

8th Grade Course Guide

REQUIRED CORE CLASSES

Language Arts

Through book clubs, independent reading projects, and in class reading instruction, students study a variety of literary genres with assignments tailored to develop essential reading, communication, and thinking skills. Multiple formal writing assignments, ranging from creative poems, essays, and formal argumentative writing, are completed throughout the year. Writing workshop allows students to work towards meeting both common and individual goals. Grammar and vocabulary elements are studied separately as well as integrated into students' writing.

Science

In this 8th grade science class students will:

- Illustrate the constructive and destructive forces that cycle and distribute Earth's rocky material on the surface at varying rates over time.
- Relate the internal structure and processes of Earth to the movements of plates on the surface and illustrates multiple pieces of evidence that supports these changes.
- Illustrates the changes in the particle motion of matter under varying amounts of thermal energy through the evaluation of a student generated investigation.
- Differentiate between kinetic, potential, and electromagnetic forms of energy acting a varying distances.
- Use mathematical representations to describe the properties of waves (electromagnetic, sound, digital and analog) and illustrates the behaviors of reflection, absorption, and transmission through various materials.
- Relate the different genetic variations and mutations that may occur through sexual and asexual reproduction to subsequent protein changes that affect species survival or desirability.
- Evaluate fossil evidence to establish evolutionary relationships of the changes in biodiversity over time.

Social Studies

8th Grade Social Studies focuses on American History from the pre-colonial settlement through the Civil War. An emphasis is placed on historical events during the time period, America's cultural diversity, the basis of a democratic society, and recognizing the need to study the past and relate it to the present.

Basic Algebra

This course covers material from the first semester of Algebra I, in addition to an emphasis on problem solving, building number sense, and foundational math skills.

- Use order of operations to evaluate phrases and perform the four basic operations with rational numbers
- Solve, graph, write and model with linear equations and inequalities

Algebra I

This course is designed as a college preparatory course to continued studies in mathematics and science. Areas of study include solving linear equations and inequalities, quadratic equations, and systems of equations using the real numbers, graphing (both on a number line and in a coordinate plane), factoring, working with functions, as well as problem-solving.

The student will:

- Use order of operations to evaluate phrases and perform the four basic operations with rational numbers
- Solve, graph, write and model with linear equations and inequalities
- Solve systems of linear equations
- Use proportions and systems of equations to solve word and numeric problems
- Explore and Apply Properties of Exponents and Exponential Growth and Decay.
- Perform the four basic operations and factor polynomials and solve quadratic equations.
- Explore operations of radical expressions and simplification. Use these properties to solve with Pythagorean theorem.

Formal Geometry

Prerequisite: Algebra I

This course is designed for college-bound students who intend to enroll in Algebra II. It uses both planar and spatial objects to develop deep understanding of geometric relationships and logic. Students are given frequent opportunities to use definitions, postulates and theorems to formulate proofs of relationships studied in class.

The student will:

- Use coordinate geometry to find midpoints and lengths of segments, slopes of lines, and perform transformations of geometric objects
- Use analog (compass & straightedge) and digital (GeoGebra) tools to perform basic construction techniques
- Recognize and apply postulates, theorems, definitions and algebraic techniques to find segment lengths and angle measurements in geometric shapes, including similar/congruent triangles and quadrilaterals
- Find measures of angles, arcs and segments involving circles
- Find areas, circumferences and perimeters of various planar figures and volume and surface area of solids
- Organize theorems, postulates and definitions into logical sequential proofs of geometric relationships

Algebra II

Prerequisite: Formal Geometry

Algebra II enhances the problem-solving process started in Algebra I by continuing to develop the basic and advanced properties of functions and algebra. Algebra II gives students the opportunity to model real data by understanding and applying the algebraic concepts of equations and inequalities, regression equations, basic relations and functions, polynomials, and exponential functions. Students in Algebra II are able to describe the world around them by utilizing estimation, technology, and graphing techniques. Algebra II is designed to meet part of the three-year entrance requirements for mathematics to most colleges. Algebra II provides a valuable background for those entering technical fields and also serves as a useful course for other college-bound students.

The student will:

- Solve linear equations and inequalities
- Graph and evaluate linear and absolute value equations and functions
- Use and analyze regression equations and models.
- Use systems of linear equations and inequalities to solve problems
- Solve and graph quadratic functions and inequalities
- Evaluate, graph, and solve polynomial equations and functions
- Simplify radical expressions and solve equations involving radicals
- Graph and solve exponential and logarithmic equations
- Simplify rational expressions and graph and solve rational functions and equations

REQUIRED SEMESTER CLASSES

Physical Education

At the beginning of each school year, students take a fitness test in the following areas to determine individual baseline scores: cardiovascular endurance, muscular strength, muscular endurance and flexibility. Students will be assessed 2 additional times. Students are assessed on their ability to maintain or improve their individual score, or meet the Waukee Standard. Daily 12 minute fitness stations and/or weekly ten minute jogs are designed to guide and progress students toward higher fitness levels throughout the year. A variety of team sports and individual sports/games are also offered. Basic skills are taught and lead up games or regular games follow. Activities may include: football, volleyball, tennis, lacrosse, dance, table tennis, pickleball, softball, hockey, basketball, track and field, ultimate kickball, steal the pins, ultimate Frisbee, and archery.

Health

Students will create a personal wellness plan based on the 7 dimensions of wellness, while utilizing community health resources. Students will study the characteristics of mentally healthy individuals, including topics such as maintaining healthy relationships, managing stress, and resisting negative peer pressure. Additionally, students will summarize physical and emotional changes of puberty, and identify factors that support sexual health.

ELECTIVE CLASSES

Music classes are yearlong

8th Grade Band

This course is a continuation of skills and techniques learned in 7th Grade Band. The course focuses on proper playing technique on a chosen band instrument, tone production, reading of music notation and symbols, music composition, and proper ensemble performance practice. Grades will be based on periodic performance assessments. These may include: scales, method book exercises, solo & ensemble literature, honor band audition material and concert music check-off. In addition to the regular band program, students will have the opportunity to participate in jazz band, honor band, and solo/ensemble contests.

8th Chorus

Enrollment is open to all Prairieview 8th grade students. Students will participate in a choral ensemble in which they will be learning techniques appropriate for the middle level learner. Students will have the opportunity to sing a variety of choral literature during the school year. Students will be involved in two or three formal performances in which they will celebrate their skills and talents with the community. Students will be assessed on the vocal music district standards throughout the course. There will be special events students may choose to participate in and/or honors choir they may choose to audition to be a member of.

Note: Students taking *both* band and chorus will be in band every other day and chorus on opposite days. Students in only band or chorus will be in those courses daily.

World language classes are yearlong

German I (High School Credit)

In German 1, students will develop the ability to communicate about themselves and the immediate world around them using simple sentences with basic structures. They will experience German through stories, songs and authentic activities. They will experience the culture of German-speaking people and learn about the products, practices and perspectives of the culture. Students also engage in holiday celebrations in relation to culture. In German 1, students become language learners in the areas of communication, culture, comparison, connection, and communities. This course is a prerequisite for German II, and is for high school credit.

Spanish I (High School Credit)

In Spanish I, students will develop the ability to communicate about themselves and their immediate environment using simple sentences containing basic language structures. Students will also become language learners in the areas of communication, culture, comparison, connection, and communities. This course will also allow students to develop a more complex vocabulary of the target language in order to communicate and explore themes of Personal and Family life, School Life, Emotions, body environment, and many more. This course is a prerequisite for Spanish II, and is for high school credit.

These electives are one semester long

8th Grade Art

Students will be creating works of art by advancing tool techniques and material manipulation skills. Students will be creating projects by combining multiple materials, using complex thinking and gaining a cultural awareness. Two-dimensional processes explored may include: drawing, painting, and printmaking. Sculptural works of art that will be created may include: wheel throwing, clay hand building, textiles, and jewelry making.

8th Grade Family and Consumer Sciences

This course provides students with an introduction to foods and nutrition. They will explore working in food labs to prepare a wide variety of foods that fit into the national nutritional recommendations. They will use appropriate recipe, meal planning, and safety skills. This course also includes a Basic Sewing Unit where students will be creating textile products with a sewing machine.

Automation and Robotics/Applied Engineering

Students trace and develop an understanding of the history and generations of automation and robotics. Students will acquire knowledge and skills in engineering problem solving by working in teams to solve design problems related to automated systems. They learn about structures, energy transfer, machine automation, and computer control systems in a variety of hands on problem solving activities.

Students apply the engineering design process along with math and science applications to solve a series of design problem activities. They will learn about following design constraints based on client specifications and then fabricate successful prototypes to be tested. Example units would include a “Rube Goldberg Design” and a Paper Roller Coaster System. These units promote communication and collaboration by emphasizing a teaming approach to solving problems.

Speech/Theater Tech

This class will provide students with opportunities to explore the world of theatre from the audience’s perspective by developing entertaining speeches, class activities, and creative technical theatre elements that will help an audience stay engaged and entertained throughout a performance.

The technical theatre part of the class will allow students to work on design elements in scene design, stage makeup, costuming, properties, and lighting. Students will also have the opportunity to explore specialty acting areas that could include stage combat, miming, and improvisation.

All information in the course guide is subject to change due to a variety of internal and external factors that may occur after the printing of this registration guide. Changes in personnel, federal and state requirements, and budgetary constraints are all factors that can force changes.