

Gifted & Talented Summer Institutes

(410) 313-6671 | GTSummer@hcpss.org



GT Summer Institutes for Talent Development

Revised Course List - Virtual Summer 2020

All 2020 HCPSS summer programs will be offered **virtually**, in compliance with state and local guidelines for the safe recovery of operations. Virtual programs will have a modified schedule that will incorporate both live sessions and digital content to be accessed online.

Program Notes:

- Daily morning instruction will take place through Google Meet for 30 minutes (Entering Grades 1-2 classes only) or 45 minutes (Entering Grades 3-8).
- Daily “office hour” Google Meet check-ins will be available for students for additional support or feedback.
- Additional daily instructional activities will be provided in Canvas.
- Program fees are reduced to \$220 for Session 1 and \$240 Session 2.

For more information please visit: <https://www.hcpss.org/summer-programs/> and <https://help.hcpss.org/summer/>.

General Academics and Fine Arts - Session 1

Around the World: Exploring Faraway Lands (Session 1)

Entering Grades 1-2

Students in this class will investigate five different cultures by engaging in hands-on experiences. Utilizing stories and digital media, students will create a variety of products. They will use writing and art to showcase their understanding of these faraway lands.

Construct and Sculpt (Session 1) (Updated)

Entering Grades 1-2

This class is designed for students who have an interest in putting together unusual materials to create three-dimensional art objects. Based on individual student needs and strengths, instruction will focus on a variety of exciting and fun ways to problem solve and create original 3-D structures while experimenting with a variety of diverse sculpting techniques.

Junior Techies (Session 1) (Updated)

Entering Grades 1-2

Love technology and problem solving? In this class, students will participate in a variety of activities to develop computational thinking skills and to build introductory coding concepts.

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Students will engage in activities that include coding apps, web-based games, and at-home unplugged activities. Instruction will also cover introduction to coding vocabulary and development of problem solving skills. Students will also receive instruction to support their ability to utilize Canvas instructional tools.

Painting with the Masters (Session 1) (Updated)

Entering Grades 1-2

This class is designed for young artists who love to draw and paint. Students will learn specific drawing and painting techniques and be introduced to master artists. They will practice observational skills while exploring a variety of painting mediums. The curriculum is designed to provide an environment where students develop skills and experiment with color mixing, mark-making and composition.

Sailing Through Literature (Session 1) (CANCELED)

Entering Grades 2-3

~~This class focuses on developing higher-level vocabulary, comprehension and interpretive thinking skills as students set sail through oceans of exciting literature selections. Instruction explores and navigates noteworthy authors to help students gain a greater understanding of literary style. Students read and respond to stories in creative ways that include imaginative writing activities to enhance their own writing skills.~~

Solving a Scientific Mystery (Session 1) (CANCELED)

Entering Grades 2-3

~~This class is designed for students who love to solve mysteries. Instruction will focus on solving the mystery of which suspect borrowed the classroom's stuffed friend, Mr. Bear. Students will examine clues and evidence while learning important scientific skills and concepts. Emphasis will be on applying skills in observation, analysis, technology and problem solving as students become active crime scene investigators.~~

Talking Tangrams: Integrating Geometry and Writing (Session 1) (CANCELED)

Entering Grades 2-3

~~This class explores the use of tangrams, ancient Chinese puzzle pieces consisting of 7 geometric shapes, to create different characters for plays that students read and write. Instruction is math-based and focuses on creativity and hands-on activities to enhance math skills. Students learn and interpret geometric and spatial relationships while integrating language arts skills. Team building skills are emphasized when students work with peers to produce and perform engaging plays as end projects.~~

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The Elementary Chemist (Session 1) (Updated)

Entering Grades 2-3

This class is for students interested in a hands-on science experience. Instruction will focus on using the scientific method to experiment, observe and test hypotheses. Students will engage in learning about matter and its properties while using chemistry to create and explain color changes, huge bubbles and weird smells. The curriculum is designed to teach the principles of chemistry, to allow students to become familiar with laboratory techniques and to encourage scientific inquiry.

3-D Art Adventures (Session 1) (Updated)

Entering Grades 3-5

This course is designed for students who like to build and invent in 3 dimensions. Students will learn and practice various sculpture techniques as they examine various master artists and artistic themes. They will use their artistic skills and creativity to create a variety of artwork in 3 dimensions.

Ready, Set, Build (Session 1) (CANCELED)

Entering Grades 3-4

~~Calling all future engineers! Join us for this hands-on introduction to engineering where students will learn about Newton's Laws, Bernoulli's Principle and the workings of simple machines. Students will engage in the engineering design process that helps them create, build, test and learn from their mistakes in order to improve their designs. Come build bridges, balloon-powered cars, robots and more!~~

Totally Mad About Science (Session 1) (CANCELED)

Entering Grades 3-4

~~How much fun can science be? Students will realize just how exciting scientific concepts can be as they conduct a variety of experiments. These will help them understand the states of matter and include watching how "cool" dry ice can be, learning the who's and "watts" about static electricity, creating super gooey slime, working and "pulling" together to learn about magnetic force and not believing what they see as they explore optical illusions. Students will conduct their own experiments to explore these and many more interesting scientific concepts!~~

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Under the Sea (Session 1) (Updated)

Entering Grades 3-4

Dive into summer with this unique opportunity to explore the world under the sea. Students will conduct research on a marine animal of their choice. After researching their chosen animal using multiple sources of information, students will create an interactive, multimedia presentation to share with their families and peers. Students will begin learning about the importance of conservation and explore ways that they can help save these animals and their habitats. Who's ready to explore the unknown worlds of Earth's oceans?

3, 2, 1 Blast Off into Outer Space (Session 1) (Updated)

Entering Grades 4-5

In this class, "young astronauts" will explore the theme of space through science, math, technology, writing, reading, career education and current events. They will learn about America's history in space in order to promote a deeper understanding of the "Space Race" and NASA's future plans involving Mars. Instruction will emphasize problem-solving activities and creativity, as students build model space devices.

Great Adventures in Math, Engineering and Science (Session 1) (CANCELED)

Entering Grades 4-5

This course is designed to empower students to become problem solvers, stimulate interest in these inspiring fields of study and explore careers related to these topics. Students will engage in hands-on, motivating experiences that promote them to be life-long learners who are able to work together to solve realistic problems as well as to develop a basic understanding of the natural and humanly modified world around them. Students will design, build, and apply Mathematics, Engineering, and Science throughout this two-week experience.

Invitation to Invent (Session 1) (CANCELED)

Entering Grades 4-5

This class will provide students with opportunities to integrate science, technology, engineering and mathematics in the process of invention. Participating students will use an inquiry-based approach as they investigate the structure and use of simple and compound machines. They will use creative problem-solving to invent solutions to everyday problems and develop their own ideas for inventions.

Medical Diagnosis 101 (Session 1)

Entering Grades 4-5

Students in this interactive class will work in cooperative groups called “medical clinics” to explore the components and workings of six different systems in the human body: circulatory, respiratory, nervous, digestive, muscular/skeletal and immune. Students will become experts in their specialties and must pass a “Board Exam” prior to practicing medicine. Within the clinics, students will study the relationship between positive health behaviors and the prevention of injury, illness and disease. The unit will conclude with “Grand Rounds,” where each clinic team is presented with a patient and must research and work together to find a diagnosis.

Mystery Writing: Get a Clue (Session 1)

Entering Grades 4-5

This class is designed to explore how mathematics is woven into the plot of mystery writing. Instruction will focus on learning the basic components of mystery writing. Students will study the works of Blue Balliett, beginning with her award-winning novel, *Chasing Vermeer*. After analyzing Balliett’s style, the students will apply their knowledge of mystery writing to write an original realistic fiction book using digital photography to record clues.

Paper Engineering and the Art of the Pop-up (Session 1) (Updated)

Entering Grades 4-5

Designing and constructing pop-up books is a STEAM project that challenges students to think spatially and creatively to engineer complex paper mechanisms. Students will learn how to activate a new idea or story each day with a pop-up mechanism. At the end of the class, students will have a variety of pop-up mechanisms that range in complexity.

The Painter’s Studio (Session 1) (CANCELED)

Entering Grades 4-6

~~This course is designed for students who love to paint, want to improve their painting skills or simply enjoy pushing paint around on a surface. Students will explore how artists paint from life and create abstract designs using shape and color. Students will develop their skills using a variety of types of paint from watercolors to acrylics, spray paint to traditional homemade paints.~~

Code Crackers: Unlocking Mathematical Secrets (Session 1)

Entering Grades 5-6

What does math have to do with codes, ciphers and cryptology? Students in this class will apply mathematics skills and concepts to understand the world of code breaking. They will learn to decode and encode messages based upon existing methods and will develop their own system of messaging. Students will use problem-solving skills and logic to solve a series of problems involving a mysterious message and make decisions about how to encode an answer. Come see how the field of cybersecurity has been influenced by the “code breakers” of the past and present.

Enlightened Through Engineering (Session 1) (CANCELED)

Entering Grades 5-6

~~This class provides students with the opportunity to explore the engineering process involved in designing and programming a robot for a real-world application. Student teams will learn engineering concepts and problem-solving through hands-on projects and computer simulations. Students will use creativity, ingenuity and technology to develop their final projects.~~

Math Gets “Real” (Session 1) (Updated)

Entering Grades 5-6

In this course, students will engage in a variety of activities in order to understand math in a “real” sense. Students will apply math problem-solving skills to creatively tackle real problems, which incorporate a variety of mathematical concepts such as estimation, geometry measurement, proportional reasoning, probability, fractions, decimals and statistics.

Advanced Drawing and Painting: The Power of Observation (Session 1) (Updated)

Entering Grades: 6-8

This class is designed to help students further develop observational drawing and painting skills in a traditional method exploring different genres, including still-life, figure, portraiture and landscape. Students will explore a variety of drawing media. Work produced in this course would be suitable for starting a high school visual arts portfolio.

Adventures with Javascript (Session 1) (CANCELED)

Entering Grades 6-8

Do you enjoy the Hour of Code? Move beyond block coding to JavaScript, a popular language for web applications. Students will start out learning the basics of HTML and CSS and then will begin writing scripts using JavaScript. Projects will grow in complexity, including a simple chatbot and an aquarium with moving fish, until students are ready to design and code a project of their own choice. Intended for those new to JavaScript, this course will follow a software development process in which students list a project's requirements, determine what code features are required, then access resources to learn, write, test and troubleshoot.

Civil Engineering: Mathematics and Problem Solving in the Real World (Session 1) (Updated)

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Engineering requires the ability to not only problem solve but also to create and plan using mathematics. Throughout the course, students will improve upon their mathematical abilities by planning and creating a virtual city built from items that they have around their home. Using problem-based learning, students will work to study proportions, ratios, algebra, expository writing and much more as they explore multiple representations of mathematical scenarios with the ultimate goal of understanding civil engineering.

Model UN for Middle School (Session 1)

Entering Grades 6-8

The world has challenges—climate change, nuclear proliferation, poverty and access to health care. The list goes on and on. Our current school-aged generation will be called on to solve many of these global challenges. Model United Nations (MUN) is a program that runs simulations-based exercises to help prepare students to understand and develop solutions to the world's most challenging problems. Come and be a part of the solution!

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How do writers use language to breathe life into their work? Students will explore techniques used by published authors to develop and revise their own pieces of fiction, nonfiction and poetry. This class will incorporate the 6+1 Traits of Writing and narrative brush strokes in order to guide students in creating online writing portfolios. Students will engage in 30- 45 minute writing lessons with teachers and peers to learn drafting, revising, and publishing skills. Assignments are designed to give students time for independent practice to develop their own unique voices as they reflect on their growth as developing writers.

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Math Gets "Real" (Session 2)

Entering Grades 5-6

Through engaging activities such as crafting original architectural plans or designing roadside attractions, math becomes "real." Students will apply math problem-solving skills to creatively tackle real problems, which incorporate a variety of mathematical concepts such as estimation, geometry measurement, proportional reasoning, probability, fractions, decimals and statistics.

Becoming a Historian: Engaging in Historical Research (Session 2) (CANCELED)

Entering Grades 6-8

~~Do you love history? Is there something you studied in school but wished you could have researched more in depth? Throughout this course, students will “think like a historian” and develop their research skills by analyzing context, sourcing, seeking corroboration and close reading. Through engaging approaches, including simulation and debate, students will follow their own personal historic interests that may be applied to National History Day or other historical competitions in middle and high school.~~

Civil Engineering: Mathematics and Problem Solving in the Real World (Session 2) (Updated)

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Engineering requires the ability to not only problem solve but also to create and plan using mathematics. Throughout the course, students will improve upon their mathematical abilities by planning and creating a virtual city built from items that they have around their home. Using problem-based learning, students will work to study proportions, ratios, algebra, expository writing and much more as they explore multiple representations of mathematical scenarios with the ultimate goal of understanding civil engineering.

Lights, Camera, Action - Bringing Computer Science into the Physical World (Session 2)

Entering Grades 6-8

Through hands-on experiences, students will learn how computers work and use them to control the physical world through hardware like raspberry pi's, micro:bits, breadboarding, LEDs, cameras and servo motors. Students will develop a new level of confidence and experience with computers and what they can do!

Model UN for Middle School (Session 2)

Entering Grades 6-8

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Observation, Design and the Search for Personal Meaning (Session 2) (Updated)

Entering Grades: 6-8

To further develop their art-making skills, students may continue their practice of the visual arts through Observation, Design, and The Search For Personal Meaning. Through rigorous application of observational skills, challenging design problems, and investigation of personal meaning, students will work in a variety of dry media to create sophisticated 2D works. Students will also learn to create digital images of their work and craft a personal artist's statement. Completion of Advanced Drawing and Painting in combination with this course provides students with a portfolio of work that may be suitable for advanced placement in high school.

The All-Around Author (Session 2) (Updated)

Entering Grades 6-8

How do writers use language to breathe life into their work? Students will explore techniques used by published authors to develop and revise their own pieces of fiction, nonfiction and poetry. This class will incorporate the 6+1 Traits of Writing and narrative brush strokes in order to guide students in creating online writing portfolios. Students will engage in 30- 45 minute writing lessons with teachers and peers to learn drafting, revising, and publishing skills. Assignments are designed to give students time for independent practice to develop their own unique voices as they reflect on their growth as developing writers.

The Olympics of Science (Session 2) (CANCELED)

Entering Grades 6-8

~~Based upon the framework of the Maryland Science Olympiad competition, this course features group tasks that require students to research, discover answers to authentic questions and apply engineering design principles. Students will engage in challenges related to engineering, physics, meteorology, herpetology, anatomy and physiology, public health, circuitry and topography. Embrace the challenge while participating in these friendly team-based "competitions."~~