# 8th Grade Course Descriptions

## American History
Through the use of technology, a variety of in-class activities, hands-on learning opportunities, students will experience American History from Colonial America through the Civil War. There will be a particular focus on the events that took place in, as well as the contributions made by, Western Pennsylvania, and, in some cases, the Mon Valley itself. Learning and assessment will be geared towards the students’ individual abilities so that each student will be appropriately challenged and enabled to succeed.

## English/Language Arts
This course is designed to provide instruction in reading comprehension, writing and methods of inquiry as found in the core of grammar and mechanics. This course will focus on the processes, skills, and strategies for effective communication in all its forms, with an emphasis on various literary texts. The course prepares students for both Ninth Grade Academic and Honors English.

## Advanced English/Language Arts
A more challenging course than Eighth Grade Academic English/Language Arts, this class focuses on reading, writing, listening, speaking and viewing competencies which are integrated throughout students’ learning experiences. This course will serve as preparation for Ninth Grade Honors English. In order to be considered for a section of Advanced Eighth Grade English/Language Arts, students must have a final grade in Seventh Grade English/Language Arts of an A or B and must have scored Advanced on the ELA PSSA Test in the previous school year. Teacher recommendation is required.

## Science
This 8th grade science class follows an integrated approach in order to meet Pennsylvania State Science Standards. Units covered in 8th grade include: Engineering, Environmental Science, and Astronomy. A Science Fair Project is not a requirement for this class, but interested students may volunteer to complete a project. Students maintaining an A or B average in this 8th grade science class may qualify for advanced level science at the High School (dependent also upon 8th grade Algebra/Geometry grades).

## Accelerated Science
This 8th grade science class follows the same curriculum as the 8th Grade Science Class, but at an accelerated pace. We also complete a mandatory Science Fair Project in this class with an opportunity to attend the Pittsburgh Regional Science Fair. Taking this class will not affect courses offered to the students at the High School level and is NOT required to take advanced level sciences at the High School. Students maintaining an A or B average in this 8th grade science class may qualify for advanced level science at the High School (dependent also upon 8th grade Algebra/Geometry grades).

### Requirements to be in this class:
- 7th grade teacher recommendation
- An A average in 7th grade science.

## Future City Engineering Class (18 Weeks)
This flexible, cross-curricular educational program give the students an opportunity to do the things that engineers do: identify problems; brainstorm ideas; design solutions; test, retest and build; and share their results – all while designing a city from the ground up. With this at its center, Future City is an engaging way to build students’ 21st century skills. The culmination of the class will be the Future City Engineering competition held at the Carnegie Music Hall in Oakland in January. Students participating in Future City will: work with an engineer mentor from Bechtel Marine Propulsion Corporation once a week, apply math and science concepts to real-world issues, develop writing, public speaking, problem solving, and time management skills. Research and propose solutions to engineering challenges, Discover different types of engineering and explore careers options, learn how their communities work and become better citizens. Develop strong teamwork skills.

*Because of the limited space and demand for this course, you may be required to complete an assignment before the end of your 7th grade school year in order to help determine your placement in this course.*

## Forensic Science (6 Weeks)
This course is designed as a fun and exciting way to learn science and technology concepts in forensic science. Forensic science is the application of science when investigating criminal activity by police agencies in a criminal justice system. This scientific subject incorporates all facets of science, such as Biology, Chemistry, Physics, Entomology, Earth Science, Anatomy and Physiology. Major topics included in our course will be the history of forensics, observation skills, processing a crime scene, collecting and preserving evidence, identifying types of physical evidence, hair, fibers, DNA, fingerprints, and document/handwriting analysis. Note: Students in this course will be required to view photos of crime scenes and will analyze photos of bodies in various stages of decomposition.

### Prerequisites:
- Must have earned an A or B in 7th grade science.
- Students whose final grade is a C in 7th grade science will be accepted only with teacher recommendation.

*Because of the limited space and demand for this course, you may be required to complete an assignment before the end of your 7th grade school year in order to help determine your placement in this course.*
SeaPerch Naval Engineering (6 Weeks)

SeaPerch is an innovative underwater robotics program sponsored by the US Navy and Bechtel Marine Propulsion Corporation that equips teachers and students with the resources they need to build an underwater Remotely Operated Vehicle (ROV) in an in-school setting. Student teams will be provided with an engineering mentor from Bechtel twice a week to help students build the ROV from a kit comprised of low-cost, easily accessible parts, following a curriculum that teaches basic engineering and science concepts with a marine engineering theme. Their engineers will also help the teams to apply design modifications to the ROV to make it function better in the pool challenges. The SeaPerch Program provides students with the opportunity to learn about robotics, engineering, science, and mathematics (STEM).

Building a SeaPerch ROV teaches basic skills in ship and submarine design and encourages students to explore naval architecture and marine and ocean engineering principles. It also teaches basic science and engineering concepts and tool safety and technical procedures. Students learn important engineering and design skills and are exposed to all the exciting careers that are possible in naval architecture and naval, ocean, and marine engineering.

*You will be required to attend several after school or evening visits to the high school pool for testing of the vehicle and competition dates.*

*Because of the limited space and demand for this course, you may be required to complete an assignment before the end of your 7th grade school year in order to help determine your placement in this course.*

Applied Engineering Technologies

Students will dive deeper into Computer Aided Drafting and design in this course. Multi View Drawings will be emphasized leading to 3 dimensional computer generated drawing/designs utilizing SolidWorks CAD software. Students will design and print a keychain using the 3D printer. Manufacturing will also be explored within the woodshop. Students will manufacture a letter organizer and white board memo minder. While in the lab students will be using a variety of hand tools, wood working machines, laser engraver, and CNC router. Safety will be strongly emphasized.

STEM Research and Engineering

Students will explore civil engineering principles and create a truss bridge design. Photoshop computer software shall bring their bridge designs to life through STEM research and sketching phases. The structure will undergo live load testing and analysis of strength related variables. Data derived will be calculated and compared with other student's outcomes. Students will utilize computer software to generate a COLORFUL three-foot inspirational poster project that highlights personal loves as well as incorporate Photoshop skills and commands. Another lesson consists on a custom T-shirt logo design that reinforces digital computer graphics and ultimately results in a color printed “take-home” shirt. Lastly, a tangible basketball hoop project will be developed by students using the computer while incorporating previously learned skills.

Computer Concepts – Grade 8

The Beginning Ideas in Computer Science curriculum exposes students to the power of computer science and how it can be used to impact their lives. Students are given the opportunity to iterate and design creative solutions to problems instead of just working with paper and pencil. Students learn how to engage one another as they work collaboratively to apply their ideas with computation. The Beginning Ideas in Computer Science curriculum allows students to synthesize their natural curiosity and interests with the tools of computer science. Students will learn to use Sandbloqs as a programming tool, while focusing on creating computational artifacts.

Health

Students will develop an overall understanding of the Health Triangle and how each side relates to each other. Key Components: Stress Techniques, Mental Health, Drugs/Club Drugs, Std's/Abstinence

Physical Education

The Physical Education program provides each student with the opportunity to participate in a comprehensive and complete program consisting of skill development, lead up games, team sports, and physical fitness activities. The students receive instructions in rules, skills, and strategies associated with different sports as well as learning experiences involving physical conditioning activities. The students will also have opportunities to become involved in lifelong physical activities through individual sport units. The program promotes a spirit of cooperation, leadership, fair play and friendly competition.

Family & Consumer Science

Students in 8th grade will study reading of food nutritional labels and understand its components and shopping for food. Students will learn recipe and food preparation terms. They will apply safety and sanitation procedures during cooking labs.

Library/Study Skills

This course will help students improve their research skills and obtain the knowledge to navigate today’s digital resources.
Exploratory Spanish

West Mifflin School District bases its world language program on the National Standards for Foreign Language Learning using a standards-based curriculum incorporating communication, culture, connections, comparisons and communities. In Spanish Grades 7 & 8, students will continue to acquire proficiency in listening, speaking, reading and writing the Spanish language. Students will expand their vocabulary and skill usage by acquiring the fundamentals used in learning a second language.

Spanish I

In Spanish I, students will develop the basics in Spanish language. Four language skills will be emphasized: listening, speaking, reading and writing. Spanish I is designed to equip students with the necessary skills of "how to learn" a foreign language as well as introduce them to the Spanish language itself. This course is communicative in nature; students learn to use the language, not just the grammar in everyday situations. Through readings, audio/visual presentations, and group work, students learn to use Spanish to meet basic survival skills and needs. In the process, students will learn about themselves, their language, and various Spanish-speaking cultures throughout the world. Students at the Middle School must have an advanced or proficient on their ELA PSSA and have an A or B in English/Language Arts to qualify for this course.

8th Grade Music

8th grade music seeks to continue to expand upon the students’ horizons as far as musical taste and exposure gained in 7th grade music. Students will be provided hands-on experience with the technology in order to gain a first-hand understanding of the cutting-edge innovations that exist in the Music Technology realm. They will review musical notation and continue to build upon piano skills learned in 7th grade. They will be able to demonstrate how electronic music can be produced or recorded. They will research and develop ideas for musical creations, as well as design and compose their own musical pieces. Such music creation will be continue to be explored for the variety of purposes in which it can be heard today: live performance, recorded performance, as a soundtrack to videos footage, along with other inventive avenues.

Chorus 8

Eighth grade chorus takes the singing voice with some experience, as well as the novice voice, and develops choral methods appropriate to a junior high school level. This is an elective course which will meet and rehearse on a regular basis as part of the student’s daily schedule. The chorus will perform a mandatory holiday concert in December and a mandatory spring concert in May. Once the student enrolls in the class, he or she may drop the course only during the first 4 weeks of the school year.

Opportunities for participation in outside festivals will be offered.

Criteria for selection: Prior experience in a vocal ensemble and/or recommendation of the director.

Band 8

This class is open to any qualified* 8th grade student and meets daily for one forty-seven minute period and is taught by a music teacher with background in instrumental music. 8th Grade Band is designed to teach upper middle school band students a variety of music compositions and arrangements meant for preparing instrumentalists for high school band (and marching band). Students are graded on daily participation as well as varied performance opportunities such as evening concerts, one high school football game, and assemblies, community/school events, or adjudications as deemed appropriate by the director. Students are expected to play at a certain level to enter this course (new students should see “Incoming Requirements” or contact the band director before scheduling).

Orchestra 8

The middle school string orchestra class meets daily, and performs at least two public concerts per year. The ensembles perform orchestral music of varying styles & historic time periods: from the early baroque through modern day. In order to enroll, students must be able to play an orchestral string instrument up to their grade level, as determined by the instructor.

Academic Enrichment

If you do not choose the arts (Band, Chorus, Orchestra) they will be enrolled in the Academic Enrichment course. In Academic Enrichment, students will work to enrich their knowledge of Math and English.

Middle School Gifted ACE

Students receive accelerated instruction and opportunities in advanced content with particular consideration to student’s individual interests. Instruction is differentiated and curriculum designed to meet the needs of the gifted students. Curriculum design is inclusive of key core subject ideas while offering students enrichment opportunities in individual and teaming activities. To be enrolled in ACE, students must be tested by the school psychologist and meet gifted criteria.

CC Math 8

This is the third course in the sequence of secondary courses. This course contains PA Common Core assessment categories: Numbers and Operations, Algebraic Concepts, Geometry, and Measurement, Data and Probability.

Algebra I

The purpose of this course is to address both the Common Core Mathematics Standards and prepare students for the Keystone Algebra 1 Exam. This course fits into an overall program of mathematics studies and builds from what students have learned in previous mathematics courses as well as introducing more advanced topics. These advanced topics include understanding our number system, solving, graphing, and writing linear equations and inequalities, linear systems, exponents, quadratics, polynomials, factoring, simplifying square roots and data analysis. Students will take the PA Keystone Exam at the conclusion of this course. The Keystone Exam is a high school graduation requirement.
Accelerated Geometry

This course contains content defined by the Keystone Geometry course description. To qualify, students must have earned at least an 85% in Algebra 7, scored Advanced/Proficient on the PSSA exam, passed the Keystone Algebra 1 exam, and have teacher recommendation.

7th

* = Advanced PSSA Score, Advanced/Proficient Keystone Exam Score, 90% or higher class test scores, and Advanced iReady score. Meeting all requirements with the exception of passing the Keystone exam will result in supplemental instruction such as tutoring and/or an additional math class in order to continue to Geometry as long as the Keystone score is in the upper Basic range.

** = Basic/Below Basic Keystone/PSSA Score

Teacher Recommendation is required for all options.

8th

* = Advanced/Proficient PSSA Score (must be above the median Proficient score), Advanced iReady score, and teacher recommendation with 90% or higher class test scores.

** = Basic/Below Basic PSSA Score

These are the course pathways. Exceptions to the prerequisite can be made with the agreement of the administrator, math department, counselor, student, and parent. The Algebra aptitude test will be administered in May. CC = Common Core