Nelson Middle School



2026-2027

Grade 8

Program of Studies

8TH Grade Core Classes

Mathematics 8

Grade 8 math lays the foundation for success in Algebra 1. Students will strengthen previously learned skills with a focus on the real number system, proportional reasoning, 3D shapes, transformations, right triangles, simplifying algebraic expressions, solving equations and inequalities, graphing linear functions, as well as solving contextual problems. In addition, students will expand their knowledge of the data cycle through collecting, analyzing, and interpreting data.

An end of course SOL assessment will be taken at the end of the year.

Algebra I

- ***High School Credited Class***

Students will make connections and build relationships between algebra and arithmetic, geometry, and probability and statistics. Standards require students to use algebra as a tool for representing and solving a variety of practical problems. Tables and graphs will be used to interpret algebraic expressions, equations, and inequalities and to analyze behaviors of functions. Graphing calculators, computers, and other appropriate technology tools will be used to assist in teaching and learning. Graphing utilities enhance the understanding of functions; they provide a powerful tool for solving and verifying solutions to equations and inequalities. Throughout the course, students will be encouraged to engage in discourse about mathematics with teachers and other students, use the language and symbols of mathematics in representations and communication, discuss problems and problem solving, and develop confidence in themselves as mathematics students.

Algebra I is a high school credited class. Successful completion of Algebra I prepares students for additional honors-level math courses, contingent upon instructor recommendation and meeting course requirements.

An end of course SOL assessment will be taken at the end of the year.

Geometry

- ***High School Credited Class***

This course focuses on developing reasoning skills through the exploration of geometric relationships. Students will study properties of geometric figures, trigonometric relationships, and mathematical proofs. The course emphasizes both two- and three-dimensional reasoning, coordinate and transformational geometry, and the use of geometric models to solve problems. Students will use algebraic skills, problem-solving techniques, and technology tools to visualize, analyze, and verify solutions.

Geometry is a high school credited class. The prerequisite for Geometry is Algebra I. Successful completion of Geometry prepares students for additional honors-level math courses, contingent upon instructor recommendation and meeting course requirements.

An end of course SOL assessment will be taken at the end of the year.

Language Arts 8

English Language Arts 8 is designed to engage students in knowledge and comprehension skills by reading a range of challenging, content-rich texts which will prepare them for high school-level literacy. Throughout the course, students will explore a wide variety of literary and informational texts, with a focus on complex text sets. Instruction will integrate reading comprehension, writing, vocabulary acquisition, and grammar usage to deepen understanding and proficiency. Students will plan, draft, revise, and edit across multiple writing modes, including narrative, expository, persuasive, and reflective compositions in response to what they are reading. Key areas of focus will include developing a clear thesis, organizing ideas effectively, providing supporting evidence, and using transitions to connect individual and text concepts and ideas coherently in multiple paragraphs. Eighth-grade students will also engage in thoughtful, reflective participation during small group and classroom discussions, building their communication and critical thinking skills. In 8th grade, students will develop effective oral communication and collaboration skills to build a community of learners that process, understand, and interpret content together.

An end of course SOL assessment will be taken at the end of the year. This includes the Reading SOL and the Integrated Reading and Writing Component.

Advanced English 8

This course is designed for eighth-grade students who demonstrate advanced skills in language arts and are prepared for a rigorous curriculum. The course emphasizes critical reading, analytical thinking, and advanced writing techniques, including expository, persuasive, and narrative writing. Students will engage in extensive independent reading and explore complex literary and informational texts. Formal grammar instruction, research skills, and project-based learning are integral components of the course. Students must meet minimum requirements and receive a teacher recommendation to be eligible for this course.

Successful completion of Advanced English 8 prepares students to pursue honors-level English courses in high school, contingent upon instructor recommendation and meeting course requirements.

An end of course SOL assessment will be taken at the end of the year. This includes the Reading SOL and the Integrated Reading and Writing Component.

Science 8

Grade 8 Physical Science stresses an in-depth understanding of the nature and structure of matter and the characteristics of energy. Major areas covered by the standards include the particle nature of matter, the organization and use of the periodic table; physical and chemical changes; energy transfer and transformations; properties of longitudinal and transverse waves; electricity and magnetism; and work, force, and motion. The Physical Science classroom builds on skills of systematic investigation with a clear focus on variables and repeated trials. Validating conclusions with evidence and data becomes increasingly important at this level. Mathematics, computational thinking, and experience in the engineering design process gain importance as students advance in their scientific thinking. *(Virginia Department of Education, Standards of Learning, 2025).*

An end of course SOL assessment will be taken at the end of the year. This assessment includes standards testing from Grade 6, Life Science, and Physical Science.

Advanced Science 8

This course is designed for eighth-grade students with advanced skills in science and a strong interest in exploring physical science concepts. The curriculum focuses on in-depth investigations of matter, energy, forces, and motion, as well as the application of these principles to real-world phenomena. Students will also review essential topics from sixth-grade Earth science and seventh-grade life science in preparation for the Grade 8 Science Standards of Learning (SOL) assessment. The course emphasizes critical thinking, scientific inquiry, and problem-solving skills through hands-on experiments, independent research, and collaborative projects. Students must meet minimum requirements and receive a teacher recommendation to be eligible for this course.

Successful completion of Advanced Science 8 prepares students for high school honors-level science courses, contingent upon instructor recommendation and meeting course requirements.

An end of course SOL assessment will be taken at the end of the year.

World Geography

- ***High School Credited Class***

This course focuses on the study of the world's people, places, and environments with historical emphasis on Asia, Latin America, Africa, and the Middle East. The knowledge, skills, and perspectives of the course are centered on the world's population and cultural characteristics, its countries and regions, landforms and climates, natural resources and natural hazards, economic and political systems, and migration and settlement patterns. Spatial concepts of geography will be linked to chronological concepts of history to set a framework for studying human interactions. The course will emphasize how people in various cultures influence and are influenced by their physical and ecological environments. Using texts, maps, globes, graphs, pictures, stories, diagrams, charts, and a variety of geographic, inquiry/research, and technology skills, students consider the relationships between people and places while asking and answering geographic questions.

An end of course SOL assessment will be taken at the end of the year.

Health/PE 8

Students in grade eight have an understanding of the origins and causes of diseases, including the relationship between family history and certain health risks. They begin to relate short- and long-term consequences of health choices and apply health skills to specific personal, family, and community health concerns. Students can discern relationships among all components of health and wellness and knowledgeably use consumer information.

Students in grade eight demonstrate competence in skillful movement in modified, dynamic game/sport situations and in a variety of rhythmic and recreational activities. They transition from modified versions of movement forms to more complex applications across all types of activities. Students demonstrate the ability to assume responsibility for guiding their own learning as they apply their knowledge and abilities to create a practice plan to improve performance in a selected game/sport, dance, or recreational pursuit. They demonstrate mature responsibility as they show respect for others, make reasoned and appropriate choices, resist negative peer pressure, and exhibit fair play. Students are able to set goals, track progress, and participate in physical activities to improve health-related fitness.

8TH Grade Elective Classes

High School Credited Elective Options

Eighth grade "high school credited" elective classes are yearlong. Agricultural Science, Art I, Digital Visualization, Entrepreneurship, Nutrition and Wellness, and Spanish I are each worth one (1) high school credit. Students' grades in these classes will be reflected on their high school transcripts.

Nutrition and Wellness (8229)

- ***High School Credited Class***

Students enrolled in Nutrition and Wellness focus on understanding wellness, investigating principles of nutrition, using science and technology in food management, ensuring food safety, planning menus and preparing food, and exploring careers in the field of nutrition and wellness.

Agricultural Science (8006)

- ***High School Credited Class***

This course is designed to develop competencies in each of the career pathways as they pertain to agricultural education, including the areas of Virginia's agriculture industry; the global scope of agriculture; scientific research concepts in plant, animal, and food science; principles of leadership and opportunities within student organizations; agribusiness and Supervised Agricultural Experience program opportunities; agricultural skills and safety in power, structural, and technical systems; and natural resources and environmental systems. These students build a footstool and shoe scrape.

Art I (9120)

- ***High School Credited Class***

This art class is an advanced course for students who are highly motivated in art and have the desire to possibly continue art in high school. Students will be able to use the "Art Making" processes to communicate ideas and personal life experiences. Projects will vary from paintings, observational drawings, clay works, weaving, paper works, wire, sculpture, art graphics, colored pencil, and many other mediums. Students will be expected to maintain a Portfolio, sketchbook and do one research assignment. An emphasis in the development of the ability to recognize visual arts content, art concepts, graphic art, and art in technology will be encouraged. Much of this will be done through planning, reflecting, discussing, refining, describing, analyzing, interpreting and judging works of art.

Digital Visualizations (8402)

- ***High School Credited Class***

Students gain experiences related to computer animation by using graphics and design concepts. Students solve problems involving 3D object manipulation, storyboarding, texturing/mapping, lighting concepts, and environmental geometry. Students create a variety of animations that reflect real-world applications and are introduced to interactive and 3D animation software. Production of portfolio showcasing examples of original student work is included.

Entrepreneurship (9093)

- ***High School Credited Class***

This course introduces students to the exciting world of creating, owning and launching their own business. Students will learn concepts and techniques for planning an innovative business and living the entrepreneurial lifestyle.

Spanish I (5510A)

- ***High School Credited Class***

In this introductory course, we practice mastering the four language skills of reading, writing, speaking and listening. We focus on: basic grammar, mechanics, and vocabulary to describe and communicate in the classroom, home, and community; critical thinking through activities and projects, via our textbook, libraries, and online research and; the cultural perspectives of the Spanish language, including its impact, geography, history and daily life in Spanish-speaking countries – including within the United States!

A/B Elective Options

Students will also select 8th-grade elective courses, which will not count for high school credit. These electives will meet every other day, alternating with Health & PE. Students have two options:

- **Choose two semester-long elective classes from the options below.**
- **Choose one year-long elective class, such as Yearbook, Band, or Chorus.**

Reading Plus and Math Plus courses meet every other day. These courses will be required for one semester or the year, depending on student academic progress and assessment results. Enrollment in these courses is required for students who are below grade level in reading and/or math.

Chorus 8 (year-long)

Students interested in singing and music. Mr. Kershner is looking for responsible and hard-working students to join the Eighth Grade Chorus. In this class you will learn to sing many styles of music in harmony and the basics of reading music. Sign up and be part of our musical team!

Band 8 (year-long)

The eighth grade band builds on the seventh grade band experiences. Students perform literature requiring a higher skill level and help select their concert music. They are eligible to participate in the NCHS Marching Band.

NMS Yearbook (year-long)

This class produces the NMS yearbook. Students are provided experience in computer design, journalism skills, yearbook thematic development, photography and editorial decisions, and making contacts within the business community. This class meets both semesters during the scheduled class time and during out-of school hours when necessary.

Agriculture Science 8 (1 semester class)

Students expand on agricultural topics such as plant science, food science, animal science, and shop safety. Once students have passed the safety quizzes, they will move into the shop to build a paper tray. Each student will also expand on their SAE (Supervised Agriculture Experience) project as part of the class.

Art 8 (1 semester class)

Students will continue from Art 7, but will advance into learning more about art careers, diving deeper into *The 6 Principles Of Design*. Students at this level will be expected to do two independent art assignments, as well as two 3D pieces. This course is designed for students who enjoy art, but will be delivered at a less intensive pace than Art 1. Essentially, this class is an advanced version of Art 7.

Family and Consumer Sciences 8 (1 semester class)

Students in FACS 8 will continue to build on knowledge and skills acquired in Family and Community Sciences Exploratory I and II to lead better lives, be career-ready, build strong families, and make meaningful contributions to their communities. Students will participate in career and technical student organization (CTSO) activities that will develop leadership, interpersonal, and career skills. Students will participate in Work Based Learning projects that will provide experiential learning opportunities related to students' career goals and/or interests.

Technology 8 (1 semester class)

Students will experience the problems and opportunities of our increasingly technological society. The class will provide hands-on learning to explore technologies and the systems of which they are composed. They also explore technology-oriented careers and project-based learning to explore technological systems. Contextual instruction and student participation in co-curricular career and technical student organization (CTSO) activities will develop leadership, interpersonal, and career skills. High-quality work-based learning (HQWBL) will provide experiential learning

opportunities related to students' career goals and/or interests, integrated with instruction, and performed in partnership with local businesses and organizations.

<u>Reading Plus</u> (1 Semester Class or year-long)

This is an intensive reading course designed to help middle school students strengthen their reading, writing, and critical thinking skills. Emphasis is placed on improving reading comprehension, vocabulary development, and literary analysis through targeted instruction and practice. Various reading programs and assessments will be utilized to track progress and provide individualized support throughout the course.

In addition to enhancing foundational reading skills, students will develop their ability to analyze texts and respond through writing, preparing them for success on the Virginia Reading Standards of Learning (SOL) in their English classes. This course provides a solid foundation for continued success in grade-level English classes and beyond. ***Students who are in need of additional support will be enrolled in this course based on SOL scores, assessment data, and/or teacher recommendation.***

<u>Math Plus</u> (1 Semester Class or year-long)

Math Plus is designed to support middle school students in strengthening their understanding of and mastery of foundational math skills while providing targeted remediation. This course is designed to be taken in conjunction with Math 8. Math Plus focuses on enhancing fundamental math skills and prepares students for success in grade-level math courses. ***Students who are in need of additional foundational support will be enrolled in this course based on SOL scores, assessment data, and/or teacher recommendation.***