

Eighth Grade Curriculum

The middle school years mark a transformative period in a child's development, second only to the rapid growth experienced from birth to age two. These years are filled with significant milestones, including the introduction of multiple teachers, navigating class transitions, and taking on greater responsibility for learning and homework.

To ensure a smooth transition and meaningful growth during this critical time, our dedicated teachers, administrators, and support staff work together to create a safe, supportive, and stimulating school environment. Our middle school educators are specialists in teaching young adolescents, employing research-based instructional strategies to meet the unique needs of this age group. They provide rigorous and engaging learning opportunities and utilize diverse assessment methods to empower students to demonstrate their understanding and skills in varied ways.

In partnership with students and their families, we strive to provide rich, meaningful educational experiences that foster academic achievement, personal growth, and the core values of the Newington Public Schools Mission Statement.

This document outlines the journey students take through the middle school years, spanning grades 5 through 8. Grounded in State and National Standards, the curriculum offers a comprehensive, diverse, and challenging program that addresses the learning needs of all students. It articulates, by content area and grade level, the key concepts students will understand and the skills they will develop as a result of their learning.

As you explore this curriculum overview, we invite you to approach it "through the eyes of the learner," envisioning how high expectations and dynamic learning experiences come together to support the growth and success of every student.

Language Arts

In eighth grade, students engage in increasingly sophisticated reading and writing experiences through a workshop model that encourages independence, reflection, and critical thinking. They analyze how authors use literary devices such as symbolism and imagery to convey deeper meaning and consider how historical and cultural contexts influence a text's message. Students synthesize themes and arguments across multiple sources, learning to evaluate the reliability of information and distinguish fact from opinion. In writing, they craft well-structured literary analyses, research-based essays, and arguments that address counterclaims and varied perspectives. Narrative writing emphasizes pacing, tension, and resolution, while regular opportunities for revision and self-assessment help students develop voice, set goals, and take ownership of their growth as writers.

CONCEPTS

Students will know and understand that:

- Symbolism, imagery, and literary devices convey deeper meanings.
- Historical and cultural contexts shape texts and their meanings.
- Themes and arguments can be synthesized across multiple sources.
- Strong arguments consider counterarguments and multiple perspectives.
- Effective narratives have sophisticated pacing and resolution.
- Reflection on writing improves growth and goal-setting.

SKILLS

As a result of what students know and understand, they will:

- Analyze symbolism, imagery, and literary devices.
 - Evaluate the reliability of sources and distinguish fact from opinion.
 - Analyze relationships among ideas in informational texts.
 - Synthesize and compare ideas across texts.
 - Build independent reading habits with challenging texts.
 - Write literary essays, research-based essays, and complex argumentative pieces.
 - Craft narratives with tension and resolution.
 - Revise for style, organization, and voice.
 - Reflect on writing through goal-setting and portfolios.
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Math

The CCSS (Common Core State Standards) are organized into clusters of standards that are categorized as 'Major', 'Supporting', and 'Additional' in order to represent the emphasis on the content and to demonstrate the prioritization of some standards over others, resulting in greater focus in mathematics. Rather than racing to cover topics in a mile-wide, inch-deep curriculum, CCSS standards require us to significantly narrow and deepen the way time and energy are spent in the math classroom.

We focus deeply on the Major Work (Major Areas) of each grade so that students can gain strong foundations: solid conceptual understanding, a high degree of procedural skill and fluency, and the ability to apply the math they know to solve problems inside and outside the math classroom. Students should spend the large majority of their time on the major work of the grade. Supporting work, and, where appropriate, additional work, can engage students in the major work of the grade.

Major Work of Grade 8:

- Work with radical and integer exponents
- Understand the connections between proportional relationships, lines, and linear equations
- Analyze and solve linear equations and pairs of simultaneous linear equations
- Define, evaluate, and compare functions
- Use functions to model relationships between quantities
- Understand congruence and similarity using physical models, transparencies, or geometry software.
- Understand and apply the Pythagorean Theorem.

Supporting Work of Grade 8:

- Know that there are numbers that are not rational, and approximate them by rational numbers.

- Investigate patterns of association in bivariate data.

Additional Work of Grade 8:

- Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.
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Science

CONCEPTS

Students will know and understand that:

- Objects get damaged when they collide (contact forces)
- Sound makes objects move (sound waves)
- Magnets move objects without touching them (forces at a distance)
- There are patterns in what we see in the sky and space (Earth and space)
- Living things are different from one another (Genetics)
- Living things today are connected to things that lived long ago (natural selection & common ancestry)

SKILLS

As a result of what students know and understand, they will:

- Ask Questions and Define Problems
 - Develop and Use Models
 - Construct Explanations and Design Solutions
 - Use System and System Models to analyze phenomena
 - Plan and carry out investigations
 - Analyze and interpret data
 - Engage in argumentation
 - Obtain, evaluate, and communicate information
 - Use mathematics and computational thinking
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Social Studies

CONCEPTS

Students will know and understand:

- The events and developments that led to the establishment of colonies in the Americas and Asia
- The perspectives of both enslaved and free Black people through the historical sources they created
- The factors that influenced perspectives about national identity both during and, as a result of, the American Revolution
- Individual and group perspectives of the American Revolution are documented in historical records while identifying representation of marginalized voices
- the laws that institutionalized slavery in the colonial era and in the Constitution
- the origin, purpose, and impact of the founding documents
- the evolving powers and limits of the three branches of government as defined in the United States Constitution and subsequent federal court rulings, legislation, and executive action
- the perspectives, civic virtues, and democratic principles debated during the Constitutional

- Convention
- the ideas and principles within the Bill of Rights influence the social and political system in the United States
- ideas and principles about citizenship and access to political power expressed in founding documents influenced social and political systems in the early republic
- the relevance of democratic principles in shaping acts of dissent and resistance in early United States history
- whether the goals of the American Revolution, as stated in the Declaration of Independence, were realized in the U.S. Constitution

SKILLS

As a result of what students know and understand, they will be able to:

- explain multiple causes and effects of events and developments in the past
- organize relevant evidence into coherent arguments about the past
- analyze multiple factors that influenced the perspectives of people during historical eras
- analyze connections among events and developments in historical contexts
- analyze the purposes, implementation, and consequences of public policies in multiple settings
- write arguments focused on discipline-specific content
- engage effectively in a range of collaborative discussions with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- determine the kinds of sources helpful in answering questions, taking into consideration multiple points of view.
- develop claims and counterclaims while pointing out the strengths and limitations of both.

Spanish/Italian

CONCEPTS

Students will know and understand that:

- cultural contexts, norms, and rules help us make connections and form relationships with others
- the location of cities and countries impacts the weather and times of those places
- the definition of family differs from culture to culture
- a person's family, culture, celebrations, and personal likes and dislikes help form their personal identity
- students around the world share similar schooling experiences although differences exist due to geography, resources, and culture
- a society's values and natural resources influence norms at meal time
- the development of healthy habits begins early and requires daily decision-making and reflection
- etiquette is highly valued in all cultures and rules of etiquette vary from culture
- where and how we live influence who we are and how we relate to one another

SKILLS

As a result of what students know and understand, they will:

- respond to greetings/farewells
- use appropriate gestures, when necessary, to make their messages comprehensible

- ask introductory questions and respond accordingly
- exchange basic information related to birthdays, days of the week, months of the year, time, and seasons, their families, meal preferences, their school, their home life, and personal events both past and present
- express likes and dislikes regarding various people, objects, categories and events present in their everyday environments
- express agreement and disagreement
- compare/contrast families and personal likes/dislikes
- compare and contrast school schedules.
- describe foods, beverages and mealtimes
- describe favorite healthy activities
- identify places in the community
- express activities to be completed in the future
- acquire goods/and or services through basic negotiations.
- identify household items and rooms in house

ENCORE CLASSES

CONCEPTS

Students will know and understand that: In order to be well rounded, it is essential to engage in learning experiences in the areas of art, STEM, music, wellness, and instructional technology.

SKILLS

As a result of what students know and understand, they will be able to: Demonstrate their learning through projects, activities, discussions and performances in the Essentials classes.

STEM

S.T.E.M. education is an interdisciplinary approach to learning where rigorous academic concepts are coupled with real-world lessons as students apply science, technology, engineering, and mathematics in contexts that make connections between school, community, work, and the global enterprise enabling the development of STEM literacy and with it the ability to compete in the new economy.

In Grade Eight, students will study robotics using the LEGO LabView for MINDSTORMS. Using this programming language, students will be able to program the NXT using a graphical programming environment. LabVIEW for LEGO MINDSTORMS NXT by Michael Gasperi, illustrates through many detailed examples how to write programs that execute entirely on the NXT and that directly control the NXT using programs that run on a computer.

Art

The sixth-eighth grade art curriculum provides opportunities for students to broaden special art interests and continue the process of transforming personal experiences into art forms.

Eighth grade activities include:

- drawing
- ceramic sculpture design
- printmaking
- art criticism

The opening of the Town-wide Art Show is held the last week of April. The NPS Featured Artist Gallery collection showcases one selection of student work from each of Newington's seven schools. A copy of this artwork is hung for one year on the third floor of the Town Hall.

Wellness

A healthy body and mind maximize children's ability to learn. The Wellness experience centers on the development and wellness of the child. During all four years students prepare for and participate in the State Physical Fitness tests. Throwing and catching, kicking, striking, movement, and team building concepts are taught through team sports. These include volleyball, badminton, basketball, hockey, and team handball. Additional activities are educational gymnastics, archery, dance, lifetime activities and cooperative games. The Wellness program also empowers students with knowledge to make responsible decisions about their behaviors. This is done through the discussion of a variety of issues facing adolescents such as communicable diseases and substance abuse. Students will learn to keep a strong mind and healthy body through coping skills and suicide prevention, assessing personal risk and respecting self, and substance abuse prevention.

Music

All students participate in General Music each year. All students in grades 5-8 have the opportunity to participate in performing groups including chorus, band, and orchestra. Students in grade 8 who choose to participate in chorus, band, or orchestra meet one or two times per week during activity period. Small group instrumental lessons are available to students for ½ hour per week. Concerts throughout the year showcase the accomplishments of each ensemble.

The General Music curriculum seeks to develop within students a medium for self-expression and a life-long love of music.

Areas of study in eighth grade include:

- music theory and sight-reading skills
 - performance skills in guitar and keyboard
 - history of American popular music
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Educational Technology

Eighth graders will have a one 26-day cycle of educational technology. Students will continue to explore video production, however with a focus on the filming aspect. Along with the editing skills they acquired from seventh grade, students will utilize tripods, camera angles, lighting, and microphones to collaborate

on a short film as their final project. Eighth grade students will have the opportunity to take part in the Young Producers program allowing them to showcase their productions.