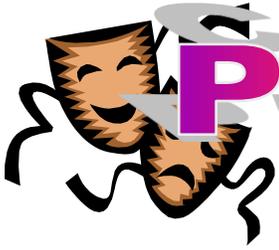




AAJHS 9th
Grade Course
Book

CAREER



ARTS & COMMUNICATIONS

This Pathway is designed to cultivate students' awareness, interpretation, application and production of visual, verbal, and written work.



BUSINESS & TECHNOLOGY

This Pathway is designed to prepare students for careers in the world of business, finance, and information systems.



ENGINEERING & INDUSTRIAL

This Pathway is designed to cultivate students' interests, awareness and application to areas related to technologies necessary to design, develop, install or maintain physical systems.



HUMAN SERVICES

This Pathway is designed to cultivate students' interests, skills and experiences for employment in careers related to family and human needs.



SCIENCE & HEALTH

This Pathway is designed to cultivate students' interests in the life, physical and behavioral sciences, in addition to the planning, managing and providing of therapeutic services, diagnostic services, health information and biochemistry research development.

ENGLISH

Honors English (Year Course)



Honors English in grade nine provides a review and further instruction in English grammar and usage. Process writing is one basis of study in three modes of writing: narrative-imaginative, persuasive, and informational. Research techniques, documentation of sources, and the production of a research paper are further studies. Students continue to learn/apply the elements of fiction and non-fiction and to analyze literature selections from the English anthology; the drama, *Romeo and Juliet*; the novel, *To Kill a Mockingbird*; the works of Robert Frost; the works of Edgar Allan Poe; various short stories; poetry; and at least two additional novels. Students will research, prepare, and present a public speech. Vocabulary development, elements of structural analysis, and word relationships are also studied. At the close of this course the student will be able to:

- Use the writing process in a variety of types of writing, including writing to a prompt: expository, narrative, persuasive, and descriptive writing.
- Produce papers according to standard rules of style and manuscript form.
- Revise and edit papers during the writing process, producing written work with proper grammar, punctuation, capitalization, spelling, and format.
- Use proper grammar in speaking and writing.
- Research information documenting multiple sources.
- Analyze literature selections for literary elements and author style.
- Read and understand contemporary and classic literature.
- Read, review, and extend comprehension and literary responses in tune with higher levels of thinking.
- Recognize and practice Keystone eligible content.

Academic English (Year Course)

Academic English in ninth grade provides a review of English grammar and usage. There is a focus on the process of writing through prewriting, writing, and revising assigned topics. Research techniques, documenting of sources and the production of a beginning research paper are stressed. Students analyze the elements of fiction and non-fiction, along with literature. Literature study includes reading of short stories, poetry, selections from the anthology, *Romeo and Juliet*, and *To Kill a Mockingbird*. Students will research and prepare a public speech. Vocabulary development is also stressed. At the end of this course, students will be able to:

- Use the writing process in a variety of types of writing, including writing to a prompt: expository, narrative, persuasive, and descriptive writing.
- Use the writing process proficiently to write and edit their papers for proper grammar, punctuation, capitalization, spelling, and format.
- Use proper grammar in speaking and writing.
- Research information, documenting sources.
- Analyze literature selections for literary elements.
- Read and understand contemporary and classic literature.
- Recognize and practice Keystone eligible content.

Core Academic English (Year Course)

Students in English 9 continue to develop writing skills learned in grades seven and eight. Students review grammar, usage, sentence structure, paragraph writing, research techniques, and the mechanics of writing. Literature study includes non-fiction selections, poetry selections, Romeo and Juliet, and a novel. Students will acquire skills in application collaborating in small groups for task completion. At the end of this course, students will be able to:

- Use the writing process to produce and edit work.
- Research information, documenting more than one source.
- Use proper grammar in oral and written communication.
- Analyze classic and contemporary literature.
- Compose a memo and message.
- Demonstrate interview skills.
- Recognize and practice Keystone eligible content.

English (Year Course)

Students in English 9 continue to develop writing skills learned in grades seven and eight in a co-taught class. Students review grammar, usage, sentence structure, paragraph writing, and the mechanics of writing. Literature study includes adapted non-fiction selections, poetry selections, Romeo and Juliet, and The City of Ember. At the end of this course, students will be able to:

- Develop ideas into paragraphs.
- Write and correctly punctuate complete sentences.
- Analyze classic and contemporary literature.
- Compose a response to an informative, narrative, and persuasive prompt.
- Use context clues to identify and apply vocabulary.
- Recognize and practice Keystone content.



SOCIAL STUDIES

Honors Civics (Year Course)

Students taking Honors Civics deal in-depth with fundamental principles of government and citizenship, and emphasize critical thinking and skill in self-expression. Students taking this course study general concepts that can be used to understand the meaning of American citizenship, the institutions of American government, and the American economic system. Students will acquire knowledge of various beliefs, and ideas that are central to American citizenship, government, and

economics. This knowledge will be used as a base to analyze the interaction of the United States with other nation's governments and institutions.

The major areas of study include the following: Principles and Documents of Government; Rights and Responsibilities of Citizenship; How Government Works; How International Relationships Function; and The American Economic System. Upon completion of this course, students will be able to:

- Determine the importance of the principles and ideals in civic life.
- Describe the sources, purposes, and functions of law.
- Analyze and apply the principles and ideals of the basic documents shaping government of the United States.
- Analyze the rights, responsibilities, and participatory role of citizens at local, state, and national levels of government.
- Explain the importance and process of registering to vote.
- Analyze and evaluate the structure and organization and operation of the local, state, and national governments.
- Analyze elements of the election process.
- Analyze issues regarding how and why government should raise and spend money to pay for its operation and services.
- Analyze the interaction of the United States with other nations and governments.
- Evaluate the development and implementation of foreign policy.
- Analyze the purpose and function of international organizations.
- Explain basic economic principles.
- Evaluate the advantages of a free enterprise system.
- Evaluate the role of government in our free enterprise system.

Academic Civics (Year Course)

The Academic Civics course will involve students in an in-depth study of the principles of government and citizenship. Students will gain an understanding of the individual functions of the institutions of our US government, our, and other, economic systems, as well as an understanding of how these institutions work together. The information and knowledge gained will be used to provide a background for students that will enable them to compare our nation's government with that of other nations. Additionally, students will be able to place current events in an historical context as well as make reasoned political assessments and decisions. This will prepare students for involvement in the American political process. Upon completion of this course, students will be able to:

- Describe the purpose and origin of US government and compare/contrast it to other government systems existing throughout the world.
- Describe foundations of our legal system and how it functions.
- Explain the importance of registering and voting.
- Recognize the distinctive characteristics of American society and the principles that are basic to American Constitutional Democracy.
- Evaluate the structure and organization of local, state, and national government.
- Describe how the United States diplomatic endeavors function and form US foreign policy with other nations.
- Explain the function and purpose of the United Nations and its agencies.
- Describe the meaning and importance of American citizenship.

- Analyze and apply the rights and responsibilities of being an American citizen.
- Describe the operation/functioning of a free enterprise system and our government's role within that system.
- Identify the principles that drive the free enterprise system.

Core Academic Civics (Year Course)

This course deals with the study of the American political and economic system. Students gain an understanding and appreciation of what it means to be a citizen and what it means to interact with our society and government. Citizen responsibility is a cornerstone of this course. Students discuss and study our political and economic system to empower them to understand current events in historical context, make reasoned political decisions, and identify steps to effect political action. Upon completion of this course, students will be able to:

- Describe the purpose and origin of governments as well as the differences between diverse governmental systems.
- Recognize the distinctive characteristics of American society and the value and the principles that are basic to American constitutional democracy.
- Explain what national, state, and local governments do and how these governments are influenced.
- Identify the role of law in the American political system.
- Recognize that the politics of the United States influence other nations and affect its relations with the world.
- Recognize what citizenship is and identify the rights and responsibilities of citizens.
- Identify the basic economic principles of the free enterprise system.
- Explain how our government is financed and the budget process.

Civics (Year Course)

This course deals with the study of the principles of government and citizenship. Students gain an understanding and appreciation of what it means to be a citizen and what it means to interact with our society and government. Students will also gain an understanding of the functions of the institutions of our U. S. Government and how these institutions will work together. Students will discuss and study our political and economic system to empower them to understand current events. Upon completion of the course, students will be able to:

- Describe the purpose and origin of governments.
- Recognize what citizenship is and identify the rights and responsibilities of citizens.
- Name the 3 branches of government and describe the functions/relations of each branch.
- Describe the foundations of our legal system and how it functions.
- Explain how our government is financed and the budget process.
- Explain what national, state, and local governments do and how these governments are influenced.
- Explain the election process and the importance of registering and voting.
- Identify the basic economic principles of the free enterprise system.

MATHEMATICS



Honors Algebra II (Year Course)

Prerequisite: Honors Algebra I.

This is an extensive course which includes the study of real and complex numbers, absolute value, factoring polynomials, solving and graphing linear equations and inequalities, systems of equations and inequalities and quadratic equations. Relations and functions, rational expressions, roots and radicals, and rational exponents are also thoroughly studied. Problem solving, higher logical thinking and reasoning are stressed throughout this course. This course is for students who are strong in math and are willing to do more in depth learning that will require some extra effort on the part of the student. Upon completion of this course, the student will be able to:

- Use basic algebraic terms to define and graph sets.
- Use properties of real numbers to simplify expressions and solve equations.
- Solve first degree linear equations and use them in various applications.
- Solve and graph linear inequalities, absolute value equations and inequalities, and compound inequalities.
- Use the Cartesian Coordinator System to graph linear functions and equations.
- Write linear equations given specific criteria such as slope, a point on the line, and the y-intercept.
- Form composition of functions and find domains and ranges of functions.
- Solve and use systems of two and three linear equations and systems of two linear inequalities.
- Solve direct, inverse, combined and joint variation.
- Operate with positive and negative exponents.
- Perform algebraic operations on polynomials and factor polynomials and rational expressions.
- Operate with algebraic fractions, solve and use fractional equations.
- Operate with expressions containing integral and fractional exponents.
- Solve rational expressions
- Operate with radicals and solve radical equations.
- Operate with complex numbers
- Use the Cartesian Coordinate System to graph quadratic functions, solve and use quadratic equations.
 - Solve functions involving exponents and logarithms.
 - Become familiar with and practice Keystone Standards.

Academic Algebra II (Year Course)

Prerequisite: Academic Algebra I.

The course will review Algebra I concepts and expand upon these topics. The course will also cover the concepts of Algebra II listed below with problem solving being stressed throughout the course. Specific objectives include:

- Review of the real number system.

- Solve and use first degree equations to solve problems.
- Solve and graph linear inequalities.
- Solve and graph absolute value equations and inequalities.
- Use the Cartesian Coordinate System to graph linear equations and inequalities.
- Find domains and ranges of relations and functions and form composition of functions.
- Solve and use systems of two and three linear systems of equations to solve problems.
- Add, subtract, multiply, and factor polynomials.
- Add, subtract, multiply, and divide rational expressions.
- Simplify complex fractions.
- Simplify and performs operations using rational exponents and radical expressions.
- Simplify and perform operations with complex numbers.
- Graph, solve, and use quadratic equations to solve problems.
- Become familiar with and practice Keystone Standards.

Algebra I (Year Course)

The goal of this class is to have the students successfully master Algebra I skills, as well as focus on Keystone Exams anchors. Specific lessons will highlight course content including the following:

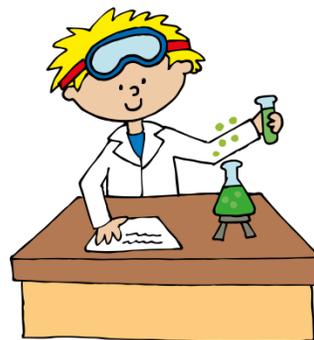
- Operations with Real Numbers and Expressions
- Linear Equations and Systems
- Linear Inequalities
- Functions
- Coordinate Geometry
- Data Analysis
- Exponents
- Factoring

Algebra 1A – (Year Course)

This course is designed to provide students with necessary skills for success in a high school Algebra 1 course. At the completion of this course, students will:

- Review basic pre-algebra skills.
- Solve one, two, and multi-step equations
- Use various formulas.
- Solve and graph linear inequalities.
- Use function rules and their graphs.
- Graph linear equations.
- Solve systems of equations using various methods.
- Use exponent rules.
- Use square roots and apply the Pythagorean Theorem.
- Display and analyze data
- Calculate measures of central tendency.

SCIENCE



Honors Biology (Year Course)

This course is required for Honors grade nine students. The Honors Biology course builds upon the Academic Biology course by providing students with additional depth and problem solving experiences. The major areas of emphasis are molecular biology, cellular biology, genetics, structure and function of plants and animals, and ecology. Laboratory work is a vital part of this course. Students should take Honors Biology as a preparation for other high school level science courses and future science-related college programs. Upon completion of this course, the students will be able to:

- Summarize the key characteristics of living things.
- Analyze our place in the living world, considering that all organisms in biosphere are interrelated and affect one another in many ways.
- Identify the steps of the scientific method and utilize this method during the course.
- Identify cells and identify the basic parts of most cells.
- Illustrate and outline the events that take place in cell division.
- Diagram basic genetic crosses utilizing the Punnett Square.
- Describe the structure of a DNA molecule and summarize the process of DNA replication and protein synthesis.
- Examine the evidence of the fossil record and evaluate how dramatically organisms have changed through time.
- Compare and contrast the five kingdoms of living things.
- Describe the basic cell processes of cell transport, photosynthesis and cell respiration.
- Identify patterns of heredity by examining, creating and analyzing pedigrees and karyotypes.
- Recognize and practice Keystone Standards.

Academic Biology (Year Course)

This course is required for Academic grade nine students. The major areas of emphasis are molecular biology, cellular biology, genetics, structure and function of plants and animals and ecology. Laboratory work is a vital part of this course. Students should take Academic Biology as a preparation for other Level 3 or Level 4 high school science courses and future science-related college programs. Upon completion of this course, the students will be able to:

- Summarize the key characteristics of living things.
- Analyze our place in the living world, considering that all organisms in the biosphere are interrelated and affect one another in many ways.
- Identify the steps of the scientific method and utilize this method during the course.
- Identify the parts of the microscope and utilize this method during the course.
- Identify cells and identify the basic parts of most cells.

- Illustrate and outline the events that take place in cell division.
- Diagram basic genetic crosses utilizing the Punnett Square.
- Describe the structure of a DNA molecule and summarize the process of DNA replication and protein synthesis.
- Examine the evidence of the fossil record and evaluate how dramatically organisms have changed through time.
- Compare and contrast the five kingdoms of living things.
- Describe basic cell processes of cell transport, photosynthesis and cell respiration.
- Identify patterns of heredity by examining, creating and analyzing pedigrees and karyotypes.
- Recognize and practice Keystone Standards.

Core Academic Biology (Year Course)

This course is a hands-on approach to biology required for ninth grade students. It is designed to provide the necessary skills for the study of applied chemistry and physics. This course is oriented towards world-of-work applications. The major areas of emphasis are classification of life, cellular biology, genetics, structure and functions of plants and animals and ecology. Laboratory work is a vital part of this course. Upon completion of this course, the students will be able to:

- Summarize the key characteristics of living things.
- Analyze our place in the living world, considering that all organisms in the biosphere are interrelated and affect one another in many ways.
- Identify the steps of the scientific method and utilize this method during the course.
- Identify the parts of the microscope and utilize this method during the course.
- Identify cells and identify the basic parts of most cells.
- Illustrate and outline the events that take place in cell division.
- Diagram basic genetic crosses utilizing the Punnett Square.
- Describe the structure of a DNA molecule and summarize the process of DNA replication and protein synthesis.
- Examine the evidence of the fossil record and evaluate how dramatically organisms have changed through time.
- Compare and contrast the five kingdoms of living things.
- Describe the basic cell processes of cell transport. Compare/contrast photosynthesis and cellular respiration.
- Identify patterns of heredity by examining, creating and analyzing pedigrees and karyotypes.
- Recognize and practice Keystone Standards.

Biology (Year Course)

This course is a hands-on approach to biology required for 9th grade students. It is designed to give basic background in biology and fundamentals of scientific experiments for further basic science studies. The areas of emphasis are characteristics of life, cell biology, genetics, classification of life, and a survey of the kingdoms. Laboratory work is an integral part of this class, as well as focusing on study skills and organization. Upon completion of the course, students will be able to:

- Identify the characteristics of life.

- Identify the steps of the scientific method and apply them to real life situations.
- Utilize a microscope properly.
- Differentiate plant, animal and bacterial cells.
- Identify cell parts and their functions.
- Describe the basic processes of cell transport.
- Explain photosynthesis, and cellular respiration and how they are related.
- Illustrate phases of cell division (mitosis).
- Utilize a Punnett Square to diagram basic genetic crosses.
- Describe the structure of DNA.
- Classify the hierarchy of living things.
- Compare and contrast the kingdoms of life.
- Analyze human impact on the world around us and the interrelationships of all organisms.

Brief Descriptions of 9th Grade Electives

English:

- ___ **Diversity in Literature** Reading & interpreting stories from diverse cultures .5
- ___ **Poetry** Reading, creating and interpreting poetry .5
- ___ **Lifetime Success** Setting life and career goals for kids who don't enjoy school .5
- ___ **Critical Literacy** Reading, analyzing and responding to novels, short stories, comics, videos, etc. 1.0
- ___ **Drama** Learning vocal control, movements, and communication thru various acting techniques 1.0
- ___ * **Newswriting** Producing the school paper: hard copy and online. Writing stories, interviewing students and staff, meeting deadlines 1.0

Social Studies:

- ___ **Sociology American Sports** Discussing class, race, gender and media in sports .5
- ___ **History of Pop Culture** History of film, radio, art, tv, etc. 1900-1970 for academic students .5
- ___ **History of Pop Culture**
History of film, radio, art, tv, etc. 1900-1970 .5
- ___ * **A.P. Human Geography** College level study of human social organization & environmental consequences. AP test 1.0

Math:

- ___ **Algebra 1 Intervention** Students not proficient in the Algebra Keystone are required to take this refresher course .5

Science:

- ___ **Careers in Science** Learning career options for our technological society .5
- ___ **Human Syst. & Disease** Studying human anatomy, diseases, genetics, and treatments .5
- ___ **Science, Technology & Society** Learning current topics in science and how science affects our lives .5

Computers:

- ___ **Computer Essentials** Operating Excel, Word, Power Pt. Learning internet safety for academic students .5
- ___ **Introduction to Word Process** Formatting documents, tables and reports using Word 1.0 **Required for Core Academic**
- ___ * **Yearbook** Producing the school yearbook: layout, writing, photography 1.0

Family and Consumer Science:

- ___ **Adventures in Consumerism** Managing money, recognizing identity theft, shopping wisely .5
- ___ **Child Development** Studying from prenatal-6yrs.growth & development .5
- ___ **Foods for Healthy Living** Cooking, dietary guidelines, food addictions .5
- ___ **Teen Issues** Personal, family & social challenges, decision making skills b.5

Technology Education:

- ___ **Construction & Production** Wood & metal working and plastic processing .5
- ___ * **Drafting & Design** Computer aided drafting, architectural design, manual drafting .5
- ___ **Engineering, Design & Development** Learning construction, power, energy, transportation, & robotics .5
- ___ **Multimedia & Communication Technology** Desktop publishing, designing brochures, newsletters, animation .5
- ___ * **Web Design/ Editing** Maintaining the school website, design, layout, editing video 1.0

Art:

- ___ **Printmaking** Stenciling, mono-printing, and block printing .5
- ___ **Introduction to 3D Art** Utilizing foam, metal wire, plaster and paper mache to make 3D art .5
- ___ **Art in Public Spaces** Art history and the creation of pieces from various time periods .5

___ **Art** Drawing, painting, design, printmaking and works in 3-D **1.0**

World Language:

___ **French 1** Listening, speaking, reading & writing basic French **1.0**

___ **German 1** Listening, speaking, reading & writing basic German **1.0**

___ **Spanish 1** Listening, speaking, reading & writing basic Spanish **1.0**

World Language Required for Honors/Academic

Music:

___ **Band** Instrumentalists involved in marching and concert bands **1.0**

___ **String Ensemble** String instrumentalists **1.0**

___ ***Chorus** Performance of 3 part harmony. Audition required **1.0**

___ **** GACTC** (3 periods) Career and technical program for students needing an extra year of instruction to prove themselves. **3 cr.**

.5 half year course

1.0 full year course

***Teacher Recommendation Required**

**** Principal and Counselor Recommendation**

ELECTIVES

FOREIGN LANGUAGES



For any foreign language, students must possess good listening skills and the ability to concentrate on the spoken word. They must acquire excellent study habits and be willing to study at least 20 minutes every night. Attendance and participation in class are crucial to success.

French I (Year Course)

This is an introductory course in which basic listening, speaking, reading, and writing skills are developed. Using specific language structures and structural patterns, students will use expression in using the present tense; ask questions for general and specific information; describe surroundings; discuss sports, types of television shows, various French foods, and aspects of French-speaking cultures.

Upon completion of this course the students will be able to:

- Develop basic listening, speaking, reading, and writing skills.
- Study contemporary life in French-speaking areas of the world.
- Develop conversational, reading, listening, and writing that would allow survival in a French-speaking setting.
- Demonstrate an awareness and tolerance of French cultural aspects.

German I (Year Course)

This course will provide students with a sound basis for learning German as it is spoken and written today. It will enable students to use and understand German in all its communication forms. Students will gain competency in the four areas of language acquisition: speaking, listening, reading and writing. They will be expected to participate in class and group activities.

Upon successful completion of this course, students will be able to:

- Describe daily activities
- Describe likes and dislikes
- Give directions and commands
- Express themselves in present and future tenses
- Discuss school and leisure activities
- Discuss the weather
- Ask questions
- Follow directions
- Give logical responses to questions in German.

Spanish I (Year Course)

Using appropriate grammatical structures and vocabulary, students will be able to accomplish a variety of everyday tasks such as introducing themselves to another person, discussing the weather, asking the prices of various items in a store, etc. They will practice identifying the main topic and supporting details of texts and taped conversations related to these same topics. Finally they will also gain awareness of the culture and geography of the countries where Spanish is spoken.

Students are expected to participate actively in all class activities and complete conscientiously all assigned homework on a daily basis. Students will also be expected to prepare for and take all assigned tests and quizzes given during the course. They will also complete one benchmark project related to material they learned in class during each of the first three marking periods. Students will take a cumulative final exam at the end of the fourth marking period.

Upon completion of this course, the students will be able to:

- Develop basic reading, writing, speaking, and listening skills in Spanish.
- Gain an appreciation of the culture and an awareness of the geography of the Spanish speaking world.

English

Newswriting (Year Course)

Prerequisite: Teacher recommendation is required.

Teamwork is essential to establishing a successful school newspaper. Students learn to take responsibility and collaborate in a learning environment. A newspaper serves many functions, including reporting news and serving as a written record of the school's events. Keep in mind, not all school events occur during the course of the school day. It may be necessary for students to cover events or conduct interviews before or after normal school hours. All students choosing to participate in this course will perform all of the duties associated with producing a school newspaper. Teacher recommendation and signed contract are necessary for course assignment.

This course is product-oriented. Students participate in the following activities:

- Brainstorming story ideas
- Conducting Interviews
- Writing stories including news, sports, features, editorials, and columns
- Writing headlines
- Taking Photos
- Designing the newspaper

Diversity in Literature (Semester Course)

In this course students will study different cultures and read a variety of multicultural literature. The authors are primarily from African American, Hispanic, Asian American, and Native American backgrounds. Many of us don't come in contact with people from other ethnic groups in meaningful ways. We may go to school with them, but never strike up conversations or build relationships. The activities and literature in this course will give you the opportunity to learn what you otherwise may not know. The characters in these readings raise questions common to all of us: Who am I? How important is my family? How does the outside world influence me?

Upon completion of this course, the students will be able to:

- Build and expand an understanding of cultural differences.
- Make personal connections with individuals from different cultural backgrounds.
- Compare and contrast different cultural heritages and viewpoints.
- Learn the customs and traditions of diverse cultures

Poetry (Semester Course)

In this course students will study poetry. Special attention to the poet's technique and structure of poetry will build an appreciation of poetry for students. A writing workshop will be offered for students who wish to focus on writing and revising poetry, as well as for developing an audience for one's works.

Upon completion of this course, the students will be able to

- Analyze poetry for structure and meaning.
- Analyze poetry for the different literary elements.
- Compose original poetry.
- Use the writing process to produce and edit his/her work.
- Reflect a literary and poetic background of study.

Critical Literacy (Year Course)

This ninth grade elective requires students to think critically, respond to and discuss unique topics using various types of “texts.” These “texts” include novels, biographies, short stories, poems, comics, videos, magazines, newspapers and other informational pieces. Marking period themes include, but are not limited to 9/11, “Haunted” America, Strange & Mysterious Phenomenon, Super Heroes, Real Heroes, Comic Strips, Graphic Novels, Unique Historical Figures & Events, Media Literacy, and Local History-Legend and Lore. The major focus of this course is to encourage, support, and challenge students to find deeper layers of meaning in all “texts.” Students will engage in activities that require critical thinking and questioning of people, places, events, and ideas. These skills will enable students to become more efficient readers of “texts” and their worlds. This process will enhance their school experiences, and just as importantly, their life experiences. The goal of this course is to provide students with a range of experiences that will enable them to

- Improve independent reading skills.
- Read critically
- Analyze and interpret texts (fiction/nonfiction)
- Identify and interpret characteristics and functions of language

Language Communication Skills for Lifetime Success (Semester Course)

Teens today face many tough decisions. It’s easy to get lost in the struggle with so many ups and downs and big choices to make. Maybe you’re having a hard time getting good grades, making friends, making good decisions, or dealing with peer pressure. In this course, you will learn healthy habits to use when faced with these and other tough issues.

Upon completion of this course, the student will:

- Learn time management and organizational skills.
- Develop interpersonal skills.
- Learn communication skills.
- Set goals that will inspire them to succeed.

Social Studies

Advanced Placement Human Geography (Year Course)

Prerequisite: Eighth Grade Honors American Cultures and teacher recommendation.

This course is an introductory college course in human geography to introduce the students to the systematic study of patterns and processes that have shaped human understanding, use, and the alteration of Earth's surface. Students employ spatial concepts and landscape analysis to examine human social organization and its environmental consequences. The students will also learn about the methods and tools geographers use in their science and practice. *The fourth marking period will be dedicated to a comprehensive review of all materials covered and test preparations. The Advanced Placement Exam is given approximately the second week of May*

This is a college level course, so the difficulty level is established so freshman students may succeed on the national test. As a result, homework assignments are frequent and involve complex readings and writing essays. This will prepare the students to take the Advanced Placement Test for awarded college credits.

Upon completion of this course, students will be able to:

- Utilize and analyze maps and data to understand cultural and historical data.
- Understand and interpret the implications of associations among phenomena in places throughout the world.
- Recognize and interpret at different scales the relationships among people, patterns, places, and processes.
- Define regions and evaluate the regionalization process locally and on a world scale.
- Characterize and analyze changing interconnections among places.
- Examine the five themes of geography and use these themes to understand the connections between humans and earth.

A History of Popular Culture 1900-1979 (Semester Course)

This course explores the origins and cultural meanings of American popular culture in the early 20th century and, in particular, the rise of commercial entertainment between 1900 and 1970. Students will be introduced to the cultural history of film, radio, education, television, literature, art, theater, architecture and sports as expressions of identity and community affiliation in a diverse nation. In addition, we will examine how popular culture has affected ideas about gender, race, class and nation in the twentieth century. The course will require reading in history and cultural studies and active class participation. Upon completion of this course, students will be able to:

- Articulate the cultural and social importance of popular culture in shaping the twentieth century American history.

- Demonstrate skill in the historical analysis of various forms of popular culture.
- Identify how popular culture both shaped and reflected conceptions of race, class, gender, and American national identity.
- Analyze what popular culture tells us about the aspirations, yearnings, and anxieties of the people who consume it, produce it, and oppose it..
- Explain how Americans used popular culture to make sense of dramatic social, economic, and political changes.
- Discuss how conceptions and experiences of race, ethnicity, class, gender, and age factor into the production and reception of popular culture.

Sociology of American Sports (Semester Course)

This course will consider issues of class, race, gender, ethnicity, culture, economics, consumerism, and the role of the media from a historical perspective as we analyze the emergence of sports in America and its role in American society. Upon completion of the course, students will be able to:

- Explain how sports have contributed to our society.
- Differentiate between professional and amateur sports.
- Assess current issues and/or controversies relating to sports.
- Utilize resource material to complete projects and/or research papers.
- Identify major figures in American sports history and assess their role in the development of their particular sport.

Science

Human Systems and Disease (Semester Course)

Prerequisite: Successful completion of Academic Integrated Science 8.

This course will examine each organ system, its function and how it is impacted by disease. This course is oriented towards world-of-work applications in health-related fields. Laboratory work will be incorporated into this course.

At the completion of this course, students will have an understanding of human system structure, function and reaction to disease. Impact of genetic, viral, bacterial and fungal infections on human organ systems will be explored. Medicine and technology related to human anatomy, physiology and disease will be examined. It is expected students will develop lab skills, safety techniques and knowledge related to human health and medical workplaces. Upon completion of this course, the students will be able to:

- Summarize the key characteristics of human anatomy and organ system functions..
- Analyze human diseases, infectious spread and genetic causes.
- Describe medical treatment and techniques for human disease and disease prevention.
- Demonstrate safe and proper laboratory skills.

Careers in Science (Semester Course)

Prerequisite: Successful completion of Academic Integrated Science 8 or Integrated Science 8.

This course will study career options that will enable students to use their scientific investigation skills and knowledge in this fast paced technological society. We will examine types of science careers available, preparations for these careers, possible job duties, and possible laboratory experiments similar to ones that may be completed on the job.

At the completion of this course students will have a better understanding about science oriented careers, and the methods needed to prepare themselves to enter the scientific workplace. Students will be expected to participate in hands on activities aimed at increasing their scientific knowledge and exposing them to the skills needed in the technological workplace. Upon completion of this course, the students will be able to:

- Survey the diverse science careers available.
- Predict how these careers may change with emerging technology.
- Utilize laboratory equipment to examine strategies that may be applied on the job in a science-oriented career.
- Describe the educational requirements that need to be completed for various science-oriented careers.

Science, Technology, and Society (Semester Course)

Prerequisite: Successful completion of Academic Integrated Science 8 or Integrated Science 8.

The course will focus on how science and technology play a role in society throughout history. The course will look at how social, political, and cultural values are influenced by science and vice versa. Students will discuss current topics in science and how they have impacted life and will continue to do so. The class will look at the future and the ways that science and technology are emerging.

Upon completion of this course students will have a better understanding of the way that society is impacted by the science and technology advances made. Students will also gain experience in reading and discussing current event articles and historical accounts of scientific discoveries. Students will be encouraged to form opinions about social issues and discuss ways that science has influenced them. Upon completion of this course students will be able to:

- Summarize the relationship between science, technology, and society.
- Discuss the implications of scientific and technological advancement on society.

- Discuss important scientific discoveries and their historical impact.
- Analyze current events in science and discuss the future of science and technology.



Business Education

Introduction to Word Processing (Year Course)

This elective will allow students to review the touch typing method to establish proper typing techniques. Students will receive hands on computer instructions through the features of Microsoft Office for Windows which include Word, Excel, and PowerPoint. Upon completion of this course, the student will be able to:

- Improve keyboarding skills using proper typing techniques.
- Use the functions of word processing to input and format letters, memos, reports, tables, and other documents.
- Demonstrate the ability to use the basic features of the Excel program.
- Use basic spreadsheet features to create, develop, and use a basic spreadsheet.
- Demonstrate the ability to use the basic features of the PowerPoint program.
- Create presentations using PowerPoint.

Computer Essentials (Semester Course)

Prerequisite: Successful completion of Information Processing/Keyboarding Course

This elective will allow the **academic student** to pursue hands on computer instruction through the features of Microsoft Office for Windows which include Word, Excel, and PowerPoint. This class will emphasize the I-Safe standards (internet safety). This course will provide students with a firm foundation in computer/technology for pursuing their education and/or career.

- Improve keyboarding skills using proper typing techniques.
- Use the functions of word processing to input and format letters, memos, reports, tables, and other documents.
- Demonstrate the ability to use the basic features of the Excel program.
- Use basic spreadsheet features to create, develop, and use a basic spreadsheet.
- Demonstrate the ability to use the basic features of the PowerPoint program.
- Create presentations using PowerPoint.

Yearbook (Year Course)

Prerequisite: Teacher recommendation is required.

Students are members of the junior high school yearbook staff and are solely responsible for the production of the yearbook. Staff members participate in all aspects of the book's creation, including theme development, layout design, reporting of school events, writing captions, and photography. Class time is used to create the publication, but **it may be necessary, at times, to attend after-school events to both report on sports/activities and take photographs.**

- Provide a laboratory experience culminating in the actual production of the school yearbook.
- Practice journalistic principles as they apply to the production of a yearbook.
- Operate desktop publishing and photo editing software.

Technology Education

Web Design and Video Editing/ Production Technology (Year Course)



Prerequisite: Teacher recommendation is required.

This course is designed to equip students with the skills necessary to function in a media-oriented society. Students will be required to design and develop video/audio projects/segments using pre-production planning, storyboarding/scripting, filming, editing, and post-production techniques. Students explore the theory and practice of various editing styles in order to gain a better understanding of how stories are constructed in the editing room. Through demonstrations and hands-on experience, students learn advanced editing techniques with an in-depth examination of Avid Media Composer. To further enhance projects, students create animated motion graphics using Avid FX. Strong emphasis is placed on post-production techniques that improve the sound and image quality of the videos. This laboratory-based course also allows students to learn web design skills through special projects and exercises. Emphasis is given to the manipulation of both vector and bitmap images to create graphics and interactivity. Students will also learn the skills of graphics file management. Students will maintain and develop pages for the AAJHS Web Site and work to integrate forms of multimedia technologies to enhance the website. Students will upload pages, images, PDF's and resources to a remote server to be posted live. Upon completion of this course, students will be able to:

- Evaluate the criteria and constraints of a design.
- Explore the design process as a collaborative endeavor in which each person in the group presents his or her ideas in an open forum.
- Operate and maintain systems in order to achieve a given purpose.
- Efficiently use technological devices and software to convey a message.

- Describe how the design of the message is influenced by such factors as the intended audience, medium, purpose, and nature of the message.
- Create and maintain a web page or a section of the Altoona Area Junior High School Website.
- Design and develop both vector and bitmap graphical images.
- Design, produce and edit film to create a video production, utilizing the video cameras/equipment and AVID software.
- Work cooperatively as a team from start to finish on complex projects to convey a positive message.

Multimedia/Communication Technology (Semester Course)

This course offers hands-on exploration of computer assisted techniques of editing, design, graphic production and layout of publications. Students will work on many different forms of multimedia technology. Students will explore areas of desktop publishing utilizing software in the Adobe Suite to layout and design graphics to be incorporated into publications such as calendars, brochures, advertisements, newsletters, and package designs. Students will be introduced to digital photography, composition, image enhancing, video editing, and animation through the use of various software and technological devices.

- Identify and discuss the different types of communications.
- Evaluate the positive and negative impacts of communication technology.
- Utilize software to create vector and bitmap graphical images.
- Explore areas of desktop publishing to design and create calendars, brochures, newsletters, and other printed materials.
- Utilize digital photography equipment and software to convey a message.
- Utilize Toon Boom Studio software to create computer animations.
- Design, produce, and edit film to create video and multimedia productions.

Engineering Design and Development (Semester Course)

This course is designed to provide the student with problem solving activities related to scientific and engineering principles. Students construct individual and group projects dealing with construction, power and energy, and transportation systems. Activities include research and design in the areas of land transportation, marine transportation, CO2 Dragsters, and bridge/tower construction. The area of System Control/robotics introduces students to the history of robotics, the terminology used in robotics and robotic programming. Students will use software and Lego MindStorm kits to design, build, program, and test robots that solve “real life” challenges. Upon completion of this course, students will be able to:

- Utilize and apply the engineering design process model to plan, create, build, test and evaluate various structural designs.
- Identify the types of forces applied to all structures.
- Discuss and explore the four environments of transportation: air, land, water and space.
- Identify and experiment with the different form of energy.
- Discuss alternative forms of energy and possible environmental impacts.
- Identify and discuss the relationship between technology, science and society as it pertains to system control robotics.
- Utilize robotic software, Lego MindStorm kits to create and test several robotic devices.

- Identify and demonstrate the safe use of applicable tools, machines and materials in the laboratory.

Drafting and Design (Semester Course)

Prerequisite: Teacher recommendation is required.

This elective course will be divided into three sections: Board drafting (manual), Computer-Aided Drafting and Architectural Design. This course is designed to provide the students with a basic knowledge and understanding of 2D or 3D drawings. Students will apply fundamentals drafting and design concepts such as: basic drawing concepts, dimensioning and lettering. The architectural component of the course will utilize the Chief Architect software. Students will gain an understanding of the fundamentals of building, such as building codes, elevations, create floor plans, and estimate building cost for the entire home. Upon completion of this course, students will be able to:

- Identify and utilize the appropriate means for communication designs, including sketching, technical drawing, computer renderings, and scale models and prototypes.
- Apply sketching and technical drawing skills to create working drawings.
- Utilize Autodesk software to create computer-aided drawings.
- Identify the fundamentals of building and the importance of reading blueprints.
- Develop house designs and floor plans drawing using the Chief Architect software.
- Discuss the use of Global Positioning System (GPS) and Geographical Information Systems (GIS).
- Utilize the technological problem-solving model.
- Research and explore careers related to drafting and design.

Construction and Production Technology (Semester Course)

This course will allow students to experience a more in-depth look at the manufacturing industry and production techniques. This course will deal with aspects of woodworking, metalworking, and plastic processing. With the instructor's assistance, the student will design, plan and construct various projects using a combination of materials. The students will also explore current technologies used in the industry, such as CNC router, mill, laser, and lathe.

- Identify and apply terms relevant to construction and production technology.
- Outline the history and major changes in the industry.
- Describe the basic organizational structures and types of manufacturing systems.
- Explain the role of production and construction in our economy, society, and the environment.
- Utilize the technological problem-solving model.
- Apply knowledge to create and develop hands-on projects by utilizing the tools/machines available in the laboratory.
- Identify and demonstrate the safe use of applicable tools, machines and materials in the laboratory.
- Research and explore careers related to construction and production, along with different types of educational training used in industry.

Family and Consumer Science



Adventures in Consumerism (Semester Course)

Adventures in Consumerism will discuss consumers' roles, rights, responsibility, and protections; fraud, identity theft, and other consumer problems; management and decision making. The course will also utilize hands on experiences and discussions on managing money including pay and benefits; savings strategies and options. Students will learn how to make smart shopping decisions, including evaluating advertisements; sales, coupons and other promotions; places to shop; online shopping; and comparison shopping. Consumer skills in planning nutritionally balanced meals while investigating fast and convenience foods along with merchandising tactics and supermarket persuasion techniques are stressed. After completing this course you should be able to:

- Describe state and federal policies and laws providing consumer protection.
- Demonstrate skills used in seeking information related to consumer rights.
- Understand the need for personal and family financial planning.
- Understand what's behind advertising messages.
- Make smart decisions when shopping at home using a catalog, TV, or internet.
- Demonstrate the ability to compare products and prices to make the best purchase.

Introduction to Child Development (Semester Course)

This course is an introduction to the roles and responsibilities of care giving. Topics will include prenatal development and how to care for a newborn; meeting the developmental needs of a child, building positive caregiver-child relationships, and using positive guidance. Child development theories as a foundation for effective care giving will be evaluated. Activities include menu planning and snack preparation; and other child care oriented projects. After completing this course you should be able to:

- Describe the components of prenatal development and care (stages of prenatal development, nutritional needs during pregnancy, environmental and genetic factors that affect prenatal development, the process of delivery).
- Be able to explain the growth and development of infants, toddlers and preschoolers.
- Identify the characteristics of selected developmental theories.
- Understand the concepts and principles related to the physical, emotional, social, and cognitive development of children.
- Plan menus that appeal to children, promote good eating habits, and follow the guidelines for preparing foods for children.
- Differentiate between negative and positive methods of guidance for children.
- Discuss the responsibilities of childcare providers: safety hazards, accident prevention, emergency situations, child abuse and how to deal with it.

Foods for Healthy Living (Semester Course)

This course will assess the effect of nutrients on health, appearance, and peak performance including the impact of food and diet fads, food addictions, and eating disorders on wellness. Students will appraise sources of food and nutrition information, including food labels; apply dietary guidelines in planning to meet nutrition and wellness needs. Students will learn how to select, store, prepare, and serve nutritious and aesthetically pleasing foods. Students will gain hands on practical experience as

they prepare healthy foods and snacks, and learn to cook with less fat, sugar and sodium. After completing this course, you should be able to:

- Practice correct food and kitchen safety rules.
- Interpret the dietary guidelines and/or MyPlate.gov.
- Discuss and analyze basic nutrition information.
- Describe a healthy diet and food choices, and explain why such choices will help prevent health problems.
- Prepare foods following the dietary guidelines and MyPlate.gov.
- Discuss the role of diet in causing and preventing various diseases.
- Distinguish sound nutritional information from unreliable nutritional information.

Introduction to Teen Issues (Semester Course)

This course helps students understand and cope with personal, family, and social challenges. Emphasis is placed on communication, decision-making skills, and building stable relationships with family and peers. The course enables students to implement positive coping mechanisms and promotes understanding of self. It addresses issues that impact teenagers; self-concept, family and peer relationships, substance abuse, personal loss, dating and teen pregnancy, and child abuse. Emphasis is placed on students taking personal responsibility for life. After completing this course, you should be able to:

- Identify skills needed to develop and strengthen interpersonal relationships.
- Describe the importance of families and the role you play in your family.
- Explain the importance and benefits of group associations: how a group might positively or negatively influence a teenager's life, peer pressure, gang membership.
- Discuss values, goals, decision-making and personal responsibility.
- Specify ways individuals can handle challenging times; positive and negative methods and personal choices that accompany each challenge.
- Examine the elements of infatuation and love.
- Explain why teenagers are not ready for parenthood.

Art



Art (Year Course)

This elective course is for ninth grade students who have a genuine interest in art, have self-discipline, and are able to work in an in-depth studio situation with peers and a mentor. The course offers students a comprehensive art experience with detailed explorations in drawing, painting, design, and sculpture. In addition to gaining confidence and proficiency in working with a variety of media, students will learn about the history, analysis, and interpretation of art. Student's direct observation, imagination, and personal experience will be the basis for solutions to artistic problems. Upon completion of this course, students will have explored the four major components of art education:

- Art Production- creating art.
- Art Criticism – responding to and making judgments about the properties and qualities that exist in visual forms

- Art History – acquiring knowledge about the contributions artists and art make to culture and society.
- Art Aesthetics – understanding the nature, meaning, and value of art.

Introduction to 3D Art (Semester Course)

In this course, students will explore various techniques in sculpture and ceramics to create three-dimensional art. Foam core, metal wire, plaster, carving foam, paper-mache, and found objects are just some of the various materials that will be used to create sculptures. Students will also explore the basic techniques of hand-built pottery as they create both functional and sculptural ceramic forms. This is a “hands on” course that will allow students to create a number of ceramic pieces, sculptures, constructions, and assemblages. Upon completion of this course, students will be able to:

- Create three-dimensional forms using additive and subtractive techniques.
- Know and use vocabulary terms related to three-dimensional art.
- Demonstrate creativity with three-dimensional materials.
- Identify functional and sculptural forms in art.
- Recognize important sculptors throughout art history.

Introduction to Printmaking (Semester Course)

This course deals with the printmaking process as it relates to the visual arts. Students will be using an exciting assortment of materials, tools, and surfaces to create unique printed works of art. Emphasis will be on basic printing techniques such as stenciling, mono-printing, and block printing. Students will experience and learn about the benefits of creating multiple copies of an artwork. Upon completion of this course, students will be able to:

- Employ the use of the elements and principles of design to create printed works of art.
- Know and use vocabulary terms related to printmaking.
- Utilize various printmaking media to demonstrate an understanding of the printmaking process.
- Recognize important printmakers throughout art history.

Art in Public Spaces (Semester Course)

This course offers students an opportunity to investigate and create a variety of public artworks in a collaborative studio setting. Students will complete a group mural project designed for a specific site within the school building. In addition, students will explore the work of contemporary artists and apply contemporary processes and ways of thinking into creating individual and collaborative installation and social engagement pieces. Students will also learn the importance of documenting their work through the use of visual journal, photographs, and video. Upon completion of this course, students will be able to:

- Identify a variety of public artworks and the various roles they demonstrate in art.
- Improve upon artistic skills and techniques that include but are not limited to design, drawing, painting, and sculpture techniques.
- Apply contemporary art processes and ways of thinking into the creation of their work.

String Ensemble (Year Course)

Students in this elective must have an interest and ability in playing the violin, viola, cello, bass, or harp. Prior experience in the orchestra program at the elementary or junior high level is preferred, but not necessary. This course offers students a comprehensive experience orchestral music through performance at concerts and community events. Students will explore various music genres, sight, reading, the reading and comprehension of basic notation and musical interpretation. Students will be required to attend after school rehearsals and performances. Upon completion of the course, the students will be able to:

- Play with proper techniques including posture, technique, articulation, dynamics, pitch, and tone production.
- Play a variety of styles of music.
- Know and use musical terminology as it relates to the music performance.
- Play basic to intermediate level melodic passages on sight.
- Perform with the orchestra in several concerts and community events.
- Understand the contribution music makes to society and culture.

Performing Arts



Dramatics (Year Course)

This performance-based elective course will introduce students to all aspects of theater, including the art of acting and technical theater. Participation is required in this class; therefore, students must be willing to perform in front of an audience.

A variety of performance activities will be used, including:

- Pantomime.
- Reader's theater.
- Puppetry.
- Slam poetry.
- Acting.
- Improvisation.

Students will polish their theater knowledge through activities that guide their learning about:

- Character development.
- Voice impression.
- Stage terminology.
- Scriptwriting.
- Ensemble work.
- Theater history.

A study of musical theater complements the course through the introduction of basic theory of technical theater including:

- Costume design.

- Stage makeup.
- Stage lighting.
- Sound.
- Set and prop construction.
- Publicity.

Other

Physical Education (Semester Mandatory



Course)

Physical Education class is required of all students. Students participate in a planned semester physical education program. The planned program consists of physical fitness evaluation, lifetime and recreational activities, individual and team sports, and aerobic and cardiovascular conditioning. This three-year program is designed to give each student a competency level for future use and an interest that can be fostered throughout life. Upon completion of this course, the students will be able to:

- Demonstrate knowledge of safety procedures and respect the importance of safety in all activities.
- Demonstrate knowledge of rules, information, and strategies in various activities, which will better enable participation in each activity.
- Develop basic skill levels to facilitate participation in each activity.
- Acquire the ability and knowledge to assess individual physical fitness level and take part in various activities that enhance physical fitness, wellness, and cardiovascular capacity.
- Demonstrate social skills required to work effectively within a group and for the benefit of the group as a whole.
- Demonstrate the appreciation of the rewards received by participation in competitive activities.
- Demonstrate the ability to apply physical education to life.

Art 9 (9-Week Course) Mandatory

This nine week course will expand upon what students learned in eighth grade art. Students will work with a variety of media to produce drawings, paintings, designs, and sculptures. The media is explored through hands-on projects, exercises, sketching/journaling, homework, and quizzes. Students will be encouraged to use their own personal expression to explore thoughts and feelings through the creation of artistic works. Historic and contemporary artists' works will be incorporated into the lessons to broaden students' understanding of the larger impact art has made on shaping cultures. Upon completion of the course, students will be able to:

- Employ the elements and principles of design to create artworks.
- Know and use vocabulary related to visual art.
- Use a variety of artistic media, methods, and techniques.
- Critique and respond to historic and contemporary works of art.
- Understand the contribution art makes to society and culture.

Music (9 Week Course) Mandatory

The ninth grade general music course is a nine-week course designed to develop, improve, and expand knowledge of music as presented in Music 8. This course reinforces the elements of music through critical and aesthetic music listening tasks. Students will achieve a deeper understanding of melodic structure in learning to play and write basic chord progressions for the acoustic guitar. Students will explore American Musical Theater and its place in our culture. Upon completion of the course, the student will be able to:

- Critique two versions of a piece of music, citing how differences in the musical elements change their interpretation.
- Play basic chord progressions on an acoustic guitar.
- Present and perform an original composition in writing and on the guitar.
- Critique a modern musical play with regard to the effectiveness of the music in enhancing character development and plot.
- Understand the contribution music makes to society and culture.

Algebra 1 Intervention (Semester Course)

This course was created as a remediation course for students that were unsuccessful obtaining a proficient rating on the Algebra I Keystone exam. Data from the students' Keystone scores is analyzed and topics of need are identified. These topics are the focus of the instruction for the course. An online Keystone Prep Course is used to focus on the needs of each individual student. Upon completion of the course, the student will be able to:

- Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute value to solve problems.
- Compare and/or order any real number and simplify square roots.
- Solve all types of polynomial expressions.
- Factor and simplify/reduce algebraic expressions, including difference of squares and trinomials.
- Write, solve and graph linear and compound inequalities.
- Interpret solutions to problems in the context of the problem situation.
- Write, solve and graph systems of linear equations and inequalities.
- Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically.
- Translate from one representation of a linear function to another.
- Identify, describe, and/or use constant rates of change and apply the concepts of linear rate of change to solve problems.
- Write or identify a linear equation when given the graph of a line, two points on the line, or the slope and a point on the line.
- Estimate or calculate to make predictions based on circle, line, or bar graph, measures of central tendency, or other representations.
- Analyze data, make predictions, and/or answer questions based on displayed data.
- Find probabilities for compound events and represent as a fraction, decimal or percent.