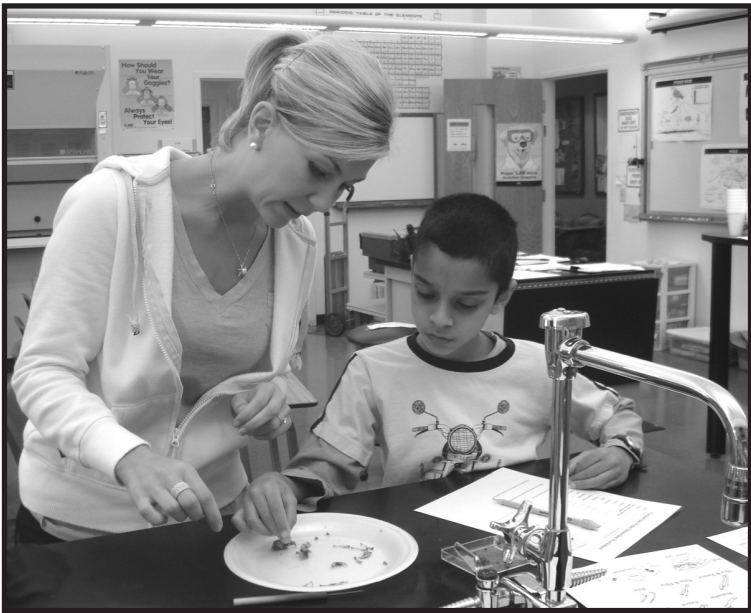


Summer Program 2012

(Completed grades 1-9)

C-MITES Carnegie Mellon Institute for
Talented Elementary and Secondary Students



www.cmities.org

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C-MITES

Carnegie Mellon Institute
for Talented Elementary and Secondary Students

Overview

The Carnegie Mellon Institute for Talented Elementary and Secondary Students (C-MITES) offers a challenging summer program for academically talented students who have completed 1st – 9th grade. The curriculum is designed to complement what students have studied in school and provide them with challenges in mathematics, science and the humanities. Class size is limited to 20 students, one teacher and one teaching assistant. Students participate in small group, individualized, and whole-class activities. Activities used in these courses have been recommended by the National Council of Teachers of Mathematics, the National Science Teachers Association, and the National Council of Teachers of English.

Benefits of Participation

C-MITES is a rigorous summer program in which students are presented with challenging material at a fast pace. The primary benefit of participation is academic stimulation. Students also benefit socially; C-MITES participants meet other talented students who have interests similar to their own. Finally, C-MITES is a lot of fun! Students report that they enjoy the hands-on approach, appreciate their teachers' enthusiasm, and have fun getting to know each other.

Eligibility

For All

- Enrolled in 1st – 9th grade as of April 2012
- Provides one teacher recommendation

1st - 2nd graders

- Provide a report card
- **Optional:** provide a copy of one standardized test score report. Acceptable tests include Terra Nova, Stanford Achievement Test, School and College Abilities Test, or summary page from individual IQ testing.

3rd - 9th graders

- Took an above-level test such as EXPLORE, PLUS or SCAT
- **OR** is in the gifted program at school
- **OR** scored at the 95th percentile or above on a standardized test

Selection for the C-MITES Summer Program will be based on test scores, information provided in the application, and a teacher recommendation. Recommended minimum EXPLORE scores are listed in parentheses after each course description.

**3rd - 9th graders
who have not taken the
C-MITES EXPLORE test,
read this:**

Students who have taken the EXPLORE test through C-MITES will be given priority when we select students for our classes. Students who have not taken the test may still apply, but they will be charged higher tuition.

Students who took the EXPLORE test through the C-MITES office will be

considered first, followed by students who took the EXPLORE through another office, followed by those who took a different above-level test. Finally, those students who did not take an above-level test will be considered for placement if space is available.

C-MITES Instructional Staff

Most C-MITES instructors are certified teachers and have a strong background in the subjects they teach. They are chosen because of their excellent teaching skills, mastery of the subject, enthusiasm, and interest in working with talented youngsters. Most C-MITES classes have a teaching assistant who is usually a college student or a recent graduate.

Students with Disabilities

C-MITES will provide reasonable accommodation for academically qualified students with disabilities. Parents, please let us know as soon as possible if your child has a disability that requires accommodation. Call the C-MITES office and talk to a staff member before choosing courses. C-MITES teachers greatly appreciate resource materials on specific techniques for accommodating your child's disability. The privacy rights of each student will be honored to the fullest extent possible.

Application Deadline

Applications postmarked by **April 6, 2012**, will receive full consideration; applications postmarked after this date will be considered only if spaces are available. Students will be notified by mail if accepted. Final decisions will be made by mid-May.

Students are **not** assigned on a first-come, first-served basis. We do encourage students to complete and return their applications as quickly as possible to give the C-MITES staff time to process the applications. This will help us meet our goal of sending out notifications of course assignments by mid-May.

Homework

C-MITES students work hard in class, and most students are assigned daily homework. Students should expect 30 to 60 minutes of homework each day in most classes.

Last day party

Mark your calendar for the last day of class. We will invite families to a party during the last hour of class time. Food may be served at the party. Please inform your teacher about any food allergies.

Cost

- Non-refundable application fee: \$10
- Late application fee (postmarked after April 6, 2012): \$30
- Students who participated in the C-MITES Talent Search and took the EXPLORE test receive a discounted price (DP) for courses. (See the course description for cost of individual classes.)
- All other students pay the regular price (RP) for courses. (See the course descriptions for cost of individual classes.)
- You may include a \$5 EXPLORE look-up fee with your application fee if you lost your EXPLORE score.
- An additional cost will be incurred for optional afternoon programs.

Financial Aid

Financial aid is available for students demonstrating financial need. Please complete the financial aid form found on page 3 of the Summer Program application if you would like to request aid.

Payment and Refund Policy

The application fee is due with the application and is **not** refundable under any circumstances.

Full payment is due by June 1, 2012. A late fee of \$10 will be added to all accounts that are not paid in full by the due date. Students with unpaid balances will not be permitted to attend the class.

No refunds or credits will be issued except in the case of a medical excuse. If a student must drop out of a class for medical reasons, make a request for a

refund in writing and include a letter from your child's doctor. Tuition will be refunded on a prorated basis.

Classes with insufficient enrollment will be canceled, and students will be issued a full refund.

Course Assignment Process for 3rd - 9th graders

All applications postmarked on or before April 6, 2012, will receive full consideration. Those students will be divided into one of three categories:

- (1) those who took the EXPLORE test through C-MITES
- (2) those who have taken an above-level test, such as the PLUS, SCAT or EXPLORE through another organization
- (3) those students who have not taken an above-level test but have scored at the 95th percentile or higher on a grade-level test.

We will assign all students in the first category before assigning students in the second category. Students in the first category are ranked by the selection committee based on test scores, teacher recommendations, and academic activities. Students with the highest rankings are assigned to courses first.

Students in the second category will then be ranked by the selection committee, and they will be assigned to courses, if space is available, followed by students in the third category.

As students are assigned classes, we will try to place them in their first-choice course. If that course is filled, we will move on to the second choice, third choice and so on, until all students are assigned.

After all students are assigned, if space permits, we will assign students to a second course if they have indicated on their application that they are interested in taking more than one C-MITES course.

If space is still available in our courses, students with late applications will then be assigned to courses.

Course Assignment Process for 1st - 2nd graders

All applications postmarked on or before April 6, 2012, will receive full consideration. Students will be ranked by the selection committee. Students with the highest rankings will be assigned to courses first.

After all students are assigned, if space permits, we will assign students to a second course, if the students has indicated an interest in taking more than one course.

If space is still available, students with late applications will then be assigned to courses.

Students should register for classes in their academic strength areas and in areas that interest them. C-MITES summer classes are NOT designed as remedial courses.

What Causes Delays with Applications?

An application is not considered until **ALL** information is complete. An incomplete application may result in a student not being considered for any C-MITES summer courses. Please review your application and make sure it is complete before submitting it. The following items cause delays in the application process:

- No application fee enclosed
- No test score report enclosed for grades three and up. Enclose a copy even if you tested through the C-MITES office. NOTE: students who took EXPLORE in January/February 2012 should receive score reports by March 30th.
- No report card for 1st-2nd graders
- No teacher recommendation enclosed (Please give your teacher plenty of time to complete this form. Enclose it with your application in a sealed envelope or ask the teacher to complete it online).

Notification of Class Assignment

In mid-May, students who are placed in a course will receive notifications through the mail. Enclosed with these notifications will be course and site assignments, a medical information form, general information about the program (what to wear, what to bring to class, etc.), and directions to the program sites. The form and class payment must be returned to the C-MITES office by June 1st.

Selecting Your Classes

Please choose only classes you are interested in taking and are able to attend. Students who include several courses, dates, or sessions among their choices stand a better chance of being accepted into a course. Listing more than one course choice does not hurt students' chances of being assigned to their first choice courses. Listing only one choice on the application does not increase the chances of being assigned to that course. Students may take more than one class if space permits.

Please choose your classes carefully. Be sure that you are able to participate on the dates and times you select (**refer to the schedule on page 6 of the application**). Select only classes for your current grade (school year 2011-2012). We will not accommodate switching classes.

Descriptions of the C-MITES courses are listed below. For classes for 3rd graders and older, recommended minimum EXPLORE scores are listed after each course description. Please note that the grade levels vary from site to site, and you should refer to the locations in the application for appropriate grade levels at a particular site. (See page 6 of the white application for grade levels, sites, times and dates.)

Two fees are listed. **DP (discount price)** is for 3rd - 9th grade students who have taken the EXPLORE test through C-MITES.

RP (regular price) is for those 3rd - 9th grade students who have not tested with C-MITES.

Course Descriptions

Advertising Edge

Advertisements are often aimed at young people. Participants will identify advertising techniques and become better informed consumers in this hands-on, creative class. Using persuasive writing techniques, students will create billboards, magazine ads, television commercials, and an original breakfast cereal, as well as design, promote, and sell a candy bar. Students will present their television commercials to their parents on the last day of class. Smart consumers from this class will be able to analyze and critically evaluate advertising media. Grades 5-7. (Minimum EXPLORE Reading Score=8). DP=\$390, RP=\$460.

Aeronautics

Blast off into science! The countdown is on for a stellar one-week mission of flight and space exploration. Explore our universe including stars and planets, as well as the past,

current and future of space travel. Make and launch bottle rockets, perform space gardening, create a Mars or moon lander and share some delicious dehydrated food that could be eaten in space. Learn about life in space, discussing things like eating, sleeping, going to the bathroom, and inventions that we use every day that were created in space. Mission control has planned an out-of-this-world experience! Grades 3-5. (Minimum EXPLORE Science Score=8). DP=\$390, RP=\$460.

Alice for Beginning Programmers

Learn computer programming skills using Alice, a software program designed at Carnegie Mellon that you can download at home for free. Learn about the steps needed to create a computer program as well as programming concepts such as loops and conditional statements. Create your own animated movies and video games! Prerequisites: some familiarity with using a

mouse and Windows. Students who have taken the Programming Using Alice course should NOT sign up for this one-week class. Grades 3-4. (Minimum EXPLORE Math Score=8). DP=\$210, RP=\$280.

Amusement Park Physics

This is your chance to explore, measure, and experience speed, acceleration, G-forces, weightlessness, motion and gravity. An elevator and a playground will be our “simulators” as we prepare for the big mission to an amusement park! The trip to the park is an extended class day. Warm up your calculator, hang on to that force meter, and say, “Please be sure the safety bar is down!” Grades 4-6. (Minimum EXPLORE Math Score=10). DP=\$410, RP=\$480.

Bridge Boom

Learn about the bridges in Pittsburgh as you discover the geometry involved in their construction. Through hands-on activities, team-building tasks and a construction project, you will better understand the basic engineering involved in bridge building. Grade 3 ONLY. (Minimum EXPLORE Math Score=8). DP=\$210, RP=\$280.

CO₂ Dragsters

Design two dragsters powered by different sources of energy. Design and build a car using a mousetrap as the energy source. Then, build an aerodynamically-designed dragster out of balsa wood and power it using a CO₂ cartridge. Learn about the history of the automobile and discuss aerodynamics. Use what you have learned to build your dragsters and race the cars. Determine their speed based on distance and time. Grades 4-6. (Minimum EXPLORE Science Score=10). DP=\$390, RP=\$460.

Crime Scene Investigations at the Windber Research Institute

An ingenious thief has made off with a priceless collection of Steelers memorabilia, but has left behind evidence that may lead to his downfall. Use your detective skills, learn about criminology and DNA forensics, and help rescue the Steelers stuff. In this unique course, students will have hands-on experience with evidence

collection, microscopy, blood spatter, hair/fiber analysis, and DNA fingerprinting technologies such as DNA isolation, PCR amplification, and microsatellite typing at the Windber Research Institute, a state-of-the-art genomics research facility. Extra financial aid may be available for students taking this class. Grades 7-9. (Minimum EXPLORE Science Score=11). DP=\$390, RP=\$460.

Ecosystem Science

Come celebrate the wonder of our natural world as we unravel the mysteries of ecosystems. During each day of this week-long course, we will focus on different parts of an ecosystem, learning through a variety of games, experiments and activities just how amazing our natural world truly is! We begin by studying animals and plants, learning about the local species as well as extremophiles, and finish our week by deciphering the secrets of soil with scientific tests. Grades 1-2. Price=\$250.

Explorations in Science

Become a paleontologist, geologist, medical technician, and ecologist. As a paleontologist, learn the techniques used to prepare fossils, then reconstruct your own. As a geologist, conduct a rock and mineral dig and examine the qualities of each item to identify it. As a medical technician, explore different aspects of the human body, such as lung capacity, reflex time, and peripheral vision. As an ecologist, dissect owl pellets and rebuild the skeleton of the owl’s prey. Grades 3-5. (Minimum EXPLORE Science Score=10). DP=\$390, RP=\$460.

Forensic Science

Apply your skills in chromatography, fingerprinting, hair analysis and blood analysis to solve a variety of crimes, including a drug bust, kidnapping and murder. Priority will be given to those students who have taken the Solve a Murder Mystery course, but it is not a prerequisite. Grades 6-8. (Minimum EXPLORE Science Score=11). DP=\$390, RP=\$460.

Green Engineering

How does a bike become a bike? Or a computer become a computer? What happens when we're done with them? We will explore where "stuff" comes from, and where "stuff" goes. Along the way, we'll see how green engineers involved in designing these products reduce the impact they have on the environment. Favorite activities in this class include taking apart objects such as radios and phones and building structures using newspapers. Grades 6-8. (Minimum EXPLORE Science Score=10). DP=\$210, RP=\$280.

Harry Potter's Science Adventure

Hogwarts has nothing on us! Magic meets its match in our chemistry, astronomy, biology and food science lab. Unlock invisible spells with a Revealer, invent candy flavors Bertie Bott would envy, feel the power of the Whomping Willow's tiny cousin, and recreate the Blast-ended Skrewt's blast. Uncover the science hidden in wizard hats and find out why it has taken so long for people to unravel science and superstition. You will qualify as a science whiz when you help to design, then take, our O.W.L. (Ordinary Wizarding Level) test. Grades 3-5. (Minimum EXPLORE Science Score=8). DP=\$390, RP=\$460.

How Things Work

Learn about gears, levers, wheels, screws and many other simple machines that you see every day. Gain knowledge about inertia, momentum, and sliding and rolling friction. Brainstorm ideas about making a jet engine, rocket engine or electric motor. Do many hands-on experiments to gain a deeper understanding of science. Grades 3-4. (Minimum EXPLORE Science Score=8). DP=\$390, RP=\$460.

Insights into Algebra

This course is designed for students who have some basic algebra skills. Explore how to make sense of more important algebraic concepts and examine why algebra has been a useful tool to solve meaningful problems. One particular focus of the course will be

to analyze and utilize algebra in various forms-- verbally, numerically, graphically, and symbolically. Grades 6-8. (Minimum EXPLORE Math Score=10). DP=\$390, RP=\$460.

K'NEX Geometry

Examine intermediate math and geometry concepts through fun, hands-on activities with K'NEX®. Here's your chance to get creative with math and design technology! Topics include: 2-dimensional and 3-dimensional shapes, lines, angles, symmetry, congruence and similarity, measurement, sequencing and patterning, estimation and fractions. K'NEX time you think geometry isn't any fun, think again! Grades 3-5. (Minimum EXPLORE Math Score=9). DP=\$210, RP=\$280.

Magnificent Math

Play cards and learn simple magic tricks involving basic math operations. Discover fundamental geometric principles by making LEGO® houses. Find hidden polygons in LEGO® models. Make multiplication flash cards. Have fun creating a geometry board game to take home and play with your family and friends. Grades 1-2. Price=\$250.

Math Counts & More

Try out problems from the national level of the MATHCOUNTS competition! Test yourself on Sprint, Target and Team Problems. Experience warm-ups, workouts and stretches that will develop your skills in mathematics and improve your performance in competitions. Compete with other students in the class and compare yourself to state-level competitors. Investigate the history of mathematics and discover some good problem-solving strategies. Try out visual brainstorm problems! On the last day of class, parents and friends will be invited to observe a competition, including a count-down round and presentation of individual and team trophies. Grades 5-7. (Minimum EXPLORE Math Score=9). DP=\$390, RP=\$460.

Mathematics Through the Ages

A humanities class for math! Explore the development of counting systems and counting devices over time. What is the difference between a Japanese abacus and a Chinese abacus? When was zero first used as a place holder? You will make several counting devices and games, research famous mathematicians from the past and share what you've learned. Learn about the number pi and sing pi songs! Enjoy a pizza "pi" and a chocolate chip cookie "pi." Teams will be created for daily competitions ending with the finale of Jeopardy on the last day of class. Math anxiety is no reason to avoid this class, since no math skills are required. Grades 4-6. (Minimum EXPLORE Reading Score=8). DP=\$390, RP=\$460.

Problem Solving using Puzzles and Games

Learn math with a twist! Did you ever wonder how to solve the Rubik's cube? Holding it, twisting and turning the parts will help you grasp math concepts including area, perimeter, volume, angles and other geometric and algebraic concepts. Build your knowledge and problem-solving skills as you play mathematical games and solve critical thinking puzzles. Develop your problem solving strategies to accomplish challenging tasks, such as solving the 3 x 3 Rubik's cube. Grades 4-6. (Minimum EXPLORE Math Score=9). DP=\$390, RP=\$460.

Programming Using Alice

Learn computer programming skills in a fun and creative way: by storytelling! Be the director of a movie or the creator of a video game where 3D objects in your on-screen virtual world move around according to your directions. Learn traditional computer programming concepts such as loops, nesting, if/else statements and functions. Will you create a video game, a skater that spins and glides on ice, or a Beetle Band? Prerequisites: some familiarity with using a mouse and Windows. Grades 4-6. (Minimum EXPLORE Math Score=10). DP=\$390, RP=\$460.

Roaming Ancient Rome

Learn about the Ancient Roman Empire and its culture, beginning with Romulus and Remus and ending with the fall of Rome. The class will include many hands-on projects ranging from making togas and designing coins to building a road and an arch. We will even eat like the Romans did! Grades 3-5. (Minimum EXPLORE Reading Score=8). DP=\$210, RP=\$280.

Robotics Programming and Design

This course is an introduction to robot-building and robot-programming. Using LEGO® pieces and the MIT Handy Board, design and build desktop mobile robots, then program them using IC programming language to do dances, follow lines, and "sense" different objects in the environment. Will you be able to program your robot to bowl? Will your robot successfully be able to navigate through a maze without getting stuck? This is a team-based, hands-on course. No experience in robotics is required. Grades 6-8. (Minimum EXPLORE Math Score=11). DP=\$300, RP=\$370.

Rocketry

Blast off into science! The countdown is on for a stellar one-week mission of flight and space exploration. Explore our universe including stars, planets, and the past, current and future of space travel. Make and launch bottle rockets, do space gardening, create a Mars or moon lander and share some delicious dehydrated food that could be eaten in space. Learn about life in space discussing everyday things like eating, sleeping, going to the bathroom, and even inventions that we use every day that were created in space. Mission control has planned an out-of-this-world experience! Grades 3-5. (Minimum EXPLORE Science Score=7). DP=\$390, RP=\$460.

Science Potpourri

Are you curious about the world around you? Spend a week experimenting with science! Hunt for insects and use a map and a compass to find a 'buried treasure.' Learn about the sun's energy and try some solar energy experiments! Study crystal formations and share the results of our experiments with your family on the last day. Grades 1-2. Price=\$250.

Solar System Astronomy

Use a variety of resources to research the solar system and its members, including the latest planetary discoveries! Create a multimedia presentation on a solar system member of your choice. Use the Starry Night® software, video cameras, PalmZire handhelds, PowerPoint, the Internet, and other tools to help you explore our planetary neighborhood! Other activities include: launching a rocket, creating and tracking a planet, and exploring the planets. Nightly outdoor observations will be required for homework. Grades 5-8. (Minimum EXPLORE Science Score=10). DP=\$390, RP=\$460.

Solve a Murder Mystery

Become a crime scene investigator. You will be the detective as you learn what it takes to be a forensics expert. Fingerprinting, hair identification, DNA analysis, and evidence collection will be covered before your skills are put to the test of solving a "crime" that occurs in the classroom. Grades 4-6. (Minimum EXPLORE Science Score=11). DP=\$390, RP=\$460.

WeDo Robotics Explorations

Using the LEGO® kit designed specifically for younger students, explore the world of robotics! Work with your partner to build LEGO® models that feature working motors and sensors. Attach sensors to your model of a machine or an animal, and program the model to move using a computer and "drag and drop" software. Basic programming skills will be discussed and students will have the opportunity to program their robots to perform a variety of tasks. Through your work with robots, you will improve your skills in math, science, problem solving, and teamwork. Grades 3-4. (Minimum EXPLORE Math Score=8). DP=\$390, RP=\$460.

You Make Me Sick: Immunology

Learn about viruses that are trying to take over your cells. Discover the bacteria that are everywhere around you. Study the remarkable defenses your body has against illness and investigate how medicines can keep you healthy. Learn about what you can do to keep your body healthy. We promise you will not be sick of this course by the end of the week! Grades 3-5. (Minimum EXPLORE Science Score=10). DP=\$210, RP=\$280.

A portion of the funding for C-MITES programs is provided by:

Mark Gelfand
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Foundation
C-MITES Families

Reminder:
Postmark Deadline is April 6, 2012

Costs:

| | Students who have taken EXPLORE through C-MITES | All other students |
|---|---|--------------------|
| • 1-week half-day | \$210 | \$280 |
| • 1-week full-day | \$390 | \$460 |
| • 2-week half-day | \$390 | \$460 |
| • Amusement Park Physics | \$410 | \$480 |
| • Robotics Programming and Design | \$300 | \$370 |
| • 1 st and 2 nd grade classes | -- | \$250 |

Optional Afternoon Programs

FITT

Offered by the Carnegie Mellon University Athletic Department, “FITT” Camp is an extended day alternative for students attending a morning C-MITES class on the Carnegie Mellon campus. Students will participate in daily swimming plus other activities focused on lifetime sports/skills using the Carnegie Mellon University Center facilities. Activities may include circuit training, tennis, golf, racquetball, squash, badminton, hikes/trails, soccer, ping pong, foosball, shuffleboard, Frisbee, kickboxing and track and field events. Students with physical disabilities will be reasonably accommodated. Students should bring a brown bag lunch, a bathing suit and their own water bottle.

This camp meets from Noon to 4:00 p.m. on June 18-22 and June 25-June 28 (nine days). The July camp meets from Noon to 4:00 p.m. on July 9-13 and July 16-19 (nine days). The cost of the program is \$35 per day and discounts are available for families with two or more siblings participating. Students may attend for one day, or as many days as they like. All fees must be prepaid. There will be no refunds or credits unless there is a medical excuse. For more information about the FITT camp, contact Pattye Stragar, Operations Manager of Fitness/Aquatics in the CMU Athletic Department at pls@andrew.cmu.edu or (412) 268-1235.

Winchester Thurston School

Winchester Thurston School offers summer camps, programs, and workshops for children from Pre-Kindergarten through Grade 12. Students choose from an array of options in adventure and play, sports and physical fitness, creative arts and academics. Winchester Thurston’s skilled faculty members develop and teach many of these outstanding programs. Full and half-day options, after camp care, lunch and transportation services are available. For our youngest campers, we offer “Three Little Bears,” a program designed by our early childhood experts just for three-year-old campers. For older campers, we offer special access to Winchester Thurston’s nationally recognized, award-winning *City as Our Campus* programming.

Summer camps, programs, and workshops are located at both the City Campus in Shadyside, and at the North Hills Campus in Allison Park. The City Campus offers access to state-of-the-art science and technology labs, art studios, and athletic training facilities. The North Hills Campus is situated on seven acres of rolling farmland that feature a spring-fed pond, woodlands, rustic gardens, a high tunnel, and a natural playground. The idyllic setting provides a place of imagination and wonder as well as a dynamic laboratory for experiential and interdisciplinary learning.

For more information, visit the website, www.winchesterthurston.org/summercamp or call Dionne Brelsford at (412) 578-7533.