - <i>Twelfth Night</i>	One-Act Play
			Drama - <i>A Midsummer Night’s Dream</i>	Character Analysis Essay
			16th Century English Laws vs. Modern US Laws	Research: Compare & Contrast Essay
PASS Preparation and Testing	1	Dates in May TBD	PASS Review & Preparation	PASS Writing Practice Samples
Exam Review and Final Exam Testing	1	Dates in May TBD	Exam Review & Preparation	Final Exam

accommodate for weaknesses and build skills in each grade, buoying confidence with writing across a variety of genres, and it culminates with more academic based writing in 8th grade, looking ahead to college readiness classes such as AP English. With this layered approach, comes a multi-faceted methodology to communicating through the written word including:

- a. Writing for a wide variety of audiences and in a number of genres. In each grade level, we write narratives, essays, persuasive pieces, speeches, and informative pieces for presentations.
- b. Writing for authentic audiences through a variety of means, e.g. participating in writing contests, posting opinion-based responses to literature onto Moodle in forums, sharing

persuasive media reviews with peers in hopes of encouraging others to consume like literature, contributing feedback to peers on personal writing pieces, and reading/performing/reciting works to an audience.

- c. Research-based writing that focuses on a topic of interest and demonstrates the student’s understanding of using information derived from credible sources to justify his/her own hypotheses about a topic. Each grade level will focus on specific skills that build upon more advanced researched skills: i.e. 6th grade focus is introduction to in-text citations & works cited page; 7th grade focuses on supporting one’s argument and logically arguing one’s position;



8th grade focuses on completing a formal research paper.

d. Editing and Revising: As part of the writing process, students must understand the importance of actually taking the time to edit and revise their work. This is the most dreaded part of the writing process for most students; they really do hate to edit and revise. After much trial and error, the ELA department has found the path of least resistance so to speak by implementing the MY PEPPERMINTS program in 5th -7th grades and then in 8th grade, focusing on academic writing with MCT's Academic Writing along with differentiating using the 6+1 Writing Traits.

### Common Core Standards addressed through writing:

#### Text Types and Purposes

1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.

b. Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns.

c. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

e. Provide a concluding statement or section that follows from and supports the argument presented.

2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and

### Scope and Sequence 8th Grade

Unit	# of Weeks	Standards & Indicators (CC)	Literature Piece(s)/ Resources	Writing Pieces
Author's Craft in Literary Fiction	1	E1-1.1, E1-1.2, E1-1.4, E1-1.5, E1-1.6, E1-1.8	<i>The Outsiders</i>	Students will respond to literature through Reader's Journals
	August		<i>Self-selected Novel</i>	
Mythology	5	E1-1.1, E1-1.3, E1-1.4, E1-1.6, E1-3.3, E1-3.4, E1-5.3, E1-5.1 E1-5.1, E1-5.5	<i>The Odyssey</i>	???
	August - September		Edith Hamilton's <i>Mythology</i>	
Short Story Structure (Poetober)	2	E1-1.1, E1-1.2, E1-1.3, E1-1.4, E1-5.2	"Cask of Amontillado" + "The Tell-Tale Heart" + "The Mask of Red Death"	Poe Projects: Literary Tableaux
	October			
Lord of the Flies	3	E1-1.1, E1-1.2, E1-1.4, E1-1.5, E1-1.6, E1-1.8	<i>Lord of the Flies</i>	Students will respond to literature through Reader's Journals and critical reviews
	October - November			
Author's Craft in Literary Fiction	4	E1-1.1, E1-1.2, E1-1.4, E1-1.5, E1-1.6, E1-1.8, E1-5.4	<i>To Kill a Mockingbird</i> & <i>12 Angry Men</i>	Write Legislation to prevent injustice
	November			
Poetry	2	E1-1.1, E1-1.2, E1-1.3, E1-1.4, E1-1.5, E1-1.6, E1-1.7, E1-3.1, E1-5.2	<i>various poems</i>	poetry responses' poetry analyses
	December			
Drama	3	E1-1.1, E1-1.2, E1-1.3, E1-1.4, E1-1.5, E1-1.6, E1-1.7	Antigone	Critical response/Act out scenes from play (monologues)
	January			
Technical Writing	1	E1-2.1, E1-2.2, E1-2.3, E1-2.4, E1-2.5, E1-2.7, E1-2.8, E1-3.3, E1-4.3, E1-4.4, E1-5.3	Business documents	Business Letter
	January		Job Applications	Update Resume
Research Paper	5	E1-5.5, E1-6.1, E1-6.2, E1-6.3, E1-6.4, E1-6.5, E1-6.6, E1-6.7, E1-6.8	Short text samples; MLA Citation practice	8 <sup>th</sup> Grade Research Project;
	February - March			Persuasive Research Paper on current issue of choice (5-6 pages)
Drama	4	E1-1.3, E1-1.4, E1-1.5, E1-1.6, E1-3.1, E1-3.3	<i>Romeo and Juliet</i>	Critical response/Act out scenes from play
	March - April			
Memoir	4	E1-2.1, E1-2.2, E1-2.3, E1-2.4, E1-1.5, E1-4.1, E1-4.3, E1-4.4, E1-4.5, E1-5.2	<i>Memoirs (Choose)</i>	Memoir
	April - May		<i>I Know Why the Caged Bird Sings</i>	
Exam Review and Final Exam Testing	2		Exam Review & Preparation	Final Exam: State EOC
	May			

examples appropriate to the audience's knowledge of the topic.

c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

d. Use precise language and domain-specific vocabulary to manage the complexity of the topic.

e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

3. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

- a. Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.
- b. Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters.
- c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.
- d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.
- e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

### Production and Distribution of Writing

- 4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- 5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
- 6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.

### Research to Build and Present Knowledge

- 7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- 8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.
- 9. Draw evidence from literary or informational texts to support analysis, reflection, and research.

- a. Apply grades 9–10 Reading standards to literature (e.g., “Analyze how an author draws on

and transforms source material in a specific work [e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare]”).

- b. Apply grades 9–10 Reading standards to literary nonfiction (e.g., “Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning”).

### Range of Writing

10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

*Note on range and content of student writing: For students, writing is a key means of asserting and defending claims, showing what they know about a subject, and conveying what they have experienced, imagined, thought, and felt. To be college- and career ready writers, students must take task, purpose, and audience into careful consideration, choosing words, information, structures, and formats deliberately. They need to know how to combine elements of different kinds of writing—for example, to use narrative strategies within argument and explanation within narrative—to produce complex and nuanced writing. They need to be able to use technology strategically when creating, refining, and collaborating on writing. They have to become adept at gathering information, evaluating sources, and citing material accurately, reporting findings from their research and analysis of sources in a clear and cogent manner. They must have the flexibility, concentration, and fluency to produce high-quality first draft text under a tight deadline as well as the capacity to revisit and make improvements to a piece of writing over multiple drafts when circumstances encourage or require it.*

### COMMUNICATION:

Presenting Products & Providing & Analyzing Feedback (both peer to peer and teacher-student) – allow time for rehearsal of presentations; learn how to present; and then allow for time to read and analyze personal feedback and ask questions of the reviewer before revision.

- Add dealing with nerves and the stress of public speaking
- Skills in public speaking: eye contact, poise, projection, tone
- Debate and argumentation (include vocab e.g.. Fallacy, burden of proof, etc.)- especially 8th grade who like to argue
- Tone in email and other writing
- Time and place- formal and informal
- Recitation

### Common Core Standards addressed through speaking and listening (communication):

#### Comprehension and Collaboration

- 1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.
  - a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.
  - b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed.
  - c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.
  - d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.

2. Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.

3. Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.

#### Presentation of Knowledge and Ideas

- 4. Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.
- 5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.
- 6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.



# Mathematics

*Ms. Gordon & Ms. Porterfield*

Charles Townes Center math curriculum is an enriched and accelerated program. In middle grades, the scope and sequence allows students to take Pre-Algebra in 6th grade, Algebra I Honors in 7th grade and Geometry Honors in 8th grade. Throughout the curriculum, the students have the opportunity to explore the concepts through a variety of hands-on and inquiry based activities. The Algebra I Honors curriculum explores many concepts typically found in more advanced courses like recursion, applications of quadratic functions in physics, networks, and linear and quadratic regressions with correlation coefficients. The Geometry Honors course contains discrete math topics like vertex-edge graphs, an in-depth exploration of vectors and trigonometry as well as topics like Heron's Formula. Technology is also a focus using the TI-84 calculators and dynamic geometry platforms like Cabri and Geometer's Sketchpad.

# Math 6,7,8 for 6th Grade

Unit	Standards (SC and CC)	Key concepts	Activities to support
<b>1<sup>st</sup> quarter</b>			
Review:		Use order of operations and properties to solve / simplify expressions and one-step equations. Justify reasoning.	Reader's Theater: Order of operations
Operations with integers	7-2.3, 8-2.5, 7-2.8, 8-2.1, 8-3.3  [CC8.NS.2, 7.NS.abc, 8.EE.2, 7.NS.1.abcd, 7.NS.2.abc, 7.NS.3]	a. Apply the concept of absolute value. b. Compare integers and order integers using a number line. c. Generate strategies to add, subtract, multiply, and divide integers. d. Apply an algorithm to add, subtract, multiply, and divide integers.	•Manipulatives – multi-colored chips: •Use counters to generate strategies for adding and subtracting integers. •Card game – practice adding, subtracting, multiplying, and dividing integers
Operations with Rational Numbers	6-2.5, 8-2.4, 7-2.9, 8-2.2, 7-2.1, <b>8-2.6</b>  [CC:8.NS.2]	a. Convert between fractions/decimals/percents – less than and greater than 100 b. Add, subtract, multiply, and divide fractions and decimals – to include converting from one form to another before solving and computing both positive and negative rational numbers	Matching game: percents/decimals/ fractions Egyptian Hieroglyphics-coordinate graphing I have/who has... Rational numbers skit Rational numbers anchor chart
Expressions and Equations	8-2.1, 8-2.5, 8-3.3, 8.3-4 [CC: 7.EE.4]	a. Understand the concept of equivalency b. Use inverse operations to solve equations. c. Use appropriate properties to solve equations and simplify expressions. Justify reasoning using vocabulary and check solutions.	Manipulatives: Using Algebra Tiles  Haunted House: graphing, transformations, and dilations
Multi-step Equations and Inequalities:	7-3.4, 7-3.5 [CC: 7.EE.3, 7.EE.4b]	a. Understand the concept of equivalency. b. Use inverse operations to isolate the variable. c. Use appropriate properties to solve multi-step equations and inequalities. Justify reasoning using vocabulary and check solutions.	Technology:  Google documents – Dr. Seuss' <i>Green Eggs and Ham</i>

# Math 6,7,8 for 6th Grade

<p><b>2<sup>nd</sup> Quarter</b></p> <p>Ratio, Proportion, and Similar Figures</p>	<p>8-2.7, 7-2.5, 8-5.1, 7-4.8</p> <p>[CC: 7.RP.1, 7.RP.2a, 7.RP.2b, 7.RP.3]</p>	<ul style="list-style-type: none"> <li>a. Understand the relationship between unit cost and ratio and rate</li> <li>b. Apply ratios, rates, and proportions to discounts, taxes, tips, interest, unit costs, and similar shapes.</li> <li>c. Explore real world examples of discounts, taxes, tips and interest.</li> <li>d. Determine the final cost after a discount, taxes and interest are applied.</li> <li>e. Solve proportions using an appropriate strategy.</li> </ul>	<p>Use grocery store circulars and/or restaurant menu to plan costs of assigned meal, etc.</p>
<p>Percent</p>	<p>[CC:7.RP.3]</p>	<ul style="list-style-type: none"> <li>a. Understand the concept of percents.</li> <li>b. Understand and apply rules of Powers of 10 when converting between fractions, decimals, and percents.</li> <li>c. Solve problems using the percent equation.</li> <li>d. Find and use the percent of increase or decrease.</li> </ul>	
<p>Linear Functions and Graphing Part 1</p>	<p>8-3.1, 8-4.2 [CC: 7.EE.1,</p>	<ul style="list-style-type: none"> <li>a. Create function tables and identify the domain and range.</li> <li>b. Graph linear functions; use a variety of methods, such as symbols, tables, and diagrams to explain mathematical reasoning.</li> <li>c. Use a calculator to represent and compare functions and to find unknown values in a sequence.</li> <li>d. Understand the concept of a relation.</li> </ul>	<p>Dr. Seuss' Sneetches</p>

# Math 6,7,8 for 6th Grade

## 3<sup>rd</sup> Quarter

Linear functions and Graphing Part 2

8.3-5, 8-3.6

- a. Determine whether a relation defined by a graph, a set of ordered pairs, or a symbolic expression is a function and justify the conclusion.
- b. Translate among verbal, graphic, tabular, and algebraic representations of linear functions.
- c. Graph linear functions; use a variety of methods, such as symbols, tables, and diagrams to explain mathematical reasoning.
- d. Produce the other
- e. two representation when given one of them (produce a table given the graph or the equation)
- f. Identify increasing and decreasing linear patterns from the graph, table and equation
- g. Understand that the x-intercept is in the form (x,0)
- h. Understand that the y-intercept is in the form (0,y)
- i. Identify slope (m) and y-intercept (b) of a linear equation
- j. Understand that the x-intercept is where the graph crosses the x axis
- k. Understand that the y-intercept is where the graph crosses the y axis
- l. Have a conceptual understanding of slope (rate of change)
- m. Use the process of rise over run to find the slope from graph
- n. Understand that slope is the steepness and direction of the line.
- o. Recall that the slope is the coefficient of x in  $y=mx + b$  and  $y = b + mx$
- p. Understand the effect the m has on the equation and the graph
- q. Solve systems of equations by graphing (use real-world examples as models for systems of equations.)

Technology:  
streamline videos and use of graphing calculators

Art: Creating an image using given slopes

Card game: matching equations and graphs

Powers and Nonlinear Functions

8.3-5

- a. Recognize that if a relationship does not fit these criteria, the relationship is nonlinear. (Does not have constant rates of change)
- b. Understand the graphs of nonlinear functions are not straight lines.
- c. Understand the structure of a linear equation
- d. Understand that linear equations do not have variables in the denominator
- e. Understand that a linear equation cannot contain variables with exponents other than one

# Math 6,7,8 for 6th Grade

<p>Real Numbers and Right Triangles</p>	<p>8-4.1,8-2.3,8-2.4</p>	<ul style="list-style-type: none"> <li>a. Identify and classify numbers in the real number system – rational and irrational numbers.</li> <li>b. Differentiate between rational and irrational numbers.</li> <li>c. Understand that the square root of a number that is not a perfect square is an irrational number.</li> <li>d. Understand the relationship among the sides of a right triangle.</li> <li>e. Apply the Pythagorean Theorem.</li> </ul>	
<p>Distance and Angle</p>	<p>8-4.2, 8-4.1</p>	<ul style="list-style-type: none"> <li>a. Use the Pythagorean Theorem to find the distance between two points on a coordinate plane.</li> </ul>	
<h2>4<sup>th</sup> Quarter</h2>			
<p>Surface Area and Volume</p>	<p>7-5.2, 8-5.2, 8-5.3 [7.G.6]</p>	<ul style="list-style-type: none"> <li>a. Identify and classify three dimensional shapes.</li> <li>b. Understand the formula for finding surface area and volume.</li> <li>c. Apply strategies and formulas to compute the surface areas and volumes of prisms, pyramids, cones, spheres, and cylinders.</li> <li>d. Explore the relationship between the surface areas and volumes of similar solids.</li> </ul>	
<p>Statistics and Probability</p>	<p>8-6.8, 7-6.3, 7-6.4, 7-6.2, 8-1.8, 8-1.7, 8-1.6, 7-6.5, 8-6.3, 8-6.2,7-6.7, 7-6.6,7-6.8, 8-6.4, 8-6.5, 8-6.7</p> <p>[CC:7.SP.3, 7.SP.4, 7.SP.5, 7.SP.7, 7.SP.8]</p>	<ul style="list-style-type: none"> <li>a. Determine the mean, median, mode, and range for a set of data.</li> <li>b. Determine which measure of central tendency or range is most appropriate to describe a set of data.</li> <li>c. Use the range when the describing the spread, or how far the values are spread out.</li> <li>d. Determine how the mean, median, mode and range change when data is altered.</li> <li>e. Find the measures of variation of a set of data.</li> <li>f. Calculate and interpret the interquartile range.</li> <li>g. Use the measure of variations to describe data.</li> <li>h. Create and interpret box-and-whisker plots.</li> <li>i. Display and interpret data in stem-and-leaf plots.</li> <li>j. Select an appropriate display for a set of data.</li> <li>k. Create scatterplots for two sets of data, find the line of best fit for each and compare these lines of best fit.</li> <li>l. Recognize data that is increasing (positive correlation – positive slope)</li> <li>m. Recognize data that is decreasing (negative correlation – negative slope)</li> <li>n. Organize data in matrices or scatterplots as appropriate</li> <li>o. Find and differentiate between the theoretical and experimental probability of the same events.</li> <li>p. Use theoretical and experimental probability to make inferences and convincing arguments about an event or events.</li> <li>q. Calculate and interpret the probability of mutually exclusive simple or compound events.</li> <li>r. Use the fundamental counting principle to determine the number of possible outcomes for a multistage event.</li> <li>s. Calculate the probability of two dependent events.</li> <li>t. Compute the odds of a given event.</li> <li>u. Calculate and interpret probability for two dependent events.</li> </ul>	

# Math 8 for 7th Grade

Unit Description	Standards and indicators	Key Concepts	Materials and Resources Implemented	Assessment
<p>Unit 1: Patterns, Functions, Equation Writing and Problem Solving Strategies</p>	<p>SC Process standards all; 8-3.1 translate among verbal, graphic, tabular and algebraic representations of linear (and exponential) functions; 8-6.1 generalize the relationship between two sets of data by using scatter plots and lines of best fit</p> <p>CC 8.F.1: Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output 8.F.2: Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions) 8.F.4: Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values 8.F.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.</p>	<ul style="list-style-type: none"> <li>• Create multiple representations of a pattern (verbal, graphical, tabular and algebraic)</li> <li>• Express a relationship as an algebraic expression or equation in function notation</li> <li>• Determine if a relation is a function</li> <li>• Use problem solving strategies to solve real-world problems</li> </ul>	<p>Creative Problem Solving – Patterns</p> <p>Visual Approach to Functions books</p> <p>Chapter 1 in Pre-Algebra text for daily practice</p>	<p>Quiz Graphic organizer classwork grade</p>
<p>Unit 2: Integers and Rational Numbers</p>	<p>Process 8-1.1, 8-1.2, , 8-1.4, 8-1.6 Num &amp; Op 8-2.1, 8-2.2, 8-2.4, 8-2.5, Geo 8-4.2 (sec. 2-6 and 2-7) Alg. 8-3.2, 8-3.3, 8-3.4</p> <p>CC 8.NS.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats into a rational number (fraction) 8.NS.2 use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram and estimate the value of expressions like pi squared</p>	<ul style="list-style-type: none"> <li>• Add, subtract, multiply and divide integers and rational numbers (especially negative fractions and mixed numbers)</li> <li>• Show the location of integers and irrational numbers on the number line</li> <li>• Convert repeating decimals to fractions</li> </ul>	<p>Chapters 2 and 3 in Pre-Alg textbook for daily practice</p> <p>Two-color chips</p>	<p>4 quizzes 2 tests Classwork grades Daily homework grades</p>



# Math 8 for 7th Grade

<p>Unit 3: Algebraic Equations and Expressions</p>	<p>Alg 8-3.1, 8-3.2, 8-3.3, 8-3.4 Process 8-1.1, 8-1.4 Geo 8-5.5 (sec. 5-1)</p> <p>CC 8.EE.7 Solve linear equations in one variable a) give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form <math>x=a</math>, <math>a=a</math>, or <math>a=b</math> results (where <math>a</math> and <math>b</math> are different numbers); b) solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms</p> <p>8.EE.8 Analyze and solve pairs of simultaneous linear equations, a) understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously; b) solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. C) solve real-world and mathematical problems leading to two linear equations in two variables.</p>	<p>•Solve one, two and multi-step equations including those with rational numbers, integers, parentheses (Distributive Property), and putting like terms together -</p>	<p>Chapters 4 and 5 in Pre-Alg textbook</p>
<p>Unit 4: Powers and Exponents</p>	<p>Num &amp; Op 7-2.6, 7-2.7</p> <p>CC 8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions 8.EE.2 Use square root and cube root symbols to represent solutions to equations in the form of <math>x</math> squared or <math>x</math> cubed <math>=p</math> where <math>p</math> is a positive rational number Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that the square root of 2 is irrational. 8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities and to express how many times as much one is than the other. 8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology.</p>		<p>Chapter 9 of Pre-Alg textbook</p>

# Math 8 for 7th Grade

<p>Unit 5: Real Numbers and Pythagorean Theorem</p>	<p>Process 8-1.7, 8-1.8                      Num &amp; Op 8-2.3, 8-2.4, 8-2.6                      Geo 8-4.1</p> <p>CC                      8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions                      8.EE.2 Use square root and cube root symbols to represent solutions to equations in the form of <math>x^2 = p</math> or <math>x^3 = p</math> where <math>p</math> is a positive rational number Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that the square root of 2 is irrational.                      8.G.6 Explain a proof of the Pythagorean Theorem and its converse.                      8.G.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.                      8.G.8 Apply the Pythagorean theorem to find the distance between two points in a coordinate system.</p>		<p>Chapter 10 of Pre-Alg textbook</p>	
<p>Unit 6: Geometry and Measurement: Area, volume and surface area</p>	<p>Process 8-1.1, 8-1.8                      Measurement 8-5.1, 8-5.2, 8-5.3, 8-5.4, 8-5.5                      DA and Prob 8-6.7</p> <p>CC                      8.G.1 Verify experimentally the properties of rotation, reflections and translations: a) lines are taken to lines and line segments to line segments of the same length, b) angles are taken to angles of the same measure; and c) parallel lines are taken to parallel lines                      8.G.2 understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a series of rotations, reflections and translations; given two congruent figures, describe a sequence that exhibits congruence between them                      8.G.3 describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates.                      8.G.4 understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them                      8.G.5 use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal and the angle-angle criterion for similarity of triangles. (for example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so)                      8.G.9 know the formulas for volumes of cones, cylinders and spheres and use them to solve real-world and mathematical problems</p>		<p>Chapters 11 (section 6-9 only) and 12</p>	

# Honors Algebra I

Unit	Standards (SC and CC)	Key concepts	Activities to support	Materials implemented	Assessment
<p>Unit 1: Solving equations in one variable</p> <p>EQ: How does solving equations apply to the real world?</p>	<p>EA 1.1, EA 1.3, EA 2.1, EA 2.5, EA 2.4, EA 3.8, EA 1.6, EA 4.7, EA 3.7</p> <p>CC</p> <p>A.SSE.1 (interpret expressions that represent a quantity in terms of its context; a. interpret the parts of an expression, such as terms, factors and coefficients; b. interpret complicated expressions by viewing one or more of their parts as a single entity)</p> <p>A.REI.1 (explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify the solution method (algebraic proof))</p> <p>A.REI.3 (Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters)</p> <p>A.REI.11 (explain why the x-coordinates of the points where the graphs of the equations <math>y=f(x)</math> and <math>y=g(x)</math> intersect are solutions of the equation <math>f(x)=g(x)</math>; find solutions approximately using technology to graph the functions, make a table of values or find successive approximations. Include cases where <math>f(x)</math> and/or <math>g(x)</math> are linear)</p> <p>A.CED.4 (rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations)</p> <p>N.Q.1 (use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays)</p> <p>N.Q.3 (Choose a level of accuracy appropriate to limitations on measurement when reporting quantities)</p>	<ul style="list-style-type: none"> <li>•Understand the structure of the real number system and how subsets are related</li> <li>•Use properties of real numbers and the properties of equality to simplify expressions , prove mathematical statements and justify steps of simplification</li> <li>•Solve problems using proportions</li> <li>•Solve one-, two- and multi-step equations using the properties of real numbers and the properties of equality; represent solution process using concrete models (including absolute-value equations)</li> <li>•Solve literal equations for a specific variable</li> </ul>	<p>Creation of graphic organizers including Frayer models and Venn diagrams (real number system, properties of equality)</p> <p>TI Navigator activities</p>	<p>Chapter 1 of Holt textbook for everyday practice sets</p> <p>TI 84+ graphing calculators and TI Navigator system</p> <p>AIMS activities for concrete modeling of solution process</p>	<p>Daily homework grades, quizzes, test, classwork grades for graphic organizers and notebooks</p>
<p>Unit 2: One Variable Linear Inequalities</p> <p>EQ: How does solving inequalities apply to the real-world?</p>	<p>EA 1.3, 4.8, 5.12, 1.6, 1.5</p> <p>CC: A.REI.3 Solve linear equations and inequalities in one variable including equations with coefficients represented by letters</p>	<ul style="list-style-type: none"> <li>•Write and solve inequalities in one variable</li> <li>•Graph solution set on a number line</li> <li>•Use Venn diagrams to represent unions and intersections of sets</li> <li>•Write and solve compound inequalities</li> <li>•Graph solution set on a number line</li> <li>•Solve and graph absolute value inequalities</li> </ul>		<p>Chapter 2 of Holt Algebra textbook for everyday practice</p>	

# Honors Algebra I

<p>Unit 3: Using Algebra and Graphs to Describe Relationships EQ: What is the best way to represent a function?</p>	<p>EA 1.1, 1.5, 1.6, 3.1, 3.2, 3.3, 3.4, 5.9, 5.10  CC: F.IF.1 (understand that a function from one set (called the domain) to another set (called the range) assigns each element of the domain to exactly one element of the range.), F.IF.2 (use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context), F.IF.3 (recognize that sequences are function, sometimes defined recursively, whose domain is a subset of the integers), F.IF.5 (relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes), F.IF.4 (for a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch the graphs showing key features given a verbal description of the relationship. Key features include intercepts, intervals where the function is increasing or decreasing, positive or negative, relative max and min, symmetries, end behavior), S.ID.6 (represent data on two quantitative variables on a scatter plot, and describe how the variable are related)</p>	<ul style="list-style-type: none"> <li>•Identify geometric and numeric patterns and represent them symbolically</li> <li>•Use graphs to describe relationships</li> <li>•Determine if a relation is a function</li> <li>•Identify the domain and range of the function</li> <li>•use function notation to evaluate functions for a specific value of the domain</li> <li>•use multiple representation of linear functions to model problem situations</li> <li>•Express relationships using recursive functional notation and answer questions arising from recursive relationships (honors topic)</li> <li>•Analyze scatterplots and generate lines of best fit as well as characterize correlation (8<sup>th</sup> grade data analysis standards as well as CC S.ID.6)</li> </ul>	<p>NCTM Navigations Algebra 9-12 for recursive function notation: Would You Work for Me? The Devil and Daniel Webster</p> <p>NCTM Navigations Data Analysis 6-8 for scatterplots: Olympic Gold Times (creation, interpolation, evaluation), Reading a Scatterplot (writing about data), Pizza and Congress (creating and analyzing), People, Pizza and Congress (interpolation)</p> <p>NCTM Discrete Math 6-12: Looking at Square Tiles from All angles(recursive function)</p> <p>Monopoly problem</p> <p>Begin Barbie Bungee Jumping (data collection and scatterplot interpretation)</p>	<p>Chapter 3 of Holt Algebra textbook for everyday practice</p> <p>NCTM Navigations Algebra 9-12 Data Analysis 6-8 Discrete Math 6-12</p>
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# Honors Algebra I

<p>Unit 4: Graphing and Analyzing Linear Functions EQ: What does a linear function look like?</p>	<p>EA 1.5, 3.1, 5.6, 5.7, 4.6, 1.6, 1.1, 1.3, 1.7, 4.1, 4.2, 5.1, 5.2, 5.3, 5.4, 4.3, 5.9, 5.10</p> <p>CC: A.Rel.10 (understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line)), F.IF.6 (calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specific interval. Estimate the rate of change from a graph), F.IF.7 (graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases), A.CED.2 (create equations in two or more variables to represent the relationships between quantities; graph on coordinate axis with labels and scales), S.ID.6 (represent data on two quantitative variables on a scatter plot and describe how the variables are related), G.GPE.5 (prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems like finding the equation of a line perpendicular or parallel to a given line that passes through a given point), F.BF.3 (identify the effect of the graph of replacing <math>f(x)</math> by <math>f(x) + k</math>, <math>f(kx)</math> and <math>f(x+k)</math> for specific values of <math>k</math> (both positive and negative), find the value of <math>k</math> given the graphs)</p>	<ul style="list-style-type: none"> <li>•Determine if a relation in tabular or verbal form can be represented by a linear function</li> <li>•Determine the slope from multiple representation (graphs, tables, ordered pairs and algebraic equations)</li> <li>•Interpret slope as a rate of change</li> <li>•Write a direct variation function, identify the constant of variation and graph</li> <li>•Represent and translate among the various forms of a linear function (slope-intercept, standard, point-slope)</li> <li>•Determine the <math>x</math> and <math>y</math> intercepts from multiple representation; graph linear functions using <math>x</math> and <math>y</math> intercepts</li> <li>•Interpret meaning of intercepts based on real-life scenarios</li> <li>•Write and graph a linear equation using slope-intercept form, with and without technology</li> <li>•Relate slope-intercept form to transformation of the parent function <math>y=x</math></li> <li>•Given two points, graph and write the equation of a linear function containing those points. Include functional relationships embedded in real world contexts</li> <li>•Write and graph the point-slope form of an equation with and without technology</li> <li>•Relate to transformation of the parent function</li> <li>•Generate a line of best fit for a scatterplot with and without technology</li> <li>•Determine the correlation coefficient and interpret</li> <li>•Identify, write and graph the equation of a line parallel to or perpendicular to a given line through a given point</li> <li>•-find the domain and range of a piecewise function over a given interval</li> <li>•- determine the average rate of change (slope) of a piecewise function over a given interval</li> <li>•-interpret a piecewise function that represents a real-life situation</li> </ul>	<p>Finish Barbie Bungee Jumping (line of best fit and correlation coefficient)</p>	<p>Chapter 4 of Holt Algebra textbook for everyday practice</p> <p>NCTM Navigations</p>	
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# Honors Algebra I

<p>Unit 5: Linear Systems and Interacting Linear Functions EQ: What is the best way to solve a system of equations?</p>	<p>EA 1.3, 1.7, 4.9, 5.11, 4.10, 1.5, 3.2, 3.4, 4.1, 4.2, 4.3</p> <p>CC: A.REI.3, 5, 6, 12</p>	<ul style="list-style-type: none"> <li>•- write a system of equations</li> <li>•- solve by graphing with and without technology</li> <li>•-classify systems</li> <li>•- solve by substitution</li> <li>•- solve by elimination</li> <li>•-model and solve real world problems using a system and applying the most suitable method for solution</li> <li>•- solve a system of linear inequalities using graphing</li> </ul>		<p>Chapter 5 of Holt Algebra textbook for everyday practice</p>	
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# Honors Algebra I

<p>Unit 6: Exponents and Exponential Functions</p> <p>EQ: How do you simplify an expression containing exponents?</p>	<p>EA 2.2, 2.5, 2.6, 2.7, 1.3, PC 4.8</p> <p>CC:</p> <p>N.RN.1 (explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents i.e. fractions)</p> <p>N.NR.2 (rewrite expressions involving radicals and rational exponents using the properties of exponents)</p> <p>A.SSE.1a (interpret expressions that represent a quantity in terms of its context; a. interpret parts of an expression as terms, factors and coefficients)</p> <p>A.APR.1 (understand that polynomials form a system of analogous to the integers, namely, they are closed under the operations of addition, subtraction and multiplication; add, subtract and multiply polynomials)</p> <p>N.NR.3 (explain why the sum or product of two rational number is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational)</p> <p>F.IF.3 (recognize that sequences are functions, ..., whose domain is a subset of the integers)</p> <p>F.IF.7e (graph exponential functions, showing intercepts and end behavior)</p> <p>F.LE.2 (construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of the relationship, or two input-output pairs (including reading those from a table of values)</p> <p>F.LE.1 (distinguish between situations that can be modeled using linear functions and with exponential functions (a. prove that exponential functions grow by equal factors over equal intervals; c. recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another)</p> <p>F.IF.6 (calculate and interpret average rate of change of a function (represented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph)</p> <p>F.IF.9 (compare properties of two functions each represented in a different way (algebraically, tabular, graphically, or by verbal description). For example, given a graph of a quadratic function and the algebraic expression of another, say which has a higher maximum)</p>	<ul style="list-style-type: none"> <li>•Determine the product of monomials and express in simplest form</li> <li>•Simplify expressions containing a power of a power and power of a product</li> <li>•Evaluate and simplify and simplify expressions containing negative and zero integers exponents</li> <li>•Simplify expressions containing quotients of powers and powers of fractions</li> <li>•Represent real-world situations involving exponential growth and decay using tables, graphs and exponential functions (honors)</li> </ul>	<p>Skittles/pennies scenario (exponential decay)</p>	<p>Chapters 6 and 9 of Holt</p>
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# Geometry Honors

Unit Description	Standards and indicators	Key Concepts	Materials and Resources Implemented	Assessment
<p>Unit 1: Coordinate Plane Geometry</p> <p>EQ: What is plane geometry, its historical significance and the basic geometric terminology?</p>	<p>I.A.1, I.B.1, III.B.1</p> <p>CC</p> <p>G.CO.1: know the precise definitions of angle, circle, perpendicular line, parallel line, and line segment based on the undefined notions of point, line and distance around a circular arc</p> <p>G.CO.12: Make formal geometric constructions using a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.)</p> <p>G.GPE.7: use coordinates to compute perimeters of polygons and areas of triangle, rectangles, e.g., using the Distance Formula</p> <p>G.GMD.3: use volume formulas for cylinders, pyramids, cones and spheres to solve problems</p> <p>Mathematical Practices</p> <p>6 – Attend to precision</p> <p>2 – Reason abstractly and quantitatively</p> <p>7 – look for and make use of structure</p> <p>5 – use appropriate tools strategically</p> <p>3 – construct viable arguments and critique the meaning of others</p>	<ul style="list-style-type: none"> <li>•Identify and model points, lines and planes</li> <li>•Identify intersecting lines and planes</li> <li>•Construct planes using one-point perspective drawing</li> <li>•Measure segments</li> <li>•Calculate with measurements</li> <li>•Construct congruent segments using compass and straightedge</li> <li>•Determine precision of measurements</li> <li>•Determine accuracy of measurements</li> <li>•Find relative error</li> <li>•Determine significant digits</li> <li>•Find the distance between two points using coordinates</li> <li>•Find the midpoint of two points using coordinates</li> <li>•Construct a segment bisector using a compass and straightedge</li> <li>•Measure and classify angles</li> <li>•Identify and use congruent angles and the bisector of an angle</li> <li>•Construct angles and angle bisectors using a compass and straightedge</li> <li>•Identify and use special pairs of angles (supplementary and complimentary)</li> <li>•Identify perpendicular lines</li> <li>•Identify and name polygons</li> <li>•Find perimeter, circumference and area of two-dimensional figures</li> <li>•Use dynamic geometric software to construct figures</li> <li>•Identify and name three-dimensional figures</li> <li>•Find the surface area and volume of 3-d figures</li> <li>•Construct orthographic drawings of three-dimensional figures</li> <li>•Construct and label nets of three-d figures</li> <li>•Find the surface area of 3-d figures</li> </ul>	<p>Geometer's Sketchpad software</p> <p>Compass and straightedge for constructions</p> <p>Patty paper</p> <p>constructions</p> <p>Glencoe Geometry textbook Chapter 1</p>	<p>2 quizzes (second quiz will include constructions)</p> <p>1 test</p> <p>Quiz grade for vocabulary</p> <p>Quiz grade for Back to School art project</p> <p>Daily homework grades</p> <p>Classwork grades for constructions and Geometer's sketchpad work</p>



# Geometry Honors

<p>Unit 2: Reasoning and Proof</p> <p>Unit EQ: How do we use inductive and deductive reasoning to solve problems and construct proofs?</p>	<p>1.A.1, 1.C.1 through 1.C.5 CC: G.CO.12 (see Unit 1); G.MG.3 – apply geometric methods to solve problems (e.g. designing an object or structure to satisfy physical constraints or minimize cost; working with typographical grid systems based on ratios) G.CO.9 – prove theorems about lines and angles</p> <p>Mathematical Practices: 2 Reason abstractly and quantitatively 3 Construct viable arguments and critique the reasoning of others 6 Attend to precision</p>	<ul style="list-style-type: none"> <li>•Use inductive and deductive reasoning</li> <li>•Identify and construct conjectures</li> <li>•Produce counterexamples</li> <li>•Identify the truth value of a statement</li> <li>•Write the negation of a statement</li> <li>•Combine two or more statements to form a compound statement</li> <li>•Identify if the compound statement is a conjunction or disjunction</li> <li>•Illustrate a compound statement using a Venn diagram</li> <li>•Create a truth table</li> <li>•Write conditional statements containing a hypothesis and conclusion</li> <li>•Write the converse of a conditional</li> <li>•Write the inverse of a conditional</li> <li>•Write the contrapositive of a conditional</li> <li>•Use the Law of Detachment to draw conclusions from conditionals</li> <li>•Use the Law of Syllogism to draw conclusions from conditionals</li> <li>•Identify a postulate</li> <li>•Identify and prove a theorem</li> <li>•Write a proof</li> <li>•Write algebraic proofs using Properties of Equality</li> <li>•Write a two-column proof with statements and supporting reasons</li> <li>•Prove segment relationships using reflexive, symmetric and transitive properties of equality</li> <li>•Prove angle relationships using Protractor Postulate and Angle Addition Postulate</li> <li>•Use angle theorems to write proofs</li> </ul>	<p>Chapter 2 of Glencoe Geometry text for daily practice</p> <p>Einstein’s logic puzzle</p> <p>Logic networks; truth tables; Alice in Wonderland statements</p>	<p>Daily homework grades Vocabulary section Classwork grades for extensions and honors content 2 Quizzes Chapter test</p>
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# Geometry Honors

<p>Unit 3: Parallel and Perpendicular Lines</p> <p>UEQ: How do we use reasoning, problem-solving and representations to formulate and test conjectures about the properties of lines and angles?</p>	<p>Standard IV.B.1.a, II.A.1, V.B.1, V.B.2, V.B.3</p> <p>CC: G.CO.1: know the precise definitions of angle, circle, perpendicular line, parallel line, and line segment based on the undefined notions of point, line and distance around a circular arc G.CO.12: Make formal geometric constructions using a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.) G.CO.9- prove theorems about lines and angles G.GPE.5: prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g. find the equation of a line parallel or perpendicular to a given line that passes through a given point) G.MG.3: apply geometric methods to solve problems (e.g. designing an object or structure to satisfy physical constraints or minimize cost; working with typographical grid systems based on ratios)</p> <p>Mathematical Practices: 1 Make sense of problems and persevere in solving them 2 Reason abstractly and quantitatively 3 Construct viable arguments and critique the reasoning of others 4 Model with mathematics 6 Look for and express regularity in repeated reasoning 7 Look for and make use of structure</p>	<ul style="list-style-type: none"> <li>•Identify the relationship between two lines or planes</li> <li>•Name angle pairs formed by parallel lines and transversals</li> <li>•Use theorems to determine the relationships between specific pairs of angles</li> <li>•Use algebra to find angle measurements</li> <li>•Find slopes of lines</li> <li>•Use slopes to identify parallel and perpendicular lines</li> <li>•Write an equation of a line given information about the graph</li> <li>•Solve problems by writing equations</li> <li>•Write equations for perpendicular bisectors</li> <li>•Recognize angle pairs that occur with parallel lines</li> <li>•Prove that two lines are parallel</li> <li>•Find the distance between a point and a line</li> <li>•Find the distance between parallel lines</li> </ul>	<p>Geometer's Sketchpad and compass and straightedge for constructions</p> <p>Chapter 3 in Geometry textbook for daily practice</p>	<p>Classwork grades for constructions 2 quizzes 1 test</p>
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# Geometry Honors

<p>Unit 4: Triangles</p> <p>UEQ: How do we make numeric and geometric patterns to make generalizations about triangles?</p>	<p>SC: II.A.1, V.B. 1, V.B.2, V.B.3</p> <p>CC G.CO.12: Make formal geometric constructions using a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.)</p> <p>G.CO.7: Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent</p> <p>G.SRT.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures</p> <p>G.CO.10: Prove theorems about triangles.</p> <p>G.CO.6: Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent</p> <p>G.GPE.4: Use coordinates to prove simple geometric theorems algebraically.</p>	<ul style="list-style-type: none"> <li>•Identify and classify triangles by angle measure</li> <li>•Identify and classify triangles by side measures</li> <li>•Apply the Triangle Angle Sum Theorem</li> <li>•Apply the Exterior Angle Theorem</li> <li>•Name and use corresponding parts of congruent polygons</li> <li>•Prove triangles congruent by definition of congruence</li> <li>•Use the SSS Postulate to test for triangle congruence</li> <li>•Use the SAS Postulate to test for triangle congruence</li> <li>•Use the ASA Postulate to test for congruence</li> <li>•Use the AAS Theorem to test for congruence</li> <li>•Use properties of isosceles triangles</li> <li>•Use properties of equilateral triangles</li> <li>•Identify reflections, translations and rotations</li> <li>•Verify congruence after a congruence transformation</li> <li>•Position and label triangles on the coordinate plane</li> <li>•Write coordinate proofs</li> </ul>	<p>Constructions using Geometer's Sketchpad and compass and straightedge</p> <p>Chapter 4 of Geometry textbook</p>	<p>Classwork grades for constructions</p> <p>Daily homework grades</p> <p>3 quizzes</p> <p>Vocabulary section grade</p> <p>1 test</p>
<p>Unit 5: Relationships in Triangles</p> <p>UEQ: How do we use the properties and attributes of triangles to solve problems?</p>	<p>Use numeric and geometric patterns to make generalizations about Angle relationships, Inequalities and triangles - SC Geometry Standard II.A.1</p> <p>CC G.CO.12: Make formal geometric constructions using a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.)</p> <p>G.CO.10: Prove theorems about triangles</p> <p>G.MG.3: Apply geometric methods to solve problems (e.g. designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios)</p>	<ul style="list-style-type: none"> <li>•Identify and use perpendicular bisectors in triangles</li> <li>•Identify and use angle bisectors in triangles</li> <li>•Construct medians and altitudes in triangles</li> <li>•Identify and use medians in triangles</li> <li>•Identify and use altitudes in triangles</li> <li>•Recognize and apply properties of inequalities of the measures of angles in a triangle</li> <li>•Recognize and apply the properties of inequalities to the relationships between the angles and sides of a triangle</li> <li>•Write indirect algebraic proofs</li> <li>•Write indirect geometric proofs</li> <li>•Use the Triangle Inequality Theorem to identify possible triangles</li> <li>•Prove triangle relationships using the Triangle Inequality Theorem</li> <li>•Apply the Hinge Theorem or its converse to make comparisons in two triangles</li> <li>•Prove triangle relationships using the Hinge Theorem or its converse</li> </ul>	<p>Create "Calder" mobiles using triangles</p> <p>NCTM Navigations activity for Triangle Inequality</p> <p>Matrix logic problems (pg. 353 and 354)</p> <p>Daily practice in Geometry textbook (Chapter 5)</p>	<p>Classwork grade for mobiles</p> <p>Classwork grade for Navigations</p> <p>Classwork grade for matrix logic problems</p> <p>Daily homework grades</p> <p>2 quizzes</p> <p>1 test</p>

# Geometry Honors

<p>Unit 6: Quadrilaterals</p> <p>UEQ: How do we use the properties and attributes of polygons to solve problems?</p>	<p>SC Use numeric and geometric patterns to make generalizations about properties of a. Polygons b. Angle relationships in polygons - SC Geometry Standard II.A.1; Based on explorations and use of concrete models and geometry software, formulate and test conjectures about properties and attributes of polygons and their component parts - SC Geometry Standard IV.B.1.b; Explore symmetry in regular polygons, and analyze the symmetry of objects using the language of transformations – SC Geometry Standard III.B.3 ; Use transformations and their compositions to make conjectures between mathematics and applications using tessellations or fractals, in particular with graphing calculators and geometry software – SC Geometry Standard III.B.4; Find optimal solutions to problems involving paths, networks, or relationships among a finite number of objects, using digraphs or vertex-edge graphs</p> <p>CC</p> <p>G.MG.1: Use geometric shapes, their measures, and their properties to describe objects (e.g. modeling a tree trunk or human torso as a cylinder)</p> <p>G.CO.11: prove theorems about parallelograms</p> <p>G.GPE.4: use coordinates to prove simple geometric theorems algebraically</p> <p>G.CO.12: Make formal geometric constructions using a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.)</p>	<ul style="list-style-type: none"> <li>●Find and use the sum of the measures of the interior angles of a polygon</li> <li>●Find and use the sum of the measures of the exterior angles of a polygon</li> <li>●Recognize and apply properties of sides and angles of parallelograms</li> <li>●Recognize and apply properties of diagonals of parallelograms</li> <li>●Recognize the conditions that ensure a quadrilateral is a parallelogram</li> <li>●Prove that a set of points forms a parallelogram in the coordinate plane</li> <li>●Recognize and apply properties of rectangles</li> <li>●Determine whether parallelograms are rectangles</li> <li>●Recognize and apply the properties of rhombi and squares</li> <li>●Determine whether quadrilaterals are rectangles, rhombi or squares</li> <li>●Apply the properties of trapezoids</li> <li>●Apply the properties of kites</li> <li>●</li> <li>●Honors Extension: graph theory – Hamilton circuits and paths; Euler circuits and paths ; Escher tessellations lab</li> </ul>	<p>Secrets of Polygons review</p> <p>NCTM Navigations for honors extension</p> <p>Geometry textbook Ch. 13 graph theory (pg. 962)</p> <p>Tessellation Lab (2 days)</p> <p>Chapter 6 of textbook</p>	<p>Classwork grades for: tessellation lab; graph theory work; secrets of polygon review</p> <p>3 quizzes</p> <p>1 test</p> <p>Vocabulary section grade</p> <p>Reflection on notebook</p>
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# Geometry Honors

<p>Unit 7: Proportions and Similarity</p> <p>UEQ: How is polygon similarity determined?</p>	<p>Solve problems using proportions involving similar figures - SC Geometry Standards I.D.1, V.A.8 Dilations (non-rigid transformations) and similarity in polygons; Dilations in coordinate plane (matrices) Derive, apply, and justify triangle similarity relationships – SC Geometry Standard V.A.5 Applications of triangle similarity</p> <p><u>Use numeric and geometric patterns to make generalizations about ratios in similar figures</u> – SC Geometry Standard II.A.1 <u>Identify, describe, and defend similarity between shapes</u> – SC Geometry Standard V.A.1</p> <p>Justify conjectures about geometric figures using similarity and transformations – SC Geometry Standard V.A.2</p> <p>CC</p> <p>G.MG.3: Apply geometric methods to solve problems (e.g. designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios)</p> <p>G.SRT.2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides</p> <p>G.SRT.4: Prove theorems about triangles</p> <p>G.SRT.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures</p> <p>G.GPE.5: prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g. find the equation of a line parallel or perpendicular to a given line that passes through a given point)</p>	<ul style="list-style-type: none"> <li>•Write ratios and proportions</li> <li>•Solve proportions</li> <li>•Use proportions to identify similar polygons</li> <li>•Solve problems using the properties of similar polygons</li> <li>•Identify similar triangles using AA Similarity Postulate and SSS and SAS Similarity Theorems</li> <li>•Use similar triangles to solve problems</li> <li>•Use proportional parts within triangles</li> <li>•Use proportional parts with parallel lines</li> <li>•Recognize and use proportional relationships of corresponding angle bisectors, altitudes and medians of similar triangles</li> <li>•Use the Triangle Bisector Theorem</li> <li>•Identify similarity transformations</li> <li>•Verify similarity after a similarity transformation</li> <li>•Interpret scale models</li> <li>•Use scale factors to solve problems</li> </ul>	<p>Chapter 7 of Geometry textbook for daily practice</p> <p>Spreadsheet program for Fibonacci number work</p>	<p>2 quizzes 1 test Daily homework grades Classwork grade for spreadsheet activity Vocabulary section grade</p>
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# Geometry Honors

<p>Unit 8: Right Triangles and Trigonometry UEQ: How are the Pythagorean Theorem and trigonometric ratios used to solve problems?</p>	<p>CC G.SRT.4: Prove theorems about triangles G.SRT.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures  G.SRT.8: Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems G.CO.10: Prove theorems about triangles G.MG.3: Apply geometric methods to solve problems (e.g. designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios) G.SRT.6: understand that by similarity, side ratios in right triangles are properties of the angles in the triangles, leading to definitions of trigonometric ratios for acute angles G.SRT.7: Explain and use the relationship between the sine and cosine of complementary angles G.SRT.9: Derive the formula <math>A = \frac{1}{2}ab \sin(c)</math> for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side G.SRT.10: Prove the Laws of Sines and Cosines and use them to solve problems G.SRT.11: Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g. surveying problems, resultant forces) G.GPE.6: Find the point on a directed line segment between two given points that partitions the segment in a given ratio</p>	<ul style="list-style-type: none"> <li>• Know the history of trigonometry including the applications in surveying and art</li> <li>• Find the geometric mean between two numbers</li> <li>• Solve problems involving relationships between parts of a right triangle and the altitude to its hypotenuse</li> <li>• Prove the Pythagorean Theorem using diagrams</li> <li>• Use the Pythagorean Theorem</li> <li>• Use the Converse of the Pythagorean Theorem</li> <li>• Use the properties of 45-45-90 triangles</li> <li>• Use the properties of 30-60-90 triangles</li> <li>• Find trigonometric ratios using right triangles</li> <li>• Use trigonometric ratios to find angle measurements in right triangles</li> <li>• Solve problems involving angles of elevation and depression</li> <li>• Use angles of elevation and depression to find the distance between two objects</li> <li>• Use the Law of Sines to solve triangles</li> <li>• Use the Law of Cosines to solve triangles</li> <li>• Perform vector operations geometrically</li> <li>• Perform vector operations on the coordinate plane</li> </ul>	<p>Great Trigonometric Survey and history of trig Daily homework from Chapter 8  The Ambiguous Case (SSA)</p>	<p>Daily homework grades  Classwork grade for SSA work  3 quizzes 1 test</p>
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# Geometry Honors

<p>Unit 9: Areas of Polygons and Circles</p> <p>UEQ: How do we use the properties of polygons and circles to find their areas and the areas of composite and irregular figures?</p>	<p>IV.A.1 Students will use problem solving, communication, connections and representations to find the area of quadrilaterals and triangles, circles and regular polygons, composite figures.</p> <p>CC</p> <p>G.GPE.7: Use coordinates to compute perimeters of polygons and areas of triangles and rectangles e.g. using the Distance Formula</p> <p>G.MG.3: Apply geometric methods to solve problems (e.g. designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios)</p> <p>G.MG.2: Apply concepts of density based on area and volume in modeling situations (e.g. persons per square mile, BTUs per cubic foot)</p> <p>G.C.5: Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector</p> <p>G.GMD.1: Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid and cone</p> <p>G.MG.1: Use geometric shapes, their measures, and their properties to describe objects (e.g. modeling a tree trunk or human torso as a cylinder)</p>	<ul style="list-style-type: none"> <li>•Find perimeters and areas of parallelograms</li> <li>•Find perimeters and areas of triangles</li> <li>•Find the areas of trapezoids</li> <li>•Find areas of rhombi and kites</li> <li>•Find the areas of circles</li> <li>•Find the areas of sectors of circles</li> <li>•Find areas of regular polygons</li> <li>•Find areas of composite figures</li> <li>•Find the areas of similar figures by using scale factors</li> <li>•Find scale factors or missing measures given the areas of similar figures</li> </ul>	<p>NCTM Pick's Theorem activity</p> <p>Chapter 11 of Geometry textbook for daily homework</p>	
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# Geometry Honors

<p>Unit 10: Extending Surface Area and Volume UEQ: How are three-dimensional figures represented? How are surface area and volumes of three-dimensional figures determined?</p>	<p>Use numeric and geometric patterns to make generalizations about solid figures – II.A.1; Draw, examine, and classify cross sections of three-dimensional objects – II.A.3 ; <u>Construct a three-dimensional object using a two-dimensional diagram</u> such as a blueprint or pattern – II.A.4; Use top, front, side, and corner views of three-dimensional objects to create accurate and complete representations and solve problems - I.D.1, II.A.5; Represent a three-dimensional object in two dimensions using a graph or dot paper – II.A.6; <u>Use formulas for surface area and volume</u> of three-dimensional objects to solve practical problems - I.D.1, IV.A.4; Using graphing calculators , spreadsheets, and dynamic, interactive geometry software, determine and describe the resulting change in volume when one or more dimensions is changed - IV.A.5, V.A.7</p> <p>CC G.GMD.1: Give an informal argument for the formulas for the circumference of a circle, are of a circle, volume of a cylinder, pyramid and cone G.GMD.3: use volume formulas for cylinders, pyramids, cones and spheres to solve problems G.GMD.4- identify the shapes of two dimensional cross sections of three dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects G.MG.3: Apply geometric methods to solve problems (e.g. designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios) G.MG.1: Use geometric shapes, their measures, and their properties to describe objects (e.g. modeling a tree trunk or human torso as a cylinder)</p>	<ul style="list-style-type: none"> <li>•Identify right solids</li> <li>•Identify oblique solids</li> <li>•Draw isometric views of 3-d figures</li> <li>•Investigate cross-sections of 3-d figures</li> <li>•Draw one and two point perspective drawings of three-dimensional objects</li> <li>•Find lateral areas and surface areas of prisms</li> <li>•Find lateral areas and surface areas of cylinders</li> <li>•Find the lateral areas and surface areas of pyramids</li> <li>•Find the lateral areas and surface areas of cones</li> <li>•Find volumes of prisms</li> <li>•Find volumes of cylinders</li> <li>•Derive the relationship between certain dimension changes and the change in surface area and volumes of prisms and cylinders</li> <li>•Find the volumes of pyramids</li> <li>•Find the volumes of cones</li> <li>•Find the surface areas of spheres</li> <li>•Find the volumes of spheres</li> <li>•Derive the relationship between certain dimension changes and the surface area and volume of a sphere</li> <li>•Describe set of points on a sphere</li> <li>•Compare and contrast Euclidean and non-Euclidean geometries</li> <li>•Explore polar coordinates</li> <li>•Identify congruent solids</li> <li>•Identify similar solids</li> <li>•Use the properties of similar solids</li> </ul>	<p>Flatland readings</p> <p>Chapter 12 in Geometry textbook for homework assignments</p>	<p>Daily homework grades</p> <p>Classwork grades for Flatland readings</p> <p>4 quizzes</p> <p>2 tests</p>
<p>Unit 11: Transformations and Symmetry</p>	<p>Explore symmetry in regular polygons, and analyze the symmetry of objects using the language of transformations – SC Geometry Standard III.B.3</p>		<p>Sections 9-1 through 9-4, Chapter 9 of Geometry textbook</p>	



# Geometry Honors

Unit 12: Data Analysis and Probability Add-on unit before PASS (4 days, April 30 through May 3)		<ul style="list-style-type: none"> <li>•Represent sample spaces using a list, table or tree diagram</li> <li>•Use the Fundamental Counting Principle to count outcomes</li> <li>•Calculate the number of outcomes for a permutation</li> <li>•Calculate the number of outcomes for a combination</li> <li>•Calculate the geometric probability of a point in a region</li> <li>•Calculate the probability of independent and dependent events</li> <li>•Calculate the probability of mutually exclusive events</li> <li>•Create a histogram</li> </ul>	Chapter 13 of Geometry textbook; Course 3 and Pre-Algebra resources; Algebra I add-on unit	
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# Science

## Middle School

*Ms. Tracy Carney & Mr. John Burdick*

## Sixth Grade Science

Sixth grade science builds upon prior student knowledge and laboratory skills. Topics of study are related to biology, earth science and physical science. Data collection and analysis are essential components of investigations related to each major topic as students explore structure: function and cause: effect relationships. Student explorations extend beyond grade-level standards; possible examples include:

- creation of a Dichotomous Keys to identify fish
- classification of a large sample of chordates into Classes and Orders
- comparison of the anatomy of animals by dissecting specimens
- researching alternative forms of energy

- participation in a field trip to Furman University to better understand how to construct buildings using sustainable materials and methods of energy conservation

### Course objectives or essential questions with a syllabus by unit/topic:

#### A. Scientific Inquiry (laboratory skills are utilized in all units of study)

##### Standard 6-1

Students demonstrate an understanding of technological design and scientific inquiry, mathematical thinking, controlled investigative design and analysis, and problem solving. Students refine their understanding of experimental design by identifying independent and dependent variables within a controlled experiment, graphing data with accuracy, and

formulating in-depth conclusions with plausible and relevant extensions for their experiments.

#### Extensions beyond grade-level standards include:

- an emphasis on student-generated experimental design
- conducting research necessary to formulate a hypothesis
- in-depth written analysis and conclusion for each investigation
- submission of a proposal for a submission in the Greenville County Science Fair competition.

#### Sample Investigations:

Determining the dissolving rate of life savers by isolating and testing one variable, investigating the rate of spread of dyes that coat the surface of gumballs.

#### Examples of extensions beyond grade-level:

- investigation of surface tension by determining the number of drops of water that will fit on the head of a nickel and a dime
- examination of the effect of oceanic oil spills on wildlife and
- determination of an effective means of cleaning an oil spill

**Possible Evaluation/Assessments:**

Cartoon that depicts the steps of the “Scientific Method” of problem-solving, Unit Test.

Examples of extensions beyond grade-level:

- lab practical to demonstrate laboratory skill competency and accuracy of measurements
- written analysis of data with summative conclusion for each lab investigation

**B. Biology - Structures, Processes and Responses in Animals**

Standard 6-3

Students identify the characteristics that all living organisms share and refine their understanding of how scientists group organisms into increasingly similar categories of classification, including use of binomial nomenclature. As an extension to learning to identify an organism using a Dichotomous Key, students create a Dichotomous Key to identify fish. Students also classify a large sample of vertebrates from Kingdom to Order. Students then conduct an in-depth comparison of each phylum within Kingdom Animalia, with an emphasis on structure:function relationships. Specimen dissections enable students to evaluate increasing complexity of animal organization of organs and organ systems. Lastly, Students examine animal survival responses to both external and internal stimuli.

**Extensions beyond grade-level standards include:**

- use of binomial nomenclature
- classification of a large sample of vertebrates from Kingdom to Order
- creation of a Dichotomous Key to identify fish
- conduction of an in-depth comparison of each phylum within Kingdom Animalia, performing specimen dissections to better analyze structure:function relationships and to compare complexity of organ systems

**Sample Investigations:**

Use of dichotomous keys to identify organisms.

**Examples of extensions beyond grade-level:**

- classification of vertebrates
- Analysis of the relationship between bird beak structure and type of food eaten
- comparison of natural vs synthetic sponge absorbency
- dissections of squid, earthworm and crayfish

- long-term study of populations in and along Reedy River

**Possible Evaluation/Assessments:**

Identification of organisms using a Dichotomous Key, laboratory dissections, creation of an animal behaviors “survival guide” or children’s book, creation of Phylum Cnidaria pop-up greeting card, “Plant and Snail” GIZMO (interrelationship between plants and animals), creation of clam model, peer teaching for Classes within Phylum Arthropoda, lab analyses and conclusions, Unit Test.

**Examples of extensions beyond grade-level:**

- creation of Dichotomous Key
- laboratory dissections write-up
- ELA collaboration: Photostory project throughout year related to Reedy River study

**C. Earth Science – Earth’s Atmosphere and Weather**

Standard 6-4

Students study the characteristics of each layer of the earth’s atmosphere and how solar energy is transferred within the atmosphere. Student investigations include an examination how the earth’s surfaces are heated, particularly the differing rates of heating of soil and water, and how that heat is transferred to the air above them. Students build upon their knowledge of the water cycle and cloud identification (including condensation nuclei and cloud naming) by exploring how humidity and dew point are measured and how these factors, as well as wind direction and speed, are used to make weather predictions. An in-depth investigation of air pressure is undertaken utilizing a variety of demonstrations and laboratory activities. Global and local wind patterns and the Coriolis effect are examined and air masses and air fronts are identified. Students determine the causes and effects of thunderstorms, hurricanes and tornadoes. Finally, students note how technological advances such as Doppler radar, satellites and computer models are utilized in weather forecasting.

**Extensions beyond grade level include:**

- differentiation between atoms and molecules
- use of chemical symbols and formulas
- examination of the movement of particles on a molecular level as they gain or lose energy
- examination of the effect of gravitational attraction on molecules as altitude increases or decreases
- study of condensation nuclei and cloud naming
- determining dew point
- causes and effects of thunderstorms, hurricanes and tornadoes.

**Sample Investigations:**

Collection of weather data (temperature, relative humidity, wind direction, air pressure), lab to determine relationship between angle of sun’s rays and heating of earth’s surfaces, lab to demonstrate different heating rates of soil and water, lab to explore the effect of temperature on air pressure, use of actual data to track the path of Hurricane Andrew, interactive Cable In The Classroom “Windward” activity (make weather-related decisions to sail a boat around the world.)

**Example of extensions beyond grade:**

- An emphasis on the cause:effect relationship between weather factors at a molecular/ density level requires students to consistently utilize higher-order thinking skills

**Possible Evaluation/Assessments:**

Analysis/conclusion for each lab activity, groups of students act out the weather fronts, research followed by creation of a product (e.g., brochure, journal, or scrapbook) about a hurricane or tornado that occurred in the United States, Unit test.

**Example of extension beyond grade level:**

- Utilization of “Alice” program to create weather-related video games

**D. Physical Science - Conservation of Energy**

Standard 6-5

Students examine the seven forms of energy and how energy transfers from one form to another, including the concept of molecular movement as substances gain and lose energy. Students perform activities to determine factors that influence the amount of energy in a substance, e.g., rolling balls of different masses from off ramps of varying heights, and use mathematical formulas to calculate the amount of potential and kinetic energy. When studying light energy, students consider the electromagnetic spectrum and during their investigation of electricity, students explore atomic structure and the flow of electrons. Students also compare how coal and nuclear power plants generate electricity and build batteries to demonstrate energy transformations. Students move through a series of lab stations to better understand the relationship between electricity and magnetism and then determine which factors increase the strength of an electromagnet by identifying, isolating and testing one variable at a time. Students use mathematical formulas to calculate the amount of work done and to calculate mechanical advantage during their examination of simple machines (levers, pulleys,

inclined planes.). An examination of energy conservation includes student completion of an interactive website activity and participation in a field trip to Furman University. Finally, Students research alternative forms of energy and share their findings with the class; groups of students then use a decision-making matrix to select an optimum energy source for the future.

**Extensions beyond grade level include:**

- examination of the concept of molecular movement as substances gain and lose energy.
- use mathematical formulas to calculate the amount of potential and kinetic energy
- examination of the electromagnetic spectrum
- study of atomic structure and the flow of electrons
- use mathematical formulas to calculate the amount of work done and to calculate mechanical advantage
- participation in a field trip to Furman University to examine methods of construction of building using sustainable materials and methods of energy conservation
- use of a decision-making matrix to select the “best” form of energy to be used in the future

**Sample Investigations:**

Lab activities: build battery, electricity/magnetism stations, “Rolling Balls”, strength of electromagnets, GIZMO: “Energy Conservation”, interactive site: “My Sust House”.

**Examples of extensions beyond grade:**

- field trip to Furman University to tour building renovations using energy efficient materials and other means of energy conservation
- calculation of work done when angle of inclined plane is changed
- design of a pulley system which can to lift and move a fallen object
- design and build small solar-powered cars

**Possible Evaluation/Assessments:**

Analysis/conclusion for each lab activity, Unit test.

**Example of extensions beyond grade:**

- After reading Yoder’s Barn, students use higher-order thinking questions to discuss the advantages and disadvantages of Amish vs modern lifestyles and uses of energy

**B. Biology - Structures, Processes and Responses of Plants**

Standard 6-2

Students build upon their understanding of the characteristics of living things and apply that knowledge to plants, with particular emphasis on structure: function relationships, including cell layers in leaves. Students examine the processes of photosynthesis and cellular respiration, writing the chemical equation for both processes and how the two processes are related to each other. Students explore how plants reproduce and how plants are classified; e.g., nonvascular vs vascular, gymnosperm vs angiosperm and monocot vs dicot. Students germinate monocot and dicot seeds, making measurements and observations throughout the process and learning key terminology. Students also dissect a flower specimen.

**Extensions beyond grade level include:**

- study of the cell layers in leaves
- examination of the processes of photosynthesis and cellular respiration, writing the chemical equation for both processes and studying how the two processes are related to each other
- comparison of gymnosperms and angiosperms

**Sample Investigations:**

Seed germination lab, flower dissection lab.

**Possible Evaluation/Assessments:**

Analysis/conclusion for each lab, “Germination” GIZMO, Unit test.

**Extensions/Future Interdisciplinary Connections:**

- Collection of specimens in and along Reedy River for identification and on-going population studies (plants and aquatic and land invertebrates)
- Field trip to Weather Station at GSP airport and/or television station
- Math Collaboration: graphing, GPS coordinates,
- English Collaboration: Poetry (Simple Machines and Weather Units), Photostory in Animal and Plant Units, Yoder’s Barn in Weather Unit

# Seventh Grade Science

Seventh grade science expands upon and deepens prior student knowledge and laboratory skills. Topics of study are related to ecology, biology, chemistry, earth science and physical science.. Data collection and analysis are essential components of investigations related to each major topic as students explore structure: function and cause: effect relationships. Students perform many hands-on, inquiry based activities, with special emphasis placed upon problem identification and problem solving using the scientific method. Elements of high school courses in chemistry, biology are incorporated, and opportunities to utilize higher level thinking skills are built into each lesson. Students may express their understanding of concepts in a variety of ways; oral presentations, posters, models, children’s books, skits and panel discussions are a few examples.

Student explorations extend beyond the grade-level standards; for example, students determine the porosity and permeability of soil samples, then design and build slow sand filters. Students examine the relationship between density’s mass-to-volume ratio as they determine how to reform a ball of clay to make it float. Students also create a children’s book that explains an aspect of chemistry and then teach that topic to an elementary student. Cell staining and diffusion/osmosis in Elodea are examined as students hone enhanced microscopy skills

**Objectives: By the conclusion of this course, student should be able to:**

1. Demonstrate an understanding of technological design and scientific inquiry, including the process skills, mathematical thinking, controlled investigative design and analysis and problem solving.
2. Demonstrate an understanding of the structure and function of cells, cellular respiration and heredity.
3. Demonstrate an understanding of the functions and interconnections of the major human body systems, including the breakdown in structure or function that disease causes.
4. Demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environments.
5. Demonstrate an understanding of the classifications and properties of matter and the changes that matter undergoes.

## Instructional Units

### Unit 1: Scientific Inquiry

**Standard 7-1:** The student will demonstrate an understanding of technological design and scientific inquiry, including process skills, mathematical thinking, controlled investigative design and analysis, and problem solving

**Essential question:** How does a scientist use the elements of the “scientific method” to measure and evaluate data, reduce experimental error, and maximize laboratory safety?

This unit includes activities related to process skills, scientific method, variable identification, data presentation, testing hypotheses, use of lab equipment and lab safety. Students will pursue studies regarding general scientific principles and practice correct use of the scientific method to prepare for using it in the content related course work to come.

**Extensions beyond grade-level standards include:**

- Inquiry based design of experiment to isolate and test one variable

**Sample Investigation:** Diffusion of dyes on different colored gumballs

**Examples of extensions beyond grade-level:**

- research, design and construction of slow sand filter,
- analysis of Reedy River water samples (pH, turbidity, oxygen levels, bacterial count)
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**Assessment/Evaluation:**

The majority of the assessments in this unit will be performance based, i.e.: can a student look at a phenomenon and distill one variable to test from it? Lab reports will be analyzed in detail to determine if another student could replicate the experiment based on the original student’s work and draw the same conclusions based on the evidence. The summative assessment would include knowledge and performance components, as well as having the students perform peer reviews to identify flaws in experimental design and/or data interpretation.

**Possible Examples:** Diagnostic quizzes to identify lab tools and lab safety rules, and to identify independent and dependent variables in an experiment

**Examples of extensions beyond grade level:**

- Design and implementation of lab investigation of slow sand filters

- Written analysis of lab data with summative conclusion
- Lab practical to demonstrate laboratory skill competency and accuracy of measurements

Tentative time allotted: 4 weeks

### Unit 2: Chemistry

**Standard 7.5:** The student will demonstrate an understanding of the classifications and properties of matter and the changes that matter undergoes.

**Essential question:** How is the internal arrangement of subatomic particles reflected in an element’s physical and chemical properties?

Topics explored in this unit include organization of matter, composition of matter, properties of metals vs. non-metals, periodic table, chemical symbols and formulae, characteristics of acids vs. bases, chemical equations, atomic structure and atomic bonding. Chemistry at this level lends itself very well to acceleration and enhancement, such as atomic structure, ionic and covalent bonding, and density determination. Students perform various chemical reactions, then analyze the reasons for the reaction based on the known properties and atomic structure of each element involved.

**Extensions beyond grade-level standard include:**

- Atomic structure and bonding
- Density determination
- Balancing chemical equations
- Analysis of chemical reactions

**Sample Investigations:**

Build gumdrop models of molecules, chemical and physical properties of substances, chemical and physical changes of substances, acid/base lab using litmus and pH paper

Examples of extensions beyond grade-level:

- Density of solids, \*density of liquids
- Making clay float-understanding volume and density
- Metal in acid lab (single replacement reaction)
- Build models of atoms to demonstrate subatomic particles
- Balance chemical equations
- Flame test to identify elements present in compounds
- Analysis of chemical and physical properties of Reedy River water samples

**Assessment and evaluation:**

In addition to recalling and recognizing elements, their properties and their structures,

students will be able to predict the reactions of elements in combination, classify the reactions and identify the final product. This will require knowledge of atomic structure and electron configuration. Mastery will be demonstrated with a combination of knowledge and performance based assessments, as well as certain projects where students will need to apply their knowledge to achieve a desired product.

Possible examples: Conclusion/analysis for each lab activity, Research and create element trading cards or a “Wanted” poster, Periodic Table GIZMO, Unit Test.

**Examples of extensions beyond grade-level:**

- Diagnostic quizzes: element symbols, chemical and physical properties
- Write and illustrate a children’s book, teach the concept to elementary students

### Unit 3: Cells and Heredity

**Standard 7-2:** The student will demonstrate an understanding of the structure and function of cells, cellular reproduction, and heredity

**Essential question:** How is an organism’s underlying cellular organization reflected in its structure and function?

The elements of this unit include structure and function of the cell, identification of bacteria, cellular processes, and the mechanism of inheritance. Rigor is added by holding students responsible for many underlying concepts not included in the state standards, but which are essential for a proper understanding of cell biology at the gifted level. Examples would include the structure of DNA and chromosome replication, function of all cellular organelles; osmosis and diffusion of materials across cell membrane; steps that occur during cellular respiration, including active and passive transport; the Krebs Cycle and the electron transport chain; osmoregulation in unicellular organisms, and the stages of mitosis and meiosis. Students explore the topic of heredity in depth as they study the different forms of inheritance and analyze the inheritance of traits through several generations by studying pedigrees for normal and sex-linked traits. Using Mendelian genetics, students determine the probability of trait inheritance for several generations, including determining grandparent genotypes from the grandchildren’s phenotypes. Modern genetics technology (for example, genetically modified food, cloning and selective breeding) and the inherent ethical implications are also examined.

**Extensions beyond grade-level standard include:**

- Structure: function relationship of cellular organelles
- Microscopy: identification of unicellular protists in pond water, microscope drawings, cell staining techniques
- Mechanisms of active and passive transport
- Steps of cellular respiration: Krebs Cycle and electron transport chain
- Prediction of multigenerational genotype and phenotype

**Sample Investigations:** Punnett Square and Pedigrees for prediction of offspring traits, microscope examination of prepared slides and protist specimens, extract DNA from strawberries

Examples of extensions beyond grade-level:

- Steps of cellular respiration: Krebs Cycle and electron transport chain
- Active and passive transport
- Prediction of multigenerational genotype and phenotype
- Examination of osmosis of salt and fresh water in Elodea
- Create mitosis flip book
- Create and manipulate models of stages of mitosis
- Differentiated, independent student investigation: classification of protists and organelle structure function as it relates to homeostasis in organisms
- GIZMO: Paramecium homeostasis, Building DNA, Chicken Genetics

**Field Trip:** Clemson DNA lab

**Assessment and evaluation:**

Assessment in this unit is analysis based, in the sense that a student should be able to use acquired knowledge to determine what the outcome would be in various situations involving dysfunction of cell processes, and the genetic probabilities of various combinations of alleles by the use of Punnett squares and pedigrees. This would entail modeling genetic processes and knowing the structure and function of the cell and its activities. Evaluation would entail correct construction and application of models, knowledge and correct use of appropriate vocabulary, and the correct interpretation of different situations and prediction of outcomes.

**Possible Examples:** Group project: poster and explanation of an analogy between cell organelles and another “system” that is composed of interworking units; diagnostic quizzes: microscope anatomy, genetics vocabulary, Punnett square, pedigree; Unit Test

**Examples of extensions beyond grade-level:**

- Explanation of mechanisms behind DNA extraction from strawberries
- Poster project: Identification, illustration and explanation of an example of diffusion or osmosis
- Student portfolio of independent study components

Tentative time allotted: 8 weeks

**Unit 4: Human Body Systems and Disease**

Standard 7-3: The student will demonstrate an understanding of the functions and interconnections of the major human body systems, including the breakdown in structure or function that disease causes.

**Essential question:** How is homeostasis achieved through the interactions of the various body systems?

The primary goal of this unit is to increase student understanding of the different human body systems and how breakdowns in these systems lead to disease. Students explore the underlying structure and functions of each system and determine why the system must function as it does. Students will analyze possible outcomes of a malfunction of each system and justify their responses using their acquired knowledge of each system. Students will model various systems and run simulations of different disease scenarios to determine the best way to prevent and control both infectious and non-infectious diseases.

**Extensions beyond grade-level standard include:**

- Analysis of nutrients present in foods
- Simulate spread of disease
- Suggest cause and effect of breakdown of human body systems
- Classify and identify bacteria
- Explain the interdependency of each organ system with an organism

**Sample investigations:** Lab activities: Comparing vertebrate skeletons, What Causes Sports Injuries? Which Brain Side is Dominant?, Muscle Action: Construct models: urinary system, alveoli; GIZMOs: Homeostasis, Circulatory System, Infectious and Noninfectious Disease; Walk through CV system outline, use to explain pathway blood circulation to peer

**Examples of extensions beyond grade-level:**

- Maintain and analyze personal food log
- Analyze nutrient composition in foods
- Explain ramification of malfunction of each body system
- Rat or shark dissection
- Simulation of spread of infectious disease
- Design and build slow sand filter to remove bacteria from drinking water

Guest Speaker: MaryAnne Rapp, school nurse (cardiovascular disease, blood pressure).

**Assessment and evaluation:**

In comparison to other units, much of the assessment in this unit is analysis based. Students will be presented with different situations (i.e.: what are the prime agonist muscles in a softball pitch, what specific actions are totaled to produce the pitch, how did a certain disease seem to originate and spread and what could be done to control it) and asked to solve them using correct terminology. Students will make information they learn about each system relevant to their own lives as much as possible; for example, students will analyze the food they consume and determine how their bodies use the nutrients. Students will perform dissections and answer questions based on the activity.

**Possible Examples:** conclusion/analysis for each lab activity, group project (written and oral explanation of the digestion of a student-generated healthy menu, including both mechanical and chemical digestion of each type of food by each organ of digestion), research and creation of a brochure of a respiratory disease, Unit Test.

**Examples of extensions beyond grade-level:**

- food log analysis
- explanation of mechanisms by which each system functions
- explanation of cause:effect of diseases that impair the human body’s ability to function
- explanation of interactions of the human body systems
- rat or shark dissection

Time allotted: 9 weeks

**Unit 5: Ecology**

Standard 7-4: The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environment.

**Essential question:** What factors affect the interactions between the biotic and abiotic components of an ecosystem?

This unit includes a study of levels of organization, energy flow through the environment, carrying capacity and limiting factors, soil, the role of water in an ecosystem, and renewable vs. non-renewable resources. Rigor is added to the required unit components by exploring more thoroughly the specific interrelationships between organisms, analysis of the different biomes on Earth, geochemical cycles, energy lost in the different trophic levels and how humans affect the environment. Students participate in simulations to model various sub-units of an ecosystem and then analyze the results, after certain variables are changed within the simulation, students analyze and graph the new results and compare them against the first. Students examine watersheds and drainage basins within South Carolina and determine porosity and permeability of a variety of soil types in and around the school campus and Reedy River.

**Extensions beyond grade-level standard include:**

- Calculation of energy transferred to each trophic level
- Explanation of effect of limiting factors on populations within an ecosystem
- Determination of effect of human activities on organisms in the environment
- Examination of geochemical cycles (carbon, nitrogen)

**Possible Investigations:** “Oh, Deer” limiting factors, porosity and permeability of soils, “Rabbit Population” Gizmo, food web analysis, identifying biomes.

**Examples of extensions beyond grade-level:**

- Collection of on-site soil samples to determine porosity and permeability
- Analysis and graphing of limiting factors on a population
- Study of effect of DDT and other chemicals food chain

**Assessment and evaluation:** Most of the assessment in this unit is formative, in the sense that students must run the simulations, then explain the results and extrapolate to the real world as the unit progresses. Students are also expected to research different aspects of the sub-units and present the results of their research to the class. The summative assessment would be a paper and pencil test which includes reflection on the simulations and lab analyses students have conducted.

Possible examples: Biome project (location, organisms, climate), lab conclusions, Unit test.

**Extensions beyond grade-level standard include**

- Analysis, graphing and prediction of effect of limiting factors on populations
- Analysis of human interactions on ecological systems

Time allotted: 4 weeks

6. Review and final exam  
2 weeks

- \*design and construction of roller coaster.

## Eighth Grade Science

Eighth grade science is an integral part of the South Carolina integrated science curriculum. Research skills are emphasized and utilized in various research projects throughout the year, including possible participation in the Science Fair. Eighth grade science is a combination of physical science, astronomy, geology, and life science. The physical science unit emphasizes elementary physics, and the Astronomy concentrates on the solar system. The Geology unit focuses on structure and functions of the Earth, and the life science is mainly involved with adaptations of living things to changes in their environments.

**Learning and Developmental Goals**

By the end of the eighth grade, the students should be able to:

1. Understand the processes of life and how interactions of organisms with environment usually result in adaptations and change over time.
2. Understand the processes and interactions of earth and space systems and how they relate to the dynamics of our atmosphere, lithosphere, hydrosphere, and solar system.
3. Understand the nature and interactions of forces and matter which determine the motions of bodies and how these interactions influence daily life and our perception of the world and its place in the solar system.
4. Understand the history of life on Earth, the applications of science and technology, and how human activity

impacts our world and the things living in it.

5. Understand and use process skills such as observation, classification, measurement, inferring, and presenting data.
6. Design, conduct, and evaluate investigations using scientific equipment and terminology and demonstrating scientific reasoning and logic.

**Instructional Units: bulleted points under unit descriptions- CTC extensions**

**A. Unit: Scientific Inquiry:**

**Essential question:** How does a scientist use the elements of the scientific method to best use data, reduce chances of error, and maximize safety?

This unit refreshes skills learned in earlier years. They would include scientific process skills, principles of science, the scientific method, lab skills and scientific method. Rather than two uninterrupted weeks, these days are integrated into other units. There is a one day refresher at the beginning of the year

SC standards: 8-1.1 thru 8-1.6

Time allotted: 2 weeks

**Assessment and evaluation:**

There are no assessments devoted to only this unit in 8<sup>th</sup> grade. Each activity related to the other units will be evaluated as part of that unit, with attention being paid to correct use of the lab skills learned earlier.

**B. Unit: Motion and Forces:**

**Essential question:** How do balanced and unbalanced forces affect the motion of an object, and how may that motion be recorded?

This unit begins with an analysis of forces, including definitions of speed, velocity, acceleration, and momentum, with a special emphasis placed on position and displacement vs time. This section of the unit is extended by including activities related to acceleration and velocity. The unit continues with the analysis of the effects of forces on motion. Students are asked to use  $F=MA$  and its derivatives to calculate force, mass and acceleration in a variety of situations. Students learn that arrows that represent the magnitude and direction of a force are called vectors, and learn that vectors can be added quantitatively to produce a resultant force. The unit finishes with a study of kinematics.

- Study of acceleration and velocity
- Newton's three laws of motion
- Calculations of force, mass and acceleration
- Non-linear vector addition
- kinematics

SC standards: 8-5.1 thru 8-5.6

Time allotted: 8 weeks

**Assessment and evaluation:**

Student progress and mastery will be assessed in a variety of ways in this unit. Students will be presented with situations where they must determine the forces acting upon actual moving objects and figure their displacement, velocity and acceleration based upon their own observations and measurements. Students will also be presented with hypothetical situations and then need to determine mathematically the forces involved and the resultant motion, based on a number of given parameters. As in every unit, students must demonstrate a working knowledge of content vocabulary and concepts.

**C. Unit: Waves:**

**Essential question:** How is energy transferred through waves?

This unit begins with definitions of various terms necessary for the understanding of wave function such as frequency, wavelength, amplitude, refraction, reflection, transmission and absorption. Extension comes in first with and understanding of both the electric and the magnetic components of an electromagnetic wave and how various properties common to mechanical and electromagnetic waves are manifested differently in each. Extension follows with the use of concave and convex lenses and mirrors in lab activities concerning the transmission of light. The anatomy and function of both the ear and the eye in processing electromagnetic waves and mechanical waves and their relationship to the brain is explored. Different vision and auditory problems are discussed. The results of the mixing of both light and pigment are studied. The complete electromagnetic spectrum is learned and used as a transition into the study of astronomy.

- Electric and magnetic components of electromagnetic waves
- Concave and convex mirrors and lenses
- Anatomy and function of the eye and ear
- Vision and auditory problems
- Light and pigment mixing
- Electromagnetic spectrum

SC standards: 8-6.1 thru 8-6.8

Time allotted: three weeks

**Assessment and evaluation:**

Most of the assessment in this small unit is formative with discussion and analysis of lab reports, along with the one sheep eye dissection that is done in the eye anatomy part of the unit. The summary assessment is a paper and pencil test with no performance section, as is the case in the larger, more comprehensive units.

**D. Unit: Space Systems:**

**Essential question:** What is the relationship between the different space systems, from the Earth-Moon-Sun system through the overall structure of the Universe?

This astronomy unit is one of the major units in 8<sup>th</sup> grade science, and is the last required astronomy that a student will have, so we try to make it as comprehensive as possible within the limitations of middle school.

Overarching concepts and a historical perspective are emphasized over memorization of temperatures, numbers of moons, distances from the Sun and other numerical information about all the planets. This unit starts with a study of the influences of the Sun and the Moon on the Earth, along with Earth's motion, then moves to a study of the Moon and the Sun themselves. From here, the creation and structure of the Solar System is studied, along with the cultural and historical influences inherent in that study. Information learned during the forces and motion unit is used again at this time to study the effects of gravity on the behavior of the planets, moons and other bodies in the Solar System including tides on the Earth. At this point in the unit, focus switches to the structure of galaxies and their place in the Universe, along with a study of star structure and the fate of stars based on their sizes. The unit concludes with an analysis of space technology, including telescopes, satellites, probes and manned missions, as well as future trends in space exploration. The structure and function of each device is explored and compared using prior knowledge acquired during the forces and motion and waves units.

- Study of the Moon
- Cultural and historical contexts of astronomy
- Study of galaxies as part of the structure of the Universe
- Star structure and life cycle

SC standards: 8-4.1 thru 8-4.10

Time allotted: nine weeks

**Assessment and evaluation:**

Because of the length and comprehensiveness of this unit, there is a mix of formative and summative assessments throughout, each with a mix of performance and knowledge based questions. The Sun-Moon-Earth system is summatively tested, as is the Solar System, and also galaxy and star structure, and, finally, space technology and exploration. Formative assessments would include performing an activity, then trying to explain the observation the student would make based on it, including what would happen if any of the variables were changed, then extrapolating this information to the Solar System itself.

**E. Unit: Geology/Earth Systems:**

**Essential question:** How do the processes of the Earth serve to alter its form and function?

This is another of the major units in science which the students will not repeat as a required course in high school or college. Students are required in this course to understand at a deeper level the workings of the systems that drive the changing of the Earth. For example, at CTC in 8<sup>th</sup> grade, students must know the mechanism of the heat transfer that drives plate tectonics, and the changes in landforms caused by plate tectonics. Earthquakes and volcanoes are caused by convection in the Earth's mantle, and students are expected to know how to rate them using common scales such as the MMS, Mercalli Scale and the VEI. The state science standards require student to know the basic rocks types created by the various Earth processes, but CTC extensions require students to know specific rock types and the minerals that compose them, as well as the geological explanation as to why these particular mineral came together to make these specific rocks. Students will study minerals, ores and fossil fuels as resources. Students will explore different types of volcanoes and also the structures created by magma that doesn't reach the surface. 8<sup>th</sup> grade geology ends with a study of South Carolina landforms, emphasizing knowledge gained from remote sensing and the use of topographic maps.

- Mechanism of heat transfer as the mechanism for plate tectonics
- Study of geologic measuring scales ( MMs, Mercalli, VEI)
- Rock types and mineral composition



- Mechanism of mineral and rock formation
- Volcano types- intrusive and extrusive igneous structures
- Remote sensing

SC standards: 8-3.1 thru 8-3.9

Time allotted: 9 weeks

**Assessment and evaluation:**

As in the astronomy unit, geology is too comprehensive to summatively assess only once, so major assessments follow plate tectonics, igneous phenomena, the rock cycle (includes erosion, weathering, sedimentary and metamorphic rocks), and South Carolina landforms. These assessments are a combination of performance, for example where students conduct a series of tests to identify certain rocks and minerals, and also knowledge and vocabulary recall.

**F. Unit: Classification, Diversity and Adaptations of Organisms:**

**Essential question:** How do organisms' adaptations to changing environments over time lead to creation of new species?

This final unit of the 8<sup>th</sup> grade year springboards off the sedimentary rock section of the geology unit with its study of fossils and the conditions that create them. Fossil study leads to an exploration of geologic age and the ways that age is determined, including complex geologic layering, index fossils and radiometric dating. Evidence of biologic and geologic change over the eons is extracted from an analysis of fossils, including the evidence of catastrophes as a driver of biologic change. The geologic and biologic changes that demarcate the different geologic eras are examined, as well as the climatic and geologic characteristics of each of the eras. Students will learn the periods of the Mesozoic and the periods and epochs of the Cenozoic era. The geologic history of the region that would become known as South Carolina is studied.

- Complex geologic layering
- Radiometric dating
- Geologic periods and epochs
- South Carolina geologic history

SC standards: 8-2.1 thru 8-2.7

Time allotted: 4 weeks

**Assessment and evaluation:**

Assessment of this unit relies heavily on students' ability to evaluate and interpret fossil and geologic information to draw conclusions about the relative ages of various life forms and the conditions that led to their speciation.

Students must also be able to determine the absolute age of a specimen given the half-life of a particular element and the ratio of parent and daughter elements in the specimen. Given a set of organism adaptations, students should be able to determine the conditions that lead to the adaptations, and why the adaptations led to the success of the organism. The reverse is true, also. Given a change in conditions, students should be able to predict which adaptations would give an organism the best chances of survival and reproduction. Assessment will consist of the usual recall of specialized vocabulary and historical events, as well as having the students justify their predictions and analyses based on geologic evidence.

G: Final exam review

Allotted time: 1 week

# Social Studies

*Middle School*

*Ms. Bohnenberger & Ms. Satterfield*



## Sixth Grade Social Studies

### Early Cultures to 1600

Social studies in grade six develops and enhances the student's understanding of history through the study of people and events from earliest man to the era of European exploration. This course focuses on the significance of geography, economics, and government in the development of the human story, including the conflicts and accomplishments of the people and their roles in developing the social, economic, and political structures of the major civilizations. The following literacy Skills for the Twenty-First Century will be addressed:

- Interpret parallel time lines from different places and cultures.
- Evaluate multiple points of view or biases and attribute the perspectives to the influences of individual experiences, societal values, and cultural traditions.
- Compare the locations of places, the conditions at places, and the connections between places.
- Explain why trade occurs and how historical patterns of trade have contributed to global interdependence.
- Understand responsible citizenship in relation to the state, national, and international communities.
- Identify and explain the relationships among multiple causes and multiple effects.
- Analyze evidence, arguments, claims and beliefs.
- Select or design appropriate forms of social studies resources to organize and evaluate social studies information.

#### **Student explorations extend beyond grade-level standards; possible examples include:**

- Primary source and secondary source analysis such as: texts, calendars, timelines, maps, mental maps, charts, tables, graphs, flow charts, diagrams, photographs, illustrations, paintings, cartoons, architectural drawings, documents, letters, censuses, artifacts, models, geographic models, aerial photographs, satellite-produced images, and geographic information systems.

- Using source analysis to writing historical analytical essays
- Presenting historical analysis research through creative presentations
- Various field trips to historical sites either virtually or actual locations
- Creative writing utilizing historical research

I. Course objectives or essential questions with a syllabus by unit/topic:

**A.** Standard 6-1: The student will demonstrate an understanding of the development of the cradles of civilization as people moved from a nomadic existence to a settled life. The first humans were nomads who continually traveled in search of food. As these hunter-gatherers developed better ways of doing things, they began to develop into the world's earliest civilizations. Civilized societies have established written languages, permanent structures, forms of government, dependence on agriculture, and specializations of labor. These societies have also developed customs such as formal religions and traditions in family structure, food, and clothing that have endured.

**Student explorations extend beyond grade-level standards; possible examples include:**

- Simulations of early human experiences
- An emphasis on student historical analysis
- Evaluation of Academic conversations and summaries

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Group research study and presentation of Early Indus River Civilizations
- In depth research of Huang He River Valley Dynasties and table top museum
- Journal response to historical fiction, the Examination

**B.** Standard 6-2: The student will demonstrate an understanding of life in ancient civilizations and their contributions to the modern world. The foundations of government, science, technology, and the arts are legacies of ancient civilizations. To understand that the

contributions of these ancient civilizations have endured and are evident in our society today.

Possible evaluations and assessments:

- Paper and pencil test on key terms, people, and events
- Independent research on Greek person or event. Present research in a multimedia format.
- Dramatic interpretation of Roman Empire daily life, impact on learning, architecture, and government structure.

**C.** Standard 6-3: The student will demonstrate an understanding of changing political, social, and economic cultures in Asia. Asian cultures were developing in ways both similar to and different from those in other parts of the world. The cultures of China, India, Japan, and the Middle East influenced each other's growth and development as well as that of the rest of the world. To understand the contributions of Asian societies that have endured and are evident in our society today.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Independent research of Japan and present research in a brochure
- Primary/Secondary source analysis

**D.** Standard 6-4: The student will demonstrate an understanding of the changing political, social, and economic cultures in Africa and the Americas. African and American cultures were developing independently in ways similar to and different from those in other parts of the world. These cultures also influenced the development of the rest of the world. To understand that the contributions of African and American cultures have endured and are evident in our society today.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Group research of Africa and Americas. Research to be presented in a two stages; artistic interpretation/ visual art and informational booth at a World's Fair
- Summary analysis of gold and salt trades and their effects on other civilizations

**E.** Standard 6-5: The student will demonstrate an understanding of the Middle Ages and the emergence of nation-states in Europe. Political systems are made up of the people, practices, and institutions that use power to make and enforce decisions. Feudalism during the Middle Ages in Europe was a political and economic system in which control of land was the main source of power. To understand feudalism and its relationship to the development of the European nation-states.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Compare/Contrast the similarities/ differences in European and Japanese Feudalism
- Primary/Secondary source analysis
- Group research of European Middle Ages. Research to be presented in a two stages; artistic interpretation/ visual art and informational booth at a World's Fair

**F.** Standard 6-6: The student will demonstrate an understanding of the impact of the Renaissance, the Reformation, and the Age of Exploration on Europe and the rest of the world. The Renaissance, the Reformation, and the Age of Exploration were times of great discovery and learning that affected the way individuals viewed themselves and the world around them.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Independent research project and multimedia presentation of research
- Summary analysis of Reformation/ Counter Reformation on the Christian religion
- Primary/Secondary source analysis

# Seventh Grade Social Studies

## 1600 to Present

Social studies in the seventh grade is a course in contemporary cultures that continues from the examination of early cultures in grade six. In grade seven, students examine the history and

geography of human societies from 1600 to the present. They learn about the growing interaction among these societies as well as the exchange of ideas, beliefs, technologies, and commodities among them. Students also address the continuing growth of the political and economic ideas that shaped the modern world. They study the concepts of reason and authority, the natural rights of human beings, the divine right of kings, experimentalism in science, the development of limited government, and the roots of modern-day tensions and issues. The following literacy Skills for the Twenty-First Century will also be addressed:

- Interpret parallel time lines from different places and cultures.
- Evaluate multiple points of view or biases and attribute the perspectives to the influences of individual experiences, societal values, and cultural traditions.
- Compare the locations of places, the conditions at places, and the connections between places.
- Explain why trade occurs and how historical patterns of trade have contributed to global interdependence.
- Understand responsible citizenship in relation to the state, national, and international communities.
- Identify and explain the relationships among multiple causes and multiple effects.
- Analyze evidence, arguments, claims and beliefs.
- Select or design appropriate forms of social studies resources to organize and evaluate social studies information.

**Student explorations extend beyond grade-level standards; possible examples include:**

- Primary source and secondary source analysis such as: texts, calendars, timelines, maps, mental maps, charts, tables, graphs, flow charts, diagrams, photographs, illustrations, paintings, cartoons, architectural drawings, documents, letters, censuses, artifacts, models, geographic models, aerial photographs, satellite-produced images, and geographic information systems.
- Using source analysis to write historical analytical essays
- Presenting historical analysis research through creative presentations

- Various field trips to historical sites either virtually or actual locations
- Guest Speakers
- Creative writing utilizing historical research
- Independent research on a topic of choice through the National History Day program
- Journal Responses to Historical Fiction

**Course objectives or essential questions with a syllabus by unit/topic:**

**A.** Standard 7-1: The student will demonstrate an understanding of the growth and impact of global trade on world civilizations after 1600 and that European expansion during the 1600s and 1700s was often driven by economic and technological forces.

Student explorations extend beyond grade-level standards; possible examples include:

- Conducting research
- An emphasis on student historical analysis and discussion
- Conducting research necessary to formulate a thesis
- Support of thesis
- Presenting research with support in informative and creative ways

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Evaluation of ethical practices in the era of colonization through a United Nations simulation

**B.** Standard 7-2: The student will demonstrate an understanding of the concepts of limited government and unlimited government as they functioned in Europe in the seventeenth and eighteenth centuries and that the relationship between citizens and their government is a fundamental component of political rule, role of constitutions, the characteristics of shared powers, the protection of individual rights, and the promotion of the common good by government.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Poem for two voices – different perspectives – monarch vs commoner
- Song lyrics on the Enlightenment

**C.** Standard 7-3: The student will demonstrate an understanding of independence movements that occurred throughout the world from 1770 through 1900, the global spread of democratic ideas and nationalist movements that occurred during the nineteenth century, and the effects of nationalism, industrialism, and imperialism.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Script of play on the French Revolution – two perspectives – 3 scenes (before, during, after)

**D.** Standard 7-4: The student will demonstrate an understanding of the causes and effects of world conflicts in the first half of the twentieth century and that the influence of both world wars and the worldwide Great Depression are still evident.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Documentary on WWII

**E.** Standard 7-5: The student will demonstrate an understanding of international developments during the Cold War era and how the events during the

Cold War affected the world politically, socially, and economically.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Operation Spy simulation

- F.** Standard 7-6: The student will demonstrate an understanding of the significant political, economic, geographic, scientific, technological, and cultural changes as well as the advancements that have taken place throughout the world from the fall of the Berlin Wall in 1989 to the present day.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Creation of a Historical fiction movie poster and movie trailer based on a significant event of the latter half of the 20<sup>th</sup> Century.

## Eight Grade Social Studies South Carolina: One of the United States

The focus for social studies in grade eight is the history of South Carolina and the role that the state and its people have played in the development of the United States as a nation. Students learn about the state's development during colonial times; the growth of the American ideal, which led to the break with England; and the rising controversy about slavery, which led to the Civil War. The continued study of South Carolina from Reconstruction to the present, including the

struggle for social and economic justice waged by the people of South Carolina, further allows students to see the progress that the state has made and also to visualize the future challenges yet to be met and overcome. The following literacy Skills for the Twenty-First Century will be addressed:

- Interpret parallel time lines from different places and cultures.
- Evaluate multiple points of view or biases and attribute the perspectives to the influences of individual experiences, societal values, and cultural traditions.
- Compare the locations of places, the conditions at places, and the connections between places.
- Explain why trade occurs and how historical patterns of trade have contributed to global interdependence.
- Understand responsible citizenship in relation to the state, national, and international communities.
- Identify and explain the relationships among multiple causes and multiple effects.
- Analyze evidence, arguments, claims and beliefs.
- Select or design appropriate forms of social studies resources to organize and evaluate social studies information.

**Student explorations extend beyond grade-level standards; possible examples include:**

- Primary source and secondary source analysis such as: texts, calendars, timelines, maps, mental maps, charts, tables, graphs, flow charts, diagrams, photographs, illustrations, paintings, cartoons, architectural drawings, documents, letters, censuses, artifacts, models, geographic models, aerial photographs, satellite-produced images, and geographic information systems.
- Using source analysis to writing historical analytical essays
- Presenting historical analysis research through creative presentations
- Various field trips to historical sites either virtually or actual locations
- Guest Speakers
- Creative writing utilizing historical research
- Journal Responses to Historical Fiction

**Course objectives or essential questions with a syllabus by unit/topic:**

- A.** Standard 8-1: The student will demonstrate an understanding of the settlement of South Carolina and the United States by Native Americans, Europeans, and Africans. Students refine their understanding of this by looking at primary and secondary sources to better understand the human mosaic of the South Carolina colony was composed of indigenous, immigrant, and enslaved populations. Student explorations extend beyond grade-level standards; possible examples include:
- Conducting research
  - An emphasis on student historical analysis
  - Conducting research necessary to formulate a hypothesis
  - Developing empathy for historical time periods by creating a historical fiction journal based on the analysis of the 100 milestone documents of the United States. Journal will be a yearlong project to include all historical eras studied in the 8<sup>th</sup> grade.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Group research study and presentation of Native Americans and the effects of the colonization of the United States on Native Americans
- Evaluation of journal

- B.** Standard 8-2: The student will demonstrate an understanding of the causes of the American Revolution and the beginnings of the new nation, with an emphasis on South Carolina's role in the development of that nation. Students refine their understanding of the events surrounding the American Revolution and how it transformed British colonists into American citizens and South Carolina's pivotal role in this process.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events

- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Evaluation of journal
- Compare and contrast the different perspectives of the colonists from the three colonial regions in regards to their views on independence from Great Britain.

**C.** Standard 8-3: The student will demonstrate an understanding of South Carolina’s role in the development of the new national government and how independence from Great Britain influenced individual state’s governmental development.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Individual research study and presentation of political campaigns of 1800 and its effects
- Evaluation of journal

**D.** Standard 8-4: The student will demonstrate an understanding of the multiple events that led to the Civil War and how South Carolina came to be at the center of this conflict.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Group research and analysis of the leading causes of the Civil War and creation of song based on causes
- Presentation of Civil War Causes Song
- Evaluation of journal

**E.** Standard 8-5: The student will understand the impact of Reconstruction, industrialization, and Progressivism on society and politics in South Carolina and ways it revitalized its economy while maintaining its traditional society in the late nineteenth and early twentieth centuries.

**Possible evaluations and assessments:**

- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Evaluation of academic conversations and summaries.
- Persuasive essay on whether or not African Americans had a choice to stay in the South and become sharecroppers. Students will utilize primary/secondary sources to support their thesis.
- Evaluation of journal

**F.** Standard 8-6 & 7: The student will demonstrate an understanding of South Carolina’s response to national crises during the twentieth century and how the response brought it back into full participation in the national experience.

**Possible evaluations and assessments:**

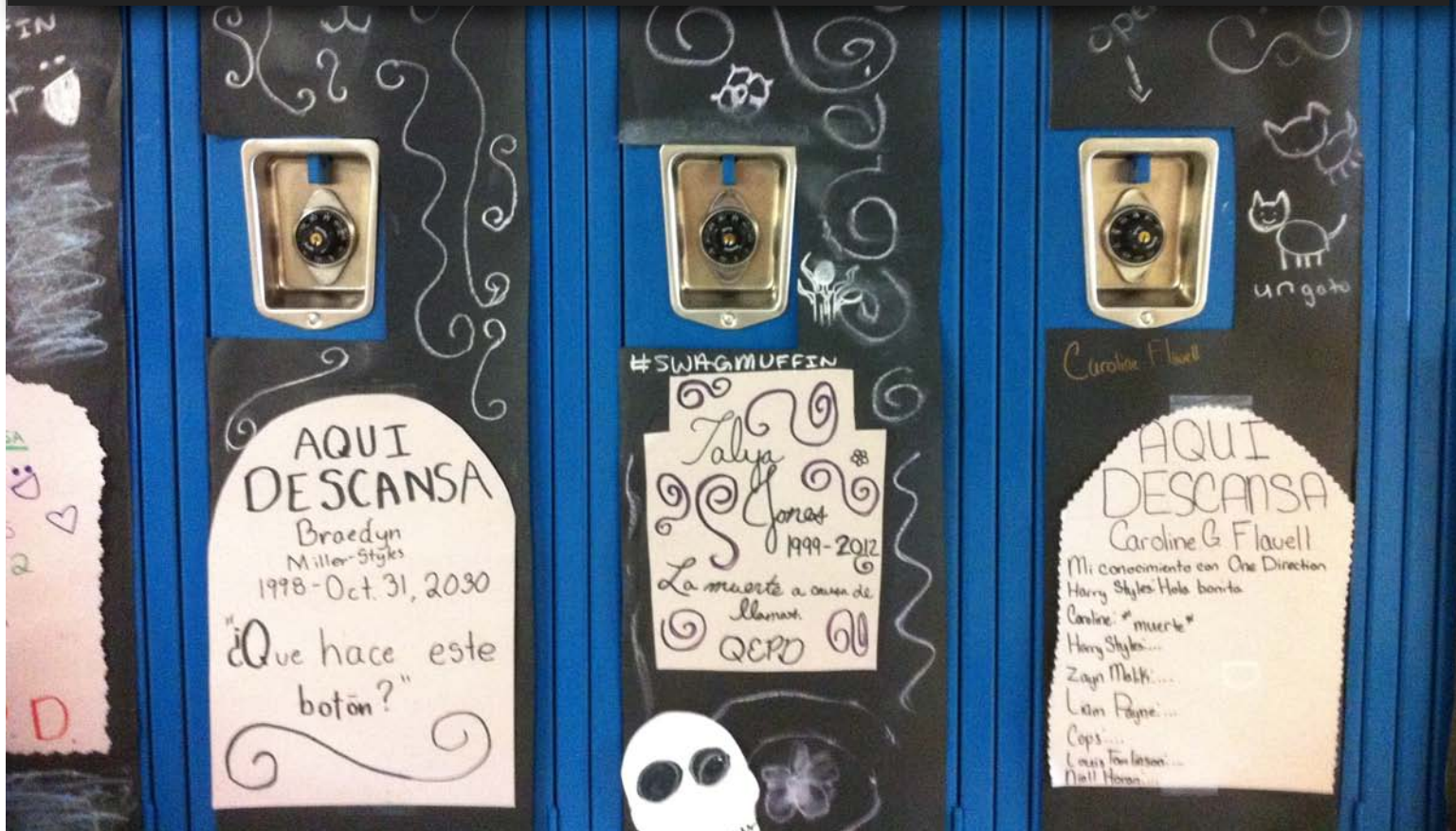
- Paper and pencil test on key terms, people, and events
- Primary and Secondary Source Analysis
- Documentary or Display of Civil Rights Movement
- Evaluation of academic conversations and summaries.
- Evaluation of journal
- Research and creation of a character/ leadership portrait of a famous South Carolinian of the Twentieth Century

**B.**

# Spanish

## Middle School

Ms. Heather Cortes & Ms. Jessica Goll



## Spanish I

### What is Spanish I?

Spanish I centers on meaningful communication and language as it is used in real-world situations. At this level, students will begin to develop cultural awareness and will also develop insights into their own language through comparisons with Spanish.

It is vital that our students understand that the world around them is to be understood and interacted with. To that end, the Spanish I curriculum fosters not only a beginner's knowledge of the Spanish language itself, but also introduces students to the many countries and cultures which speak it. In this way students gain an understanding

and appreciation of others around them while also learning to interact with them.

Most people in the world are multilingual, and everybody could be; no one is rigorously excluded from another's language community except through lack of time and effort. Different languages protect and nourish the growth of different cultures, where different pathways of human knowledge can be discovered. They certainly make life richer for those who know more than one of them. - Nicholas Ostler, *Empires of the Word*

### Our focus:

Spanish 1 focuses on answering the questions, "Who am I?" and "Who are Spanish-speakers?" Students will begin the year by focusing on themselves and

as each unit advances they will progressively move their focus outward, from themselves, to family, to friends, and to their surroundings. During each unit, students will be comparing what they learn in these areas to the lives of Spanish-speakers.

### Unit Organization:

Using the Greenville County School District Units of Study as a foundation, the CTC Spanish Department has created units of study which revolve around and depend upon questions and answers found in everyday situations and conversations. In every unit, students learn to form questions and to respond to them using related vocabulary and grammar. This allows students to use the language in a practical way from the most basic forms to the increasingly

complex. These questions, and their answers, are transferrable to many topics and other units and are spiraled into Spanish II as well.

**Ongoing Project/Cultural Extension:**

At the end of Unit 1, each student will choose a Spanish-speaking country/region about which to become an expert. During each unit, students will be given information to discover and present about the people of their country. Each student will also be assigned a webpage which they will use as the platform for compiling this information.

**Additional Cultural Extensions:**

- Unit-specific cultural comparisons
- Year-long country studies
- Mini-units on Día de los Muertos, Christmas, and Cinco de Mayo
- Community speakers
- Opportunities to attend community events

**Spanish I Syllabus**

**Unit 1: Surviving in the Spanish Language Classroom**

**Objectives:**

Students will

- know how to react in the target language in limited situations.
- ask and answer simple questions and ask for clarification when needed.
- introduce themselves to a classmate and introduce a classmate to others.
- respond to and initiate greetings and farewells.

**Content (Vocabulary and Grammar):**

- “Help Me!” phrases
- Alphabet, Pronunciation, Date, Weather - ongoing throughout the year
- Greetings, Introductions, Feelings
- School Supplies, Classroom locations
- Object name using definite and indefinite articles, possessive pronouns
- Asking to use an object

- Asking where an object is
- Stating whether or not you have an object

**Standards Addressed:**

The student will

- B 1.1-1 indicate in the target language that he or she does not understand or cannot communicate a message adequately.
- B 1.1-2 express basic courtesies in the target language and use appropriate behaviors.
- B 1.1-3 use the target language to give simple directions; understand simple directions given in the target language.
- B 1.1-7 use the target language to ask and answer simple questions.
- B 1.2-1 respond appropriately to simple directions and commands given in the target language.
- B 1.2-2 identify aural, visual, and context clues in authentic target-language materials, in both oral and written forms.
- B 1.3-2 use visuals as support in communicating a message in the target language.
- B 2.1-1 imitate language and behaviors that are appropriate to interactions in the target culture.
- B 2.1-2 use the target language to identify behaviors and traits that are characteristic of everyday life in the target culture.
- B 2.2-2 use the target language to identify and participate in artistic expressions of the target culture (e.g., songs, literature, dance, artworks).
- B 4.1-1 compare cognates and word borrowings between the target language and English.
- B 4.1-2 identify differences and similarities in register between the target language and English.
- B 4.2-2 use the target language to identify behavioral patterns and perspectives in the target culture that are similar to and different from those in his or her native culture.
- B 4.2-3 use the target language to identify practices within the target culture that are similar to and different from those in his or her native culture.

**Unit 2: Who Am I?**

**Objectives:**

Students will

- describe themselves and others.
- ask for information about others.
- compare physical and personality traits of themselves and others.
- express likes and dislikes about activities.

**Content (Vocabulary and Grammar):**

- Personalities using adverbs, adjective placement and agreement, describing actions common to each
- Types of people actions common to each
- Physical Appearance colors, adjective placement and agreement
- Clothing using the verbs “gustar,” “molestar” and “encantar”, colors, adjective placement and agreement

**Standards Addressed:**

The student will

- B 1.1-4 exchange personal information.
- B 1.1-7 ask and answer simple questions.
- B 1.2-2 identify aural, visual and context clues in authentic spoken and written materials.
- B 1.2-4 understand information on familiar topics in sentence-level oral and written presentations.
- B 1.3-2 use visuals as support in communicating a message.
- B 1.3-5 list and compare information from simple sources.
- B 2.1-1 imitate language and behaviors that are appropriate to the target culture(s) during communication.
- B 4.1-2 identify word borrowings and cognates from other languages.
- B 4.1-4 identify the mechanics of the target language and use them within limited contexts in written work.
- B 4.2-3 identify practices from the target culture(s) and the student’s native culture.

**Unit 3: My Family Life**

**Objectives:**

Students will

- describe the make-up of their family unit.
- ask about others’ family members.
- describe the layout of their home.
- ask about others’ homes.
- discuss favorite foods and why.
- ask about others’ food preferences.

**Content (Vocabulary and Grammar):**

- Family using “hay”
- Home using “hay”, prepositions, adjective placement and agreement
- Food (time permitting) continuing with “gustar,” “molestar” and “encantar”

**Standards Addressed:**

The student will

- B 1.1-4 exchange personal information.
- B 1.1-7 ask and answer simple questions.
- B 1.2-2 identify aural, visual and context clues in authentic spoken and written materials.
- B 1.2-4 understand information on familiar topics in sentence-level oral and written presentations.



- B 1.3-2 use visuals as support in communicating a message.
- B 1.3-5 list and compare information from simple sources.
- B 1.3-6 communicate information in the target language in sentence-level oral and written presentations on familiar topics.
- B 2.1-2 use the target language to identify behaviors and traits that are characteristic of everyday life in the target culture.
- B 2.1-3 use the target language to identify the cultural practices that are particular to the target culture.
- B 2.2-1 use the target language to identify tangible products and symbols of the target culture (e.g., toys, dress, dwellings, foods, flags, monuments, landmarks).
- B 2.2-4 use the target language to identify social, economic, and political perspectives within the target culture.
- B 3.2-1 use the target language to identify viewpoints within the target culture that are expressed in sources intended for native speakers.
- B 4.1-1 compare cognates and word borrowings between the target language and English.

#### Unit 4: My Friends, School, and Free Time

##### Objectives:

Students will

- describe their school schedules and classes.
- ask questions about school-related topics.
- compare their own school with schools in target language countries.
- discuss after-school activities.
- express likes and dislikes about school activities.
- make plans for free time activities in the target language.
- read schedules to help make plans.
- compare leisure activities in the target culture and in their community.
- discuss preferences for food, leisure activities, etc. with classmates.

##### Content (Vocabulary and Grammar):

- Friends reviewing Unit 2
- School using “tener + que”, continuing with “gustar”, “molestar” and “encantar”
- Activities conjugating verbs, using adverbs, weather

##### Standards Addressed:

The student will

- B 1.1-2 express basic courtesies in the target language and use appropriate behaviors.
- B 1.1-4 use the target language to exchange personal information (e.g., names, home addresses, telephone numbers, e-mail).

- B 1.1-6 use the target language to express personal likes, dislikes, agreement, and disagreement regarding familiar topics.
- B 1.1-7 use the target language to ask and answer simple questions.
- B 1.2-2 identify aural, visual, and context clues in authentic target-language materials, in both oral and written forms.
- B 1.2-3 identify the main idea in authentic target-language materials, in both oral and written forms.
- B 1.2-4 understand information on familiar topics that is conveyed in the target language in sentence-level oral and written presentations.
- B 1.3-2 use visuals as support in communicating a message in the target language.
- B 1.3-5 use the target language to list and compare information from simple sources.
- B 1.3-6 communicate information in the target language in sentence-level oral and written presentations on familiar topics.
- B 2.1-2 use the target language to identify behaviors and traits that are characteristic of everyday life in the target culture.
- B 2.1-3 use the target language to identify the cultural practices that are particular to the target culture.
- B 2.2-4 use the target language to identify social, economic, and political perspectives within the target culture.
- B 3.2-1 use the target language to identify viewpoints within the target culture that are expressed in sources intended for native speakers.
- B 4.1-1 compare cognates and word borrowings between the target language and English.
- B 4.1-2 identify differences and similarities in register between the target language and English.
- B 4.1-3 recognize high-frequency target-language idioms within limited contexts.
- B 4.2-1 use the target language to identify the products of the target culture and those of his or her native culture.
- B 4.2-2 use the target language to identify behavioral patterns and perspectives in the target culture that are similar to and different from those in his or her native culture.
- B 4.2-3 use the target language to identify practices within the target culture that are similar to and different from those in his or her native culture.
- B 5.1-1 use the target language to respond to target-language speakers encountered outside of the classroom setting.
- B 5.1-2 share examples of the target language and culture with people encountered outside of the classroom setting.

#### Unit 5: My Community and the World Around Me

##### Objectives:

Students will

- compare city features in the target culture and their community.
- discuss travel options within and between cities.
- describe features of a city that interest them.
- give and follow directions to get from one location to another in an unfamiliar city.
- read maps to negotiate travel and to get from one place to another.

##### Content (Vocabulary and Grammar):

- My City, State, Country
- Travel using “ir a + infinitive” for discussing future actions
- Directions giving commands

##### Standards Addressed:

The student will

- B 1.1-3 use the target language to give simple directions; understand simple directions given in the target language.
- B 1.1-5 use the target language to express personal needs in familiar situations.
- B 1.1-6 use the target language to express personal likes, dislikes, agreement, and disagreement regarding familiar topics.
- B 1.1-7 use the target language to ask and answer simple questions.
- B 1.2-1 respond appropriately to simple directions and commands given in the target language.
- B 1.2-2 identify aural, visual, and context clues in authentic target-language materials, in both oral and written forms.
- B 1.2-3 identify the main idea in authentic target-language materials, in both oral and written forms.
- B 1.2-4 understand information on familiar topics that is conveyed in the target language in sentence level oral and written presentations.
- B 1.3-2 use visuals as support in communicating a message in the target language.
- B 1.3-3 use the target language to express personal likes or dislikes regarding familiar topics.
- B 1.3-6 communicate information in the target language in sentence-level oral and written presentations on familiar topics.
- B 2.1-2 use the target language to identify behaviors and traits that are characteristic of everyday life in the target culture.
- B 2.1-3 use the target language to identify the cultural practices that are particular to the target culture.
- B 2.2-1 use the target language to identify tangible products and symbols of the target

culture (e.g., toys, dress, types of dwellings, foods, flags, monuments, landmarks).

- B 3.1-1 locate resources and identify information in the target language that will further his or her knowledge in other subject areas.
- B 3.2-1 use the target language to identify viewpoints within the target culture that are expressed in sources intended for native speakers.
- B 4.1-1 compare cognates and word borrowings between the target language and English.
- B 4.1-2 identify differences and similarities in register between the target language and English.
- B 4.1-3 recognize high-frequency target-language idioms within limited contexts.
- B 4.2-1 use the target language to identify the products of the target culture and those of his or her native culture.
- B 4.2-2 use the target language to identify behavioral patterns and perspectives in the target culture that are similar to and different from those in his or her native culture.
- B 4.2-3 use the target language to identify practices within the target culture that are similar to and different from those in his or her native culture.

## Spanish II Syllabus

Much like Spanish I, Spanish II centers on meaningful communication, language for real-world situations, and also centers on developing cultural awareness and insights into the English language. Spanish II is organized to spiral concepts taught in Spanish I and builds upon the grammar and vocabulary learned there. As the year progresses, the grammatical concepts become more complex as students move through different tenses and moods.

The second level of Spanish at the Charles Townes Center helps to cement in our students' minds the concepts learned in level one. Having two consecutive years of the language is vital to our students' retention of the grammar structures and vocabulary learned in Spanish I. As students progress through this level, they are encouraged to begin incorporating their knowledge into a cohesive whole, thus allowing them to begin producing language to fit more complex situations.

"Learning another language is not only learning different words for the same things, but learning another way to think about things." –Flora Lewis

### Our focus:

Spanish II asks students to consider not only their present through the lens of Spanish, but also to consider their past and future. Spanish II is a year of personal reflection for the students as they remember who they were as children, examine who they are now and begin to predict who they will become as adults.

### Unit Organization:

Using the Greenville County School District Units of Study as a foundation, the CTC Spanish Department has created units of study which revolve around and depend upon questions and answers found in everyday situations and conversations. In every unit, students learn to form questions and to respond to them using related vocabulary and grammar. This allows students to use the language in a practical way from the most basic forms to the increasingly complex. These questions, and their answers, are transferrable to many topics and other units and are spiraled into Spanish III as well.

### Cultural Extensions:

- Unit specific cultural comparisons
- Mini-units (different from those from Spanish I) on Día de los Muertos, Christmas and Cinco de Mayo
- Community speakers
- Opportunities to attend community events

### Spanish II Syllabus

#### Unit 1: Who Am I?

#### Objectives:

##### Students will

- define themselves and others.
- compare themselves with their peers in the target culture.
- discuss interests and activities.

#### Content (Vocabulary and Grammar):

- Review of alphabet, pronunciation, date and weather - ongoing throughout the year
- Review of greetings, introductions and feelings
- Review and spiraling of appearance, personalities, clothing, likes/dislikes
- Grammar: using *estar/ser/tener/llevar/vestir/gustar* (and verbs like it) using reflexive verbs, possessive pronouns, adjective placement and formation

#### Standards Addressed:

The student will

- B 1.1-2 understand and express basic courtesies and related gestures.
- B 1.1-4 exchange personal information; including names addresses, telephone numbers, and e-mail. D 1.1-4 exchange information on topics of personal interest.
- D 1.1-6 express preferences, and opinions with supporting details.

- B 1.1-7 ask and answer simple questions.
- B 1.2-2 identify aural, visual, and context clues in authentic spoken and written materials.
- B 1.2-3 identify the main idea and key words from authentic spoken and written materials.
- B 1.2-4 understand information on familiar topics in sentence-level oral and written presentations.
- B 1.3-2 use visuals as support in communicating a message.
- B 1.3-3 express likes or dislikes about familiar topics.
- B 1.3-5 list and compare information from simple sources.
- B 1.3-6 communicate information in sentence-level oral and written presentations on familiar topics.
- B 2.1-1 imitate language and behaviors that are appropriate to the target culture(s) during communication.
- B 2.1-3 identify cultural practices among same-language cultures.
- B 2.1-4 recognize social issues affecting the target culture(s).
- B 2.2-4 identify social, economic, and political institutions and perspectives of the target culture(s).
- B 3.2-1 identify the viewpoints of the target culture(s) through sources intended for native speakers.
- B 4.1-2 identify word borrowings and cognates from other languages.
- B 4.1-3 identify the structural patterns of the target language and use them within limited contexts.
- B 4.1-4 identify the mechanics of the target language and use them within limited contexts in written work.
- B 4.1-5 recognize common idiomatic expressions within limited contexts.
- B 4.2-1 identify products from the target culture(s) and the student's native culture.
- B 4.2-2 identify similar and different behavioral patterns between the target culture(s) and the student's native culture.
- B 4.2-3 identify practices from the target culture(s) and the student's native culture.
- B 5.1-2 share examples of the target culture(s) with others.
- D 5.1-2 establish connections with the target culture.

#### Unit 2: How Have I Changed?

#### Objectives:

Students will

- ask for and exchange information about childhood experiences.
- compare their childhood with those of other students and adults
- place events in chronological order.

#### Content (Vocabulary and Grammar):

- Childhood activities – use of imperfect (one of two past tenses in Spanish)
- Daily activities – use of preterit (the second past tense form in Spanish)
- Landmark events – use of preterit

**Standards Addressed:**

The student will

- B 1.1-7 use the target language to ask and answer simple questions.
- D 1.1-4 use the target language to exchange information on topics of personal interest with others.
- B 1.2-2 identify aural, visual, and context clues in authentic target-language materials, in both oral and written forms.
- D 1.2-2 use aural, visual, and context clues to derive meaning from authentic target-language materials, in both oral and written forms.
- B 1.2-3 Identify the main idea in authentic target-language materials, in both oral and written forms.
- B 1.2-4 Understand information on familiar topics that is conveyed in the target language in sentence-level
  - oral and written presentations.
- B 1.3-2 Use visuals as support in communicating a message in the target language.
- B 1.3-6 Communicate information in the target language in sentence-level oral and written presentations on familiar topics.
- B 2.1-2 use the target language to identify behaviors and traits that are characteristic of everyday life in the target culture.
- B 2.1-4 use the target language to identify social issues currently affecting the target culture.
- B 2.2-4 use the target language to identify social, economic, and political perspectives within the target culture.
- B 3.2-1 use the target language to identify viewpoints within the target culture that are expressed in sources intended for native speakers.
- B 4.1-1 compare cognates and word borrowings between the target language and English.
- B 4.1-2 identify differences and similarities in register between the target language and English.
- D 4.1-3 use high-frequency target-language idioms within familiar contexts.
- B 4.2-2 identify similar and different behavioral patterns between the target culture and the student's native culture.
- B 4.2-3 use the target language to identify practices within the target culture that are similar to and different from those in his or her native culture.
- D 5.1-2 use the target language to initiate social connections with target-language

speakers encountered outside of the classroom setting.

**Unit 3: What Are My Choices?**

**Objectives:**

Students will

- ask for and exchange information about teenage opportunities.
- compare their opportunities with those of other students
- describe social activities and personal habits related to teenage life
- express opinions about social issues and teenage opportunities.
- make recommendations about positive choices.

**Content (Vocabulary and Grammar):**

- Routines – using reflexive verbs/pronouns
- Healthy living activities
- Teen issues
- Offering opinions, suggestions (using the subjunctive mood), and commands (using the imperative)

**Standards Addressed:**

The student will

- D 1.1-4 exchange information on topics of personal interest.
- D 1.1-6 express preferences, and opinions with supporting details.
- B 1.1-7 ask and answer simple questions.
- D 1.2-2 use aural, visual, and context clues to derive meaning from authentic spoken and written materials.
- D 1.2-3 identify the main idea and provide supporting details from authentic spoken and written materials.
- B 1.2-4 understand information on familiar topics in sentence-level oral and written presentations.
- B 1.3-2 use visuals as support in communicating a message.
- D 1.3-3 express and support opinions about selected topics.
- B 1.3-5 list and compare information from simple sources.
- B 1.3-6 communicate information in sentence-level oral and written presentations on familiar topics.
- B 2.1-2 identify (recognize) cultural characteristics and behaviors of everyday life.
- B 2.1-3 identify cultural practices among same-language cultures.
- B 2.1-4 recognize social issues affecting the target culture(s).
- B 2.2-1 identify tangible products and symbols of the target culture(s),
- B 2.2-2 identify and participate in the expressive forms of the culture, including children's songs, selections from children's literature, other types of artwork.

- B 2.2-4 identify social, economic, and political institutions and perspectives of the target culture(s).
- B 3.2-1 identify the viewpoints of the target culture(s) through sources intended for native speakers.
- D 4.1-1 use the sound patterns of the target language in speech.
- B 4.1-2 identify word borrowings and cognates from other languages.
- D 4.1-3 apply, within familiar contexts, the structural patterns of the target language.
- B 4.1-5 recognize common idiomatic expressions within limited contexts.
- D 4.2-2 compare behavioral patterns between the target culture(s) and the student's native culture.
- D 4.2-3 compare practices from the target culture(s) and the student's native culture.
- B 5.1-2 share examples of the target culture(s) with others.
- 

**Unit 4: Where Am I Going?**

**Objectives:**

Students will

- define themselves and others
- compare themselves with their peers in the target culture.
- discuss future interests and activities

**Content (Vocabulary and Grammar):**

- Professions
- Personality traits fitting for various professions – using future tense and conditional tense
- Adult actions

**Standards Addressed:**

The student will

- B 1.1-2 Express basic courtesies in the target language and use appropriate behaviors.
- B 1.1-4 Use the target language to exchange personal information with others.
- D 1.1-4 Use the target language to exchange information on topics of personal interest with others.
- D 1.1-6 Use the target language to express personal preferences and opinions with supporting details.
- B 1.1-7 Use the target language to ask and answer simple questions.
- B 1.2-2 Identify aural, visual, and context clues in authentic target-language materials, in both oral and written forms.
- B 1.2-3 Identify the main idea in authentic target-language materials, in both oral and written forms.
- B 1.2-4 Understand information on familiar topics that is conveyed in the target language in sentence-level oral and written presentations.

- B 1.3-2 Use visuals as support in communicating a message in the target language.
- B 1.3-3 Use the target language to express personal likes or dislikes regarding familiar topics.
- B 1.3-5 Use the target language to list and compare information from simple sources.
- B 1.3-6 Communicate information in the target language in sentence-level oral and written presentations on familiar topics.
- B 2.1-1 Imitate language and behaviors that are appropriate to interactions in the target culture.
- B 2.1-3 Use the target language to identify the cultural practices that are particular to the target culture.
- B 2.1-4 Use the target language to identify social issues currently affecting the target culture.
- B 2.2-4 Use the target language to identify social, economic, and political perspectives within the target culture.
- B 3.2-1 Use the target language to identify viewpoints within the target culture that are expressed in sources intended for native speakers.
- B 4.1-2 Identify differences and similarities in register between the target language and English.
- B 4.1-3 Recognize high-frequency target-language idioms within limited contexts.
- B 4.2-1 Use the target language to identify the products of the target culture and those of his or her native culture.
- B 4.2-2 Use the target language to identify behavioral patterns and perspectives in the target culture that are similar to and different from those in his or her native culture.
- B 4.2-3 Use the target language to identify practices within the target culture that are similar to and different from those in his or her native culture.
- B 5.1-2 Share examples of the target language and culture with people encountered outside of the classroom setting.
- D 5.1-2 Use the target language to initiate social connections with target-language speakers encountered outside of the classroom setting.
- B 1.3-5 use the target language to list and compare information from simple sources.
- B 1.3-6 communicate information in the target language in sentence-level oral and written presentations on familiar topics.
- B 2.1-2 use the target language to identify behaviors and traits that are characteristic of everyday life in the target culture.
- B 2.1-3 use the target language to identify the cultural practices that are particular to the target culture.
- B 2.2-4 use the target language to identify social, economic, and political perspectives within the target culture.
- B 3.2-1 use the target language to identify viewpoints within the target culture that are expressed in sources intended for native speakers.
- B 4.1-1 compare cognates and word borrowings between the target language and English.
- B 4.1-2 identify differences and similarities in register between the target language and English.
- B 4.1-3 recognize high-frequency target-language idioms within limited contexts.
- B 4.2-1 use the target language to identify the products of the target culture and those of his or her native culture.
- B 4.2-2 use the target language to identify behavioral patterns and perspectives in the target culture that are similar to and different from those in his or her native culture.
- B 4.2-3 use the target language to identify practices within the target culture that are similar to and different from those in his or her native culture.
- B 5.1-1 use the target language to respond to target-language speakers encountered outside of the classroom setting.
- B 5.1-2 share examples of the target language and culture with people encountered outside of the classroom setting.

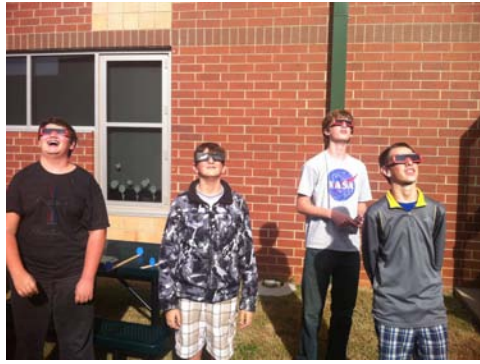


Sterling School

# Charles Townes Center

*Middle School Program of Study*

*Course Catalog and Syllabus*



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