Hunterdon Preparatory School
Middle School General Science Curriculum

Students who attend the Hunterdon Preparatory School arrive with a varied knowledge base and skill sets in Science, and their yearly curriculum is dictated by their abilities based on these skill sets. The Middle School Science curriculum for the 6th, 7th, and 8th grade self- contained classroom is taught in accordance with each student's goals and objectives as listed in their current IEP. The curriculum for Middle School Science supports student development in obtaining the necessary fundamental knowledge of scientific systems and scientific research skills to prepare themselves for the challenges of high school science academics. Major emphasis is placed on fostering an overall sense of curiosity and inquiry in students concerning the physical world around them. Students are taught critical and creative thinking skills, problem solving skills, and the importance of collaboration with peers in order to formulate sound conclusions. The use of technology and computers is integrated into all facets of Science instruction, as well as a continual examination of the numerous career opportunities to be found in different fields of science.

The Middle School Science curriculum focuses on teaching students an overview of the different branches of science which the students will encounter on a more in-depth level as individual courses in high school. Students begin by learning the important principles of the Scientific Method and conducting scientific research. Scientific theories, scientific laws, and the numerous interrelated scientific systems are all important concepts students learn to use in order to make sense of the phenomena they encounter in the natural world. Students likewise learn to make predictions, develop their observation skills, practice safety measures during experiments, evaluate scientific explanations, draw conclusions, and to question the validity of the results of scientific experiments.

Students obtain an overview of physics and chemistry as they are introduced to physical science principles including fundamental ideas about matter, energy, and motion. Students discover the physical and chemical properties of substances and how these properties are altered when physical and chemical changes occur. The Periodic table, the classification of elements, Newton's laws of motion, and the different types of energy, are all explored to discover how matter can be changed or altered.

The Middle School Science curriculum also includes an Earth science unit which explores the four subdisciplines involved in the study of our planet and its surrounding neighbors: Geology,

Meteorology, Oceanography, and Astronomy. Students investigate the earth's structure and how changes occur to the terrain of the earth's surface, as well as exploring the concept of weather and its effects on the planet in terms of erosion. Students focus on a unit on the importance of the oceans of the world and the ecosystems discovered there. A unit on space, the solar system, stars and galaxies, and space exploration is also studied.

One of the largest units of study is that of Life Science which focuses on the study of living organisms and the interconnectedness of all life on the planet earth between microorganisms, plants, animals, and humans. Students learn the complexities and diversity of all forms of life as they explore biology, zoology, botany, anatomy, and genetics. From simple cells on up to the complexities of the human brain, students explore the characteristics, organization, and the differences and similarities of all systems in the natural world.

Student progress and performance in Middle School Science is determined by participation in classroom experiments, collaborative group work in science "research teams", individual research projects, field trips, computer software science programs, and the viewing of instructional science videos.

COURSE OBJECTIVES

- Students will cite specific textual evidence to support analysis of science and technical texts.
- Students will be able to determine the central ideas or conclusions of a text;
- Students will be able to provide an accurate summary of a text distinct from prior knowledge or opinions.
- Students will follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- Students will determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context.
- Students will analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

- Students will analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.
- Students will integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).
- Students will distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
- Students will be able to compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

Hunterdon Preparatory School
Middle School English Curriculum

Students who attend the Hunterdon Preparatory School arrive with varied skill sets in English, and their yearly curriculum is dictated by their abilities based on these skill sets. The Middle School English curriculum for the 6th, 7th, and 8th grade self- contained classroom is taught in accordance with each student's goals and objectives as listed in their current IEPs. The curriculum for Middle School English supports student development as they obtain the necessary reading, writing, and research skills to prepare themselves for the challenges of high school academics. Major emphasis is placed on assessing each student's skill level and developing their basic core skills which include reading strategies, academic writing skills, vocabulary development, and speaking and listening skills. The use of technology and computers will be integrated into all facets of English instruction as well.

Students in Middle School English will experience a rich and varied course of study while they improve their reading comprehension, their ability to express themselves through writing, and their widening understanding of research techniques. Organizational techniques are taught throughout all lessons to assist students in improving their executive functioning skills.

As reading is the one of the most important elements for knowledge acquisition, students are exposed to a wide variety of informational texts in order to help them build the foundations of knowledge through non-fiction sources. Students will explore information from such nonfiction materials as science articles, historical text, and current event articles to broaden their knowledge base and to appeal to their diverse interests. Students are likewise exposed to numerous types of fictional literature as they conduct a focused study on human behavior and the consequences of an individual's behavior on society. A wide range of multicultural short stories and poetry based on each student's appropriate reading level is an integral part of the curriculum.

The Middle School writing curriculum consists of demonstrating to students the importance of practicing and developing the art of writing through many different forms and styles. Students learn the practical applications of persuasive, narrative, and informative essay writing, as well as self-expressive writing in the form of journaling, writing an editorial, and creating a blog. Students are taught the importance of using facts and details to support their viewpoints and to demonstrate their understanding of the given subject matter.

Students are also introduced to the importance of proper research techniques and how to analyze and evaluate information. This is accomplished through the use of short research projects that require the use of multiple sources in order to establish accuracy and credibility of information. Students gradually learn to move from teacher guided, step-by-step procedural research gathering, to that of developing individual strategies and organizational methods based on each student's personal preference and the techniques they find to be the most useful.
Teachers select both class novels and individual independent readings based on the interests and strengths of the students. See attached for examples of materials utilized.

COURSE OBJECTIVES

- Students will be able to cite textual evidence to support analysis of what a text says as well as hidden meanings.
- Students will determine a theme or central idea of a text.
- Students will be able to provide an objective summary of the text both verbally and written.
- Students will analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).
- Students will be able to determine the meaning of words and phrases as they are used in a text, including figurative and connotative language.
- Students will be able to determine how word choice of a text changes tone or meaning in a text.
- Students will analyze how a drama's or poem's form or structure contributes to its meaning.
- Students will analyze how an author develops and contrasts the points of view of different characters or narrators in a text.
- Students will compare and contrast a written story, drama, or poem to other multimedia versions including stage productions, audio, and visual.
- Students will be able to determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.

- Students will trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.
- Students will analyze how two or more authors writing about the same topic have different interpretations or arguments about the topic.

Middle School English Reading List

- *The Outsiders* by S.E. Hinton
- *Holes* by Loius Sachar
- *The Wonderful Wizard of Oz* by L. Frank Baum and illustrated by W. W. Denslow
- *Seedfolks* by Paul Fleischman
- *Bull Run* by Paul Fleischman
- *The City of Ember* by Jeanne Duprau

Hunterdon Preparatory School
Middle School Mathematics Curriculum

Students who attend the Hunterdon Preparatory School arrive with varied skill sets in mathematics, and their yearly curriculum is dictated by their abilities based on these skill sets. The Middle School Mathematics curriculum for the 6^{th}, 7^{th}, and 8^{th} grade self- contained classroom is taught in accordance with each student's goals and objectives as listed in their current IEP. The curriculum for Middle School Mathematics supports student development as they obtain the necessary skills to prepare themselves for the challenges of high school academics. As each student arrives with their own specific sets of skills, mathematic instruction in the self-contained class is often individually based. Student courses range from basic remedial instruction on up to the Algebra I course. Major emphasis is placed on assessing each student's skill level at the 6^{th}, 7^{th} , and 8^{th} grade levels, and developing their basic core skills including such concepts as evaluating expressions, converting measurements, factoring, and solving equations. The use of technology and computers is integrated into all facets of mathematics instruction as deemed necessary and beneficial to the student's development.

The focus of Hunterdon Prep's Middle School math curriculum is to formalize and extend the mathematical skills that a student has already learned in previous math classes, and to help further their development of critical thinking skills, problem solving skills, and their ability to relate mathematical concepts to real world applications. If a student requires a more remedial course of study, they may begin with a focus on multiplication and division instruction, and then move on to work at improving their proficiency at decimal and fraction computations. Students also receive comprehensive lessons on working with ratios and per cents, extending sequencing and patterns, scientific notation, and a working knowledge of the metric system. By the end of the school year, the student will have made exploratory forays into basic algebraic and geometric concepts. They will also receive instruction on understanding proportional relationships, understanding mathematical operations, problem solving using 2 and 3 dimensional shapes, and formulating reasoning about linear equations. Organizational techniques are taught throughout all lessons to assist students in learning executive functioning skills.

If a student arrives possessing a strong skill set in math, they are placed into an appropriate math course based on their aptitude and sending district's curriculum. Students could possibly be placed in General Math, Pre-Algebra, Basic Algebra, or even Algebra I.

Throughout the year, student progress and performance in their specific math course is determined by a number of progress indicators. Students participate in individual classroom work and homework, collaborative group work on universal math concepts, computer software programs, and the viewing of instructional mathematic webcasts.

COURSE OBJECTIVES

- Students will be able to analyze proportional relationships and use them to solve mathematical problems.
- Students will apply previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
- Students will use properties of operations to generate equivalent expressions.
- Students will solve real-life and mathematical problems using numerical and algebraic expressions and equations.
- Students will draw, construct and describe geometrical figures and describe the relationships between them.
- Students will solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
- Students will use random sampling to draw inferences about a population.
- Students will utilize probability models to analyze and solve problems.
- Students will make sense of problems and persevere in solving them.
- Students will reason abstractly and quantitatively.

Hunterdon Preparatory School
Middle School Social Studies Curriculum

Middle school is the time when students are beginning to make the transition from concrete learning to more conceptual learning and applying skills necessary to generalize those concepts. The Middle School Social Studies course at the Hunterdon Preparatory School is designed to help students begin to think more critically and more in-depth about the topics in social studies that have been introduced in the previous grades, as well as, introduce them to concepts they will need as prerequisites in their future high school courses. By focusing on topics such as civics, community involvement and geography, students are given a foundation and understanding of their roles in society. This self-awareness prepares them with a more personal and meaningful perspective for when they begin to study the required history courses at the high school level.

The Hunterdon Preparatory School offers an academic approach to learning Social Studies that utilizes student's individual strengths, addresses academic deficiencies, and engages the students in relevant, active learning. Through high interest subject matter, students engage meaningfully in topics and are able to complete class work that helps them to progress and learn based on their individual academic needs.

The materials used for the course are varied. The common text book used for the course is Civics in Action. Although all students are assigned the textbook, it is used mainly as a focal guide to relate specific topics to. Depending on the unit/class topic, the relevant civics chapters will be reviewed in order to relate the topic directly and meaningfully to the civics concept. Multimedia aids such as documentaries, TED talks, and various informational videos are shown and discussed throughout the course. Class discussions are used to encourage students to share ideas and thoughts. By sharing and listening to the ideas of others, students are able to challenge their own views and develop informed opinions based on the information of others through critical thinking.

The Middle School Social Studies course begins with connecting students to their physical location and the history of that location. Students learn about the town of Clinton and the surrounding areas. They work with maps and historical literature to give meaning to their school surroundings. Students read the book, Beneath These Waters, which is the historical account of the building of Round Valley Reservoir. Students take a trip to the office of the Hunterdon County Cultural Society to acquire the books and the unit culminates with a hiking trip to the

reservoir to get a perspective on the scope and magnitude of the project that affected so many lives.

Subsequent units cover the following topics: Structure and function of local and federal governments, obligations and duties of a citizen, social, cultural and economic issues facing society today, how technology impacts citizens, immigration, and healthy community dynamics. Current events are frequently used during each unit as a way to bring students together in discussion about how events of the present correspond directly to concepts covered in the course. It is pointed out clearly, how they relate and why it is important to understand how they relate, so that the concept can be generalized to various situations in the future.

Finally, the Social Studies course at the Hunterdon Preparatory School is designed to prepare students to be critical thinkers as they move forward in their education and begin to focus on more in-depth topics of the various social sciences.

COURSE OBJECTIVES

- Students will be expected to read orally and silently.
- Students will participate in cross-curricular projects.
- Students will be able to cite specific textual evidence to support analysis of primary and secondary sources.
- Students will be able to determine the central ideas or information of a primary or secondary source.
- Students will be able to provide an accurate summary of the source distinct from prior knowledge or opinions.
- Students will be able to identify key steps in a text's description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).
- Students will determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.

- Students will be able to describe how a text presents information (e.g., sequentially, comparatively, and causally).
- Students will identify aspects of a text that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).
- Student will be able to integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
- Students will distinguish among fact, opinion, and reasoned judgment in a text.
- Students will be able to analyze the relationship between a primary and secondary source on the same topic.