2020-2021

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Middle School
Course Selection Guide
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**INTRODUCTION**

We are excited to offer our middle school parents and students the opportunity to begin making course selections for next school year. Please be sure to review the section of the course selection guide that relates to each student’s current grade level. For seventh-grade parents and students, please be sure to review the appropriate section of the guide based on the student’s current course schedule (currently taking Project Lead The Way – FS/EE or currently taking Pre-Algebra).

Please take advantage of the Course Selection Planning Sheet found on page 5 to assist you in making course selections for next year.

**CHALLENGE BY CHOICE**

The Smithtown Central School District’s educational program strives to provide all students with the fundamental academic skills and knowledge required for their maximum educational development and the opportunity to develop their interests and abilities to the fullest extent according to their potential.

The district’s Challenge by Choice initiative has been developed to assist our students in selecting courses that will help them to reach their highest potential. This course selection guide contains information on course offerings, specifying all prerequisites, difficulty levels, course content and course expectations. Students will receive departmental recommendations based on their academic record and current progress. Students interested in engaging in more challenging coursework by enrolling in accelerated course offerings and who have taken the prerequisite course(s) may make those selections during the scheduling session in the computer lab. Students are encouraged to discuss their interest in taking more challenging coursework with their current classroom teacher, parents/guardians and school counselor.

Once a student has made his/her course selection(s), there is no guarantee that a future request for a course change can be accommodated.

We encourage students to pursue excellence and rigorous academic experiences. Should you have additional questions regarding course selections or program expectations, please remember that teachers, counselors, building administrators and departmental administrators are available to assist you.

**PREREQUISITES AND DEPARTMENTAL RECOMMENDATIONS**

To guide students in making course selections, each course in the program guide includes any prerequisites. Prerequisite courses must be completed to gain entrance into a course.

In addition to any prerequisites, some courses may include a co-requisite. Courses listed as co-requisites must be taken concurrently with the desired course.

Departmental recommendations are intended to provide guidance to both parents and students as they consider enrolling in challenging coursework.
Parents and students are encouraged to use this planning sheet when making course selections for next year.

### GRADE 6 STUDENTS

**STEM (select one):**

- [ ] Pre-Algebra
- [ ] PLTW-FS/EE

**World Language (first choice – select one):**

- [ ] French
- [ ] German
- [ ] Italian
- [ ] Spanish

**World Language (second choice – select one):**

- [ ] French
- [ ] German
- [ ] Italian
- [ ] Spanish

### GRADE 7 STUDENTS ENROLLED IN PLTW-FS/EE

**PLTW (select one):**

- [ ] PLTW-AC/MD
- [ ] PLTW-GA/ME

### GRADE 7 STUDENTS ENROLLED IN PRE-ALGEBRA

**Mathematics (select one):**

- [ ] Algebra 1
- [ ] Math 8

**Science (select one):**

- [ ] Biology
  
  (must select Algebra 1)
- [ ] Science 8

**For students who select Science 8 only:**

**PLTW (select one):**

- [ ] PLTW-AC/MD
- [ ] PLTW-GA/ME
Students will make a course selection in two areas for seventh grade:

1) STEM (Science, Technology, Engineering and Mathematics)
   - Pre-Algebra
   - Project Lead the Way – FS/EE
     (Flight and Space/Energy and the Environment)

   In the area of STEM students will receive a departmental recommendation from their current math teacher for either Pre-Algebra or PLTW based on the course where students may find the greatest level of success. Parents and students are encouraged to speak with their math teacher to help make the most informed selection possible.

2) World Language
   - French
   - German
   - Italian
   - Spanish

   In preparation for the language selection, students will receive presentations during the school day from our World Language teachers and Director of World Languages, ENL, and Library Media Services about the four language offerings. This decision is important as it results in at least a two-year commitment to the language. Students will make a first and second language choice. Students are not guaranteed their first language choice.

FREQUENTLY ASKED QUESTIONS
What are the high school graduation requirements for language?
   - Students who successfully pass the seventh- and eighth-grade language courses along with the FLACS A Assessment are granted one unit of high school credit, the minimum requirement for graduation.
   - Students who successfully complete three credits of a world language and pass the FLACS B Assessment meet the language criteria for a Regents Diploma with advanced designation.
   - Students with specific language disabilities listed on their IEP are exempt from the language requirement.

Is one language easier than the other?
   - No! Studying a language involves reviewing material each night and a considerable amount of time and dedication. Success may also be determined by natural talent, memory and listening ability. To a large extent, strategies and techniques can be learned to improve the language acquisition experience.

Once student course selections have been made, resources will be allocated and buildings will work to construct schedules that meet these requests. Therefore, all selections should be considered final and requests to change courses will not be honored.
PRE-ALGEBRA (MS3160)
Grade 7 - Full Year (Alternate Days)

Prerequisite: None

Students will focus on linear functions, polynomials and select topics in geometry. Pre-Algebra will be taken in addition to the regular Math 7 program that all seventh-grade students participate in. This is a rigorous course that investigates the topics necessary for successful participation in the accelerated mathematics course, Algebra 1, as eighth-graders. Completion of this course is a mandatory prerequisite for participation in Algebra 1 and Biology in eighth grade. All Smithtown students have the potential of reaching Introduction to Calculus by the end of their high school experience. Students who decide not to enroll in Pre-Algebra in seventh grade may also self-accelerate by taking two high school mathematics courses in one year (Algebra 1 with Geometry or Geometry with Algebra 2). Students also have the opportunity to engage in future honors and/or AP science courses even if they decide not to take advantage of Biology in eighth grade. To view the mathematics and science course pathways, please review the respective course flowcharts on pages 15 and 16.

PROJECT LEAD THE WAY – FS/EE (MS6355)
Grade 7 - Full Year (Alternate Days)

Prerequisite: None

Project Lead The Way is one of the nation’s leading providers of STEM programs. Students enrolling in the PLTW program will engage in two units: Flight and Space and Energy and the Environment. In the Flight and Space unit, the exciting world of aerospace comes alive. Students explore the science behind aeronautics and use their knowledge to design, prototype and test model rocket fuel and a glider. Custom-built simulation software allows students to experience space travel. In the Energy and the Environment unit, students are challenged to think big and look toward the future as they explore sustainable solutions to our energy needs and investigate the impact of energy on our lives and the world. Students design and model alternative energy sources and evaluate options for reducing energy consumption.
In all courses, listening, speaking, reading and writing skills are developed through a variety of activities that target both the language and the culture of the people who speak it. The seventh-grade language courses cover one-half of the Level 1/Checkpoint A curriculum. Students are granted one (1) unit of high school language credit, providing they pass the FLACS A assessment at the end of grade 8.

FRENCH 7 (MS5300)
Grade 7 - Full Year
Prerequisite: None
French is the official language in 29 countries and is spoken by one of our largest trading partners, Canada. Approximately 45 percent of English vocabulary comes from French.

GERMAN 7 (MS5200)
Grade 7 - Full Year
Prerequisite: None
German is spoken by more than 200 million people worldwide and is the official language of five countries. Germany has the largest economy in Western Europe. English is a Germanic language and more than 25 percent of U.S. citizens are able to trace their heritage back to a German-speaking country.

ITALIAN 7 (MS5100)
Grade 7 - Full Year
Prerequisite: None
Italy represents the eighth-largest economy in the world and fourth-largest in Europe. Italy is also a leader in culinary arts, interior design, fashion graphics design, furniture design, etc. Italian will open your mind to the world’s most famous artists and writers.

SPANISH 7 (MS5000)
Grade 7 - Full Year
Prerequisite: None
Spanish is spoken by more than 350 million people in 21 countries on four continents and is the second most-used language in international communications. Latin American countries are experiencing strong economic growth.
Students currently enrolled in the Project Lead The Way – FS/EE course will select one of two PLTW courses for eighth grade:

**Project Lead The Way**

- Project Lead The Way – AC/MD
  (App Creators/Medical Detectives)

  OR

- Project Lead the Way – GA/ME
  (Green Architecture/Magic of Electrons)

Parents and students are encouraged to speak about the two possible courses with their current PLTW teacher, mathematics teacher and/or science teacher to help make the most informed selection possible. *Students will select the course they are most interested in taking, but due to scheduling constraints, students may not receive their first choice.* Once student course selections have been made, resources will be allocated and buildings will work to construct schedules that meet these requests. *Therefore, this selection should be considered final and requests to change courses will not be honored.*
PROJECT LEAD THE WAY – AC/MD (MS6345)
Grade 8 - Full Year (Alternate Days)
Prerequisite: None
Students enrolling in this course will engage in two units: App Creators and Medical Detectives. Students in App Creators collaborate to create mobile apps that make a difference in people’s lives. With a gentle introduction to programming, students learn how to make computers work together to put designs into practice. The course aims to develop computational thinking and build student excitement for programming. In Medical Detectives, students play the role of real-life medical detectives as they analyze genetic testing results to diagnose disease and study DNA evidence found at a crime scene. Students solve medical mysteries through hands-on projects and labs, investigate how to measure and interpret vital signs, and learn how the systems of the human body work together to maintain health.

PROJECT LEAD THE WAY – GA/ME (MS6365)
Grade 8 - Full Year (Alternate Days)
Prerequisite: None
Students enrolling in this course will engage in two units: Green Architecture and Magic of Electrons. Students in Green Architecture learn how to apply the concept of green choices to the fields of architecture and construction by exploring dimensioning, measuring and architectural sustainability as they design affordable housing units using Autodesk Revit architectural software. Students in Magic of Electrons explore electricity through the creation of hands-on projects, such as electric motors and a Morse code device. In addition, with the use of SnapCircuits, students will explore current concepts used in modern electronics, such as the parts of atoms, behavior of atoms and sensing devices used in security systems and cell phones. Students learn knowledge and skills in basic circuitry design and examine the impact of electricity on the world around them.
Students currently enrolled in Pre-Algebra will make course selections in the following areas:

1) **Mathematics**
   - Algebra 1
   - Math 8

Students will receive a departmental recommendation for either Algebra 1 or Math 8 based on current progress in Pre-Algebra. Parents and students are encouraged to speak with their Pre-Algebra and Math 7 teacher(s) to help make the most informed selection possible.

2) **Science**
   - Biology (students must select Algebra 1 to enroll in this course)
   - Science 8

Students who select Science 8 will also select one of two Project Lead The Way courses. Students enrolling in Biology will have their lab portion on alternate days, so there will not be availability to select a PLTW course.

**Project Lead The Way**
- Project Lead The Way – AC/MD  
  (App Creators/Medical Detectives)
- Project Lead the Way – GA/ME  
  (Green Architecture/Magic of Electrons)

Students will select the PLTW course they are most interested in taking, but due to scheduling constraints, students may not receive their first choice.

Students will be receiving a departmental recommendation for either Biology or Science 8 based on the course students may find the greatest level of success in. Parents and students are encouraged to speak about the recommendation with their Science 7 teacher to help make the most informed selection possible. Students have the opportunity to engage in future honors and/or AP courses even if they decide not to take advantage of Biology in eighth grade. *Due to the linkage in content between science and mathematics in this course and future advanced science courses, students enrolling in Biology must also be enrolled in Algebra 1.*

Once student course selections have been made for mathematics and science, resources will be allocated and buildings will work to construct schedules that meet these requests. **Therefore, all selections should be considered final and requests to change courses will not be honored.**


**ALGEBRA 1 (HS3170)**  
**Grade 8 - Full Year**  
**Prerequisite:** Pre-Algebra  
This course is appropriate for students who have demonstrated success in both Math 7 and Pre-Algebra and can meet the demands of a rigorous course of study. The course content is aligned with the NYS Learning Standards for Algebra 1, the first course in the study of high school mathematics. This course is an accelerated offering as students will be engaging in ninth-grade coursework as eighth-graders. Students will take the Algebra 1 Regents examination at the end of the course, and it will count as one-ninth of the course grade. *Upon successful completion of the course, students will receive one high school math credit, and it will be the first math course to appear on the high school transcript.* All Smithtown students have the potential of reaching Introduction to Calculus by the end of their high school experience. Students who decide not to enroll in Algebra 1 in eighth grade may still self-accelerate by taking two high school mathematics courses in one year (Algebra 1 with Geometry or Geometry with Algebra 2). To view the mathematics course pathways please review the course flowchart on page 15.

**MATH 8 (MS3200)**  
**Grade 8 - Full Year**  
**Prerequisite:** None  
The course content is guided by the NYS Learning Standards for eighth-grade mathematics. Instructional time will focus on three areas: (1) expressions and equations, (2) understanding the concept of a function and using them to describe quantitative relationships (3) and analyzing two- and three-dimensional space and figures using distance, angle, similarity and congruence, and understanding and applying the Pythagorean Theorem. Students will take a local final examination at the end of the course. Students who select Math 8 may self-accelerate by taking two high school mathematics courses in one year (Algebra 1 with Geometry or Geometry with Algebra 2). To view the mathematics course pathways, please review the course flowchart on page 15.
BIOLOGY (HS4050)
Grade 8 - Full Year
Prerequisite: Pre-Algebra
Co-requisite: Algebra 1
This course is appropriate for students who have demonstrated success in Science 7, Math 7 and Pre-Algebra, and who can meet the demands of a rigorous course of study. The course content is aligned with the NYS Learning Standards for Biology, a high school science offering. In addition, select honors topics will be added to further enrich this course and to prepare students for future high school honors and/or AP coursework. This class meets for a single period daily and an additional lab period on alternate days. Students will complete a minimum of 40 laboratory experiences. Students will take the Living Environment Regents examination at the end of the course and it will count as one-ninth of the course grade. Upon successful completion of the course, students will receive one high school science credit, and it will be the first science course to appear on the high school transcript. Due to the linkage in content between science and mathematics in this course and future advanced science courses, students enrolling in Biology must also enroll in Algebra 1. Students who decide not to enroll in Biology still have the opportunity to engage in future honors and/or AP science courses. To view the science course pathways, please review the course flowchart on page 16.

SCIENCE 8 (MS3200)
Grade 8 - Full Year
Prerequisite: None
The course content is guided by the NYS Learning Standards for eighth-grade science. In this course, students continue with the investigation of physical and chemical properties of various elements and the study of acids and bases. Genetics and bacteriology are the two parts studied in the biology unit. The study of energy in the form of heat and light complete the course of study. This class meets for a single period daily. Students will take a local final examination at the end of the course. Students who select Science 8 will also select one of two Project Lead The Way courses. Students who select Science 8 have the opportunity to engage in future honors and/or AP science courses. To view the science course pathways, please review the course flowchart on page 16.
Project Lead The Way

SELECTION

STUDENTS ENROLLING IN SCIENCE 8 WILL SELECT ONE OF THE FOLLOWING PLTW COURSES:

PROJECT LEAD THE WAY – AC/MD (MS6345)
Grade 8 - Full Year (Alternate Days)
Prerequisite: None
Students enrolling in this course will engage in two units: App Creators and Medical Detectives. Students in App Creators collaborate to create mobile apps that make a difference in people’s lives. With a gentle introduction to programming, students learn how to make computers work together to put designs into practice. The course aims to develop computational thinking and build student excitement for programming. In Medical Detectives, students play the role of real-life medical detectives as they analyze genetic testing results to diagnose disease and study DNA evidence found at a crime scene. Students solve medical mysteries through hands-on projects and labs, investigate how to measure and interpret vital signs, and learn how the systems of the human body work together to maintain health.

PROJECT LEAD THE WAY – GA/ME (MS6365)
Grade 8 - Full Year (Alternate Days)
Prerequisite: None
Students enrolling in this course will engage in two units: Green Architecture and Magic of Electrons. Students in Green Architecture learn how to apply the concept of green choices to the fields of architecture and construction by exploring dimensioning, measuring and architectural sustainability as they design affordable housing units using Autodesk Revit architectural software. Students in Magic of Electrons explore electricity through the creation of hands-on projects, such as electric motors and a Morse code device. In addition, with the use of SnapCircuits, students will explore current concepts used in modern electronics, such as the parts of atoms, behavior of atoms and sensing devices used in security systems and cell phones. Students learn knowledge and skills in basic circuitry design and examine the impact of electricity on the world around them.
Mathematics

Algebra 1

- Principles of Geometry
- Geometry or Geometry Honors

Intermediate Algebra 1

- Intermediate Algebra 2

Foundations in Advanced Algebra

- Algebra 2 or Algebra 2 Honors

- Functions & Statistics
- Introduction to Calculus
- Introduction to Calculus Honors

- Calculus
- AP Calculus AB
- AP Calculus BC

Electives

- Computer Science for Innovation
- Intro to Computer Science Programming
- AP Statistics

- AP/PLTW Computer Science Principles
- AP Computer Science A
Science

Grade 8
- Biology
- Science 8

Grade 9
- Earth Science Honors
- Earth Science
- Earth Science and Project Physical World

Grade 10
- AP Biology
- Biology
- Biology and Project Living World

Grade 11
- AP Physics 1
  or
- AP Environmental Science
- Chemistry
  or
- Physics
  or
- PLTW Principles of Biomedical Science
  or
- Oceans
  or
- AP Environmental Science
  or
- Marine Ecology
- Environmental Science
  or
- Topics in Science

Science & Technology Research Program

| 10th Grade | / | 11th Grade | / | 12th Grade |

Electives

- Astronomy
- Meteorology
- PLTW Principles of Biomedical Science
- PLTW Human Body Systems