The Academy After Hours Program is an outreach to area students seeking to pursue advanced work in pure sciences, humanities, mathematics and technology. Accomplished faculty members instruct the specialized courses. Several emphasize team/project work. In response to student requests, we constantly create new offerings. Proper placement is highly recommended because a few selections are sequential. Each course is designed for optimum student/teacher ratio, and is filled on a first-come, first-served basis. Students study in cutting edge technology facilities.

The Academy After Hours summer courses run for eight days. There are three sessions of courses per day:

1st Morning Session: 8:15 am - 9:15 pm
2nd Morning Session: 9:30 am - 12:00 pm (supervised cafeteria; no food served for lunch)
Afternoon Session: 12:30 pm - 3:00 pm

*1st Morning courses are $100*

Summer Session Dates:
June 26 to July 7; two weeks, Monday-Friday, then Wednesday-Friday.
June 26th, 27th, June 28th, June 29th, June 30th, then July 5th, July 6th, July 7th.

Courses are $300 each

Visit our website for online registration:
http://www.bergen.org/aah
Make checks payable to:
Bergen County Technical Schools
Send registration form and payment to:
Dr. Ken Mayers
Bergen County Academies
200 Hackensack Avenue
Hackensack, NJ 07601

Please note: Refunds will be issued only if requested prior to the first day of class, and are subject to a $50 processing fee.

For further information please call: 201-343-6000 ext. 2286

PLEASE VISIT: http://www.bergen.org/aah

**Jr Language and Arts**
(Grades 2-4)

Students in this session will have fun exploring reading, writing and the arts. Reading activities will include read-alouds, readers theatre, reading and discussing books, and a variety of other activities to further develop reading comprehension and fluency. Writing activities will include interviews, stories, personal narratives, poetry, and written guides, along with games and other activities to further develop writing enjoyment and proficiency. Arts activities will include drawing, painting, working with paper and other materials, and digital arts. Students are taught in small groups by level.

**Jr Math and Science**
(Grades 2-4)

In this summer session for junior mathletes and budding young scientists, students will review math skills and further develop them using games, hands-on materials, other materials, and digital arts. Students are taught in small groups by level.

**Jr Warmup**
(Grades 2-4)

Students will improve their math and verbal skills by doing worksheets, hands-on activities, and playing math and verbal games under an instructor’s supervision and guidance.
3D Modeling and Animation  
**(Grades 5-8)**
This course uses techniques in modeling, material generation, and key framing with 3D Studio Max. Components of the course include modeling (deformations), material generation, key framing (morphing), and rendering with video output for playback on a computer. 3D Studio Max (sometimes called 3DS Max or just MAX) is a 3D computer graphics and animation software program.

Analytical Writing for High School  
**(Grades 6-8)**
Writing for high school requires one to establish a position or argument and gather, understand, analyze and present perspective or argument and gather evidence. This course is designed as a writing workshop to accomplish this through examining student interests as well as a variety of social studies topics.

Animation for the Web  
**(Grades 6-8)**
Students will learn how to make animations that dazzle and entertain. Students will explore artistic techniques and applications and robotics with Arduino, Bluetooth, and Lego.

Awesome Scratch Programming  
**(Grades 5-8)**
Scratch is a programming language and multimedia authoring tool that offers a superb platform for learning structured programming while designing games, simulations, and interactive animations. In this course, through a project-oriented approach, students will become familiar with Scratch and learn software design, problem-solving, debugging strategies, and get introduced to the foundations of computer science (data structures, procedures, and algorithms). This course is a pre-requisite for more advanced Scratch courses which cover integrated applications and robotics with Arduino, Bluetooth, and Lego.

Be a Smart Leader: Emotional Intelligence  
**(Grades 5-8)**
Ever wonder why some kids “seen” more confident and have good people skills? This class will examine emotional awareness as well as applying and managing emotions. By developing these three key skills individuals are more likely to build self-confidence and personal growth. Emotionally intelligent people usually experience better health, more happiness and improved learning capacity. Utilizing basic psychology and the study of human behavior the class will partake in role playing activities, analyze movie scenes and other assorted learning activities to show how all people develop emotional intelligence. The final goal is for students to attain a greater sense of individual enlightenment, passion and well-being.

The Big History Project  
**(Grades 6-8)**
Where did we come from? What causes change? Where are we heading? Big History takes on these questions that originate with the dawn of time, and gives students a framework to tell the story of humanity’s place in the Universe. It’s more than a history course. Big History helps students see the overall picture and make sense of the pieces: it looks at the past from the Big Bang to modernity, seeking out common imagery, and poetic forms. Students will collaborate to compile an anthology of student writing composed during the course. No prior creative writing experience is necessary.

CAD & Lego Designs  
**(Grades 5-8)**
Students will use solid modeling, an efficient method, as an introduction to the design process. Students learn basic sketching skills to develop designs, drafting techniques, and use Autodesk Inventor Professional software to design and model a Lego piece. Students will also utilize sophisticated software features and descriptive geometry to increase design efficiency that will optimize design editing. Students will create their own Lego design and will learn about 3D printing technologies. In addition students will receive a customized 3D printed version of their Lego.

Computer Games  
**(Grades 5-8)**
This summer, exercise your mind by playing and designing computer games. The human fascination with game playing is long-standing and pervasive. Computer games are fun and challenge our ability to think. In many ways, they have provided simple proving grounds for many more powerful ideas. Get together with kids and explore the gamut of Internet games and learn how to create them.

Cool Chemistry  
**(Grades 5-8)**
This laboratory hands-on course will excite students when they learn how and why various chemical phenomena work. They will perform mini experiments to see why fireworks display so many colors, investigate what colors make up ordinary ink, experience the power of atmospheric pressure, learn what makes light sticks work, watch how you can boil water at room temperature or in a paper cup, and many others! Each session will begin with a brief lesson describing the scientific principles that will be witnessed that day before conducting the fascinating experiments. This chemistry class will be sure to create a reaction! Materials fee: $10 per student.

Creating Cool Websites  
**(Grades 5-8)**
In this course we will take a look at the wild world of biology, looking at the basics of this life science as it pertains to the world of the most bizarre and interesting organisms on the planet! Materials fee: $10 per student.

Crazy Biology  
**(Grades 5-8)**
Students will learn how to create and maintain their own website using authoring tools like Adobe Dreamweaver. Working with text, images, and simple animation and interactive elements, students will learn about and apply typographic and visual layout principles. They will also learn about features that can enhance the user’s experience of the site, from the first splash screen to the exit. By the end of the course, students will have learned how properly designed websites can offer a rich media experience.

Creative Writing  
**(Grades 5-8)**
This introductory writing workshop focuses on the reading, discussion and revision of students’ short fiction and poetry. Students will be introduced to models of fiction and poetry and will use these models to develop their own creative pieces. Students will enhance their storytelling skills and learn how to capture a reader’s attention while finding their own, unique voice. Topics covered will include character, setting, point of view, imagery, and poetic forms. Students will collaborate to compile an anthology of student writing composed during the course. No prior creative writing experience is necessary.

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**Critical Thinking: Reading, Writing, and Games** (Grades 5-7)

Critical thinking is important for everyone. We all use thinking processes constantly and we should be able to consider problems, reason and debate in a logical way. Students will practice reading and writing techniques to help them to problem solve and think more critically, plus learn ways to do so while playing games.

**Design. Make. Test:** Creating through Engineering (Grades 6-8)

This will be a hands on, exploratory class where students will work through an iterative process to build solutions to unique challenges. Topics such as critical thinking, designing through failure, and the encouragement of unique solutions, will be critical course objectives. Students will sketch, prototype, build, test, redesign and test again, through instructional format that fosters creative problem solving using science, technology, engineering, and mathematical thinking.

**Do You Love to Debate?** (Grades 6-8)

This summer course will introduce the debate skill sets which include public speaking, note taking, research and listening. Students will learn how to execute impromptu and persuasive speeches. Debate has the potential to impact most aspects of a student’s life as it provides an exceptional chance for students to cultivate and become proficient at life skills of oral communication and critical thinking.

**Drawing 101** (Grades 5-8)

This course focuses on drawing fundamentals that can be used as a foundation for further studies in art. Students will learn how to break down complex forms into basic forms, becoming capable of drawing almost anything! Students will then build up compositions both from life and from the imagination while exploring a variety of different styles and materials.

**Essential Skills** (Grades 6-8)

This course is designed to develop essential skills necessary for advancing oneself in today's rapidly changing world. Soft-skills will be emphasized to build students’ work habits and social networking skills that will help them build, maintain and expand social contacts and social capital. Also, political, economic, technological, cultural, environmental, and media-related issues will be researched, debated, and deliberated in order to facilitate situations for students to apply soft-skills in a civic capacity.

**Honors Algebra** (Grades 6-8)

This course emphasizes the development of problem solving skills, all of which are important for the SAT. Topics covered include linear and quadratic equations, inequalities, exponents, radicals, and polynomials. Knowledge of pre-algebra, including operations with positive and negative numbers, is expected.

**Honors Pre-Algebra** (Grades 5-7)

In this course we will explore mathematical concepts to prepare for algebra studies, including algebraic expressions, integers, equations, inequalities, decimals, fractions, ratios, proportions, percents, probability, area, and volume.

**HTML, CSS, and Javascript** (Grades 5-8)

For anyone curious about creating an advanced Website, this class is the ultimate backend tool kit. Whether you’re building a sophisticated commercial Web site or just creating an online spot to call home, good Web nowadays. Students will spend lots of time exploring the nuances of html, cascading Style Sheets (CSS), and Javascript as they implement them on their own web sites.

**Introduction to Java Programming** (Grades 6-8)

Introduction to Java Programming introduces students to computer programming techniques using the Java Programming language. Students will learn the structure, syntax, and the object-oriented programming paradigm of Java.

**Introduction to the Culinary Arts** (Grades 6-8)

Students will be introduced to the full range of culinary arts, including preparation, planning, cooking, and presentation. They will learn proper knife skills and explore a variety of cooking techniques. All culinary arts classes are led by BCA’s talented culinary experts and cover safety and food sanitation. Materials fee: $20 per student.

**MathCounts Training Camp** (Grades 5-8)

MATHCOUNTS® is a math enrichment and competition program for middle school students that takes place through a series of fun and engaging contests, at the school, regional, state, and national levels. This course is designed to introduce, motivate, and challenge students as they develop strong math skills for the competitions. The class will cover contest skills including teambuilding, communication, and rapid response, as well as the MATHCOUNTS® topics: Counting, Probability, Statistics (Mean, Median, Mode), Patterns, Pythagorean Theorem, Area, Three-Dimensional Geometry, Proportions/Ratios/ Percents, Algebraic Equations, and Number Theory.

**Mock Trial** (Grades 6-8)

Students in the Mock Trial course develop a greater understanding of the law and of the trial system in the United States. The course prepares them for middle school mock trial tournaments based on criminal cases. Topics include: basic knowledge of an attorney’s responsibilities and of court procedures, preparing an assigned case from both the prosecution and defense positions, assuming the roles of witnesses and attorneys, and presenting the case in the mock trial during the final class.

**Model UN** (Grades 5-8)

Do you like to debate? Do you like international issues? Then Model UN is for you! In this course we will learn about the current state of world affairs and how to argue and debate these issues using Model UN procedures. Students will use web resources to research the United Nations and other international bodies, as well as international issues. If you like learning about and debating international issues, this class is for you!

**Non-Routine Problem Solving** (Grades 5-8)

Students learn how to solve problems in number theory, logic, algebra, and geometry. Students work with experienced coaches and instructors in small, collaborative teams. They improve their problem-solving abilities by tackling challenges that involve creative thinking; they also learn strategies that can be applied to any kind of research. They are prepared to proceed to local, state, national, and international math competitions.

**Public Speaking** (Grades 6-8)

Dread speaking in class, giving speeches and oral presentations? This is the workshop for you! Improve your skills and confidence by becoming a better orator and learn techniques for writing and giving persuasive speeches and debates.

**Please Visit:**

http://www.bergen.org/aah
SOUNDWAVE AUDIO LAB
Curious how electronics and music come together? Soundwave Audio Lab is the course where students build unique devices that unite music and electronics! Projects may include a sound effects generator, mini amplifier or other unique device. Students complete all steps of building the projects and will learn how to interpret circuit diagrams, safely solder electronic components, test, design and prepare a custom enclosure. Students complete the project/s and take them home at the end of the course. Size limit of 6 students.

SWEET AND SAVORY
(Grades 6-8)
Students will learn to create and prepare finger foods and they will learn basic pastry preparations. Seasonal food items will be surveyed and discussed. Special presentation techniques will also be included. All culinary arts classes are led by BCA’s talented culinary experts and cover safety and food sanitation. Materials fee: $10 per student.

WRITING FOR LITERATURE
(Grades 7-8)
Using various genres, this class will teach you the skills and techniques for analyzing, discussing, and writing about literature. Students will respond to the works both through class discussion and in-class writing. You will then get individual feedback to improve your writing skills. This is an ideal class for students who want to improve their writing or who want to get some experience with the kind of writing found in the new SAT.

ACTING AND IMPROV
(Grades 5-8)
In this course, students will learn about different kinds of acting and the techniques actors use. We will play improv/ theatre games, read and act out excerpts from plays, and use our real life to tap into our inner superstars!

DIGITAL PHOTOGRAPHY
(Grades 5-8)
In this course, students will learn how to capture images with their digital camera and make them better using Adobe Photoshop. Students will learn about the features of the camera, rules about composition and photo editing techniques in Photoshop to create beautiful photographs. During the course, each student will create a portfolio of photographs for which they can be proud.

DRAWING MYTHICAL BEASTS AND FANTASTICAL HEROES
(Grades 5-8)
Students will learn facial proportions, basic observational drawing, and other techniques for creating drawings of heroes, villains mechanical monsters and anything else that can be dreamed up or imagined. Students will also learn shading techniques that will bring their creations to three dimensional life.

BREACKFAST BASICS
(Grades 6-8)
Get a jump start on the day by learning how to plan and prepare delicious, nutritious, and energizing breakfast foods and beverages. Students will develop culinary skills and apply principles of food preparation to produce a variety of foods. All culinary arts classes are led by BCA’s talented culinary experts and cover safety and food sanitation. Materials fee: $10 per student.

WRITING FOR THE SCREEN AND THE STAGE
(Grades 6-8)
This class will include reading and watching excerpts of famous plays, films, and TV shows, writing our own scripts, and workshop sessions so each student can see and hear their work read aloud and performed.

COMPUTER KEYBOARDING
(Grades 5-8)
Computer Keyboarding is a beginning course designed to introduce students to basic keyboarding and help students gain the skills necessary to type their own reports and papers in a reasonable amount of time. Emphasis is placed on development of speed and accuracy; and proper care of the equipment. Keyboarding is the foundation for developing entry-level skills in computers and business.

HISTORY IN THE MAKING
(Grades 6-8)
“Give me 20 hours, and I’ll give you the WORLD.” This course is designed to engage students in thought-provoking discussions regarding current events such as the environment, population growth, and conflict and resolution. Through stimulating dialogue and debate, students will explore these exciting concepts rooted in various regions of the world. Throughout the course, students will develop the necessary tools to better understand historical events and current foreign affairs.

MATH WARMUP
(Grades 5-8)
Students will improve their math skills by doing worksheets under an instructor’s supervision and guidance.

STRATEGY THROUGH GAMES
(Grades 5-8)
In this course, students will learn how to strategize from the simplest of games to those that test social awareness. The goal is to have fun while learning strategies that can be applied to a variety of situations. Students will also learn how to apply these strategies in business and politics, as well as in sports.

TOPICS IN COMPUTER SCIENCE
(Grades 6-8)
In this collaboration between CS First and Cartoon Network, students will create an animated story based on “The Amazing World of Gumball” TV series. Students will have fun learning the fundamentals of computer science and programming in this 1 hour / 8 days course. No prerequisite course is required.

VERBAL WARMUP
(Grades 5-8)
Students will improve their verbal skills by doing worksheets under an instructor’s supervision and guidance.

SCHOLARSHIPS AVAILABLE
Details about scholarship opportunities and a link to the online application are available on our website.
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For further information, course descriptions or to request a brochure, please call:

Dr. Ken Mayers, Director
(201) 343-6000 ext. 2286  Fax (201) 996-6967  e-mail: aahadmin@bergen.org