

Environmental Charter School at Frick Park Middle Grades Curriculum Overview

2011 - 2012





Environmental Charter School

2011-2012 Middle School Vision

The Middle Grades of the Environmental Charter School educates young adolescents who are experiencing a wide range of unique developmental changes that influence their learning, growth and academic performance. The program design for the middle grades supports a school environment and program of studies that best serves this age group. In addition, program decisions rest on research regarding best practice for secondary school curriculum and instruction. The middle grades program at ECS emphasizes the following:

- A highly personalized learning environment ensures every child is known well and belongs to a small cluster or team of 2-3 teachers who work collaboratively to address the learning needs of every child.
- An integrated curriculum in which the core academic subjects, including but not limited to science, environmental studies, social studies, language arts and applied math, are taught in an integrated way. Students experience a challenging curriculum of studies that is organized around thematic issues, significant problems, or essential questions, and is both rigorous and relevant. As students progress from 6 through 8th grade, the curriculum will shift to mirror the evolving social skills of students, from attention to the self to attention to the larger world.
- Every student will have an adult advocate. The advocate oversees the child's progress, facilitates a daily Home-base time, is a liaison for the child with staff and home, and provides mentoring and support across the day.
- A rich, choice-based exploratory curriculum designed to facilitate students' exploration and interest in areas such as the fine and practical arts, music and ecology. These exploratory courses enrich the core curriculum and help broaden student interests and talents.
- A daily schedule which affords students larger blocks of instructional time, necessary for addressing challenging research investigations, substantive projects, and authentic reading and writing workshop.
- A math program that addresses higher-level math concepts including pre-algebra and algebra, fosters an appreciation for how these concepts are useful in the real world, and differentiates learning to honor the varying needs of our students.
- Recess and regular physical education to address the developmental needs of this age group.
- Opportunity for students to be active participants in their own learning including, but not limited to, managing their own portfolios, co-leading their parent conferences, assessing their learning progress, and choosing areas of investigation or study.



Environmental Charter School

2011-2012 Middle School Curriculum Overview

Mission

The Environmental Charter School middle grades experience empowers students to engage in academics while enhancing creative and critical thinking. The middle grades experience at ECS also supports the socio-emotional development of the adolescent child, emphasizes the importance of a positive community atmosphere, and prepares a student for success in a high school program.

Academic Life

The ECS Middle Grades school day begins at 8:30 and ends at 3:45. It includes four core components as well as electives, physical education and a “home-base meeting.” Students in grades six and seven are part of a home-base learning community. Students in grade eight will prepare for the transition to high school through a departmentalized schedule.

Program Design

The ECS Middle Grades experience creates structures that provide academic and social supports for the adolescent child. Each structure intentionally provides support related to the specific academic and social needs of the middle grades student. The program is aligned to the Pennsylvania State Standards and the Common Core Standards. The core components are:

Home-Base Classroom Communities

The home-base classroom community allows for students to regularly engage with a consistent adult. Each day, students check in with the home-base teacher both on an individual level and as a peer group. Each morning, before the instructional day begins, students meet as a home-base team for a community meeting. This meeting reflects the unique needs of middle school students and the structure of their day. There are four components to the meeting: Greeting, Sharing, Group Activity and News and Announcements. Seated in a circle, all students are seen and acknowledged. They learn to greet each other with respect, communicate with power and authority without putting each other down, and listen to each other’s personal experiences. Lessons are reinforced with the language, routines, and rules provided by the Olweus Bullying Prevention Program. Students also talk about the business of the school day ahead and practice a wide range of academic skills.

Reading and Writing Workshop

The Workshop Model builds students’ identity as readers and writers. While students still need individualized instruction based on their academic needs, the Workshop model empowers students to become thoughtful, competent, and critical readers and writers. Text selections reflect social studies and science content, when appropriate. Vocabulary, grammar, and language mechanics are infused in the daily schedule to support students’ developing understanding of various texts and to build writing skills. In the development of

strong readers and writers, this comprehensive language arts program fosters motivation through meaningful curriculum connections, multiple contexts, and thoughtful experiences.

Integrated Studies

The Integrated Studies Block engages students in inquiry-based projects, supports students in developing science process skills (e.g., observing, analyzing, formulating hypotheses, experimenting, drawing conclusions and, when appropriate, formulating generalizations), and develops students' knowledge of social studies and environmental content. The Integrated Studies Block provides an instructional space where it is possible to make connections among the disciplines, and unite history, environmental science, civics, and geography to current events and topics deemed as core concepts adolescents care about. Integrated Studies produces students that are critical thinkers and problem solvers.

Mathematics

The Math Block engages students in real world mathematics, building context to the units of study. The philosophy of the mathematics program encourages active learning, and supports the idea that intelligence is incremental, flexible, and expanding. In developing student knowledge, mathematics teachers guide students in making observations, asking pertinent questions, and using effective methods to answer the questions addressed.

Science

The Science Block utilizes the key findings of successful middle school science programs: science instruction is relevant, focused, hands-on, inquiry-based, and integrated with other content. The Science Block provides students with content knowledge and experiences to apply in the Integrated Studies block, when applicable.

Exploratory Courses

The Exploratory Courses allow students choice and voice in their learning. A rich, choice-based exploratory course selection helps students to explore interests in areas such as the fine and practical arts, careers, research and outdoor learning. These exploratory courses enrich the core curriculum and help broaden student interests and talents.

Physical Education

Recess and regular physical education are incorporated into the schedule to address the developmental needs of this unique age group.

Course Overview

LANGUAGE ARTS

Students engage in a rigorous language arts program that emphasizes analysis of text in order to build content knowledge as well as critical thinking skills. The Reading Workshop builds students' identity as readers, focuses on students' voices and understandings, and creates a literary community invested in rich discussion and dissection of a variety of texts. The Writing Workshop provides authentic writing opportunities where students create authentic texts while building skills and engaging in daily practice with quality writing.

Language Arts Six. The sixth grade Reading Workshop focuses on further developing students' identity as readers. Throughout the year, the students examine the unit themes of *Individual Impact*, *Legacy*, *Relationships*, and *Power* and how they resonate in reading and writing. Reading Workshop units explore non-fiction, poetry, historical fiction, contemporary realistic fiction, and test-taking as a genre. In addition, students choose novels and non-fiction selections from a variety of resources that reflect their interests. Robust vocabulary, grammar, and language mechanics are also integrated into the Language Arts Block. The Writing Workshop reflects the development of the adolescent writer. Exposure to diverse content and exploration of various types of texts encourages students to explore different purposes for writing, as well as develop sentence fluency, paragraph structure, appropriate punctuation, and other language mechanics.

Language Arts Seven. The seventh grade Reading Workshop continues to build students' identity as readers. Units integrate literature, grammar, language mechanics, and robust vocabulary. Reading Workshop units include non-fiction, poetry, adolescent literature, and plays. Students examine themes of adolescent literature and engage in literary analysis of anchor texts. As students explore texts throughout the year, discussion revisits the overall grade level theme of *Equity*, building context and multiple perspectives of the concept. Students continue to develop critical arguments using texts as supporting evidence, and participate in active discussions about text on a daily basis. The Writing Workshop reflects the continual development of the adolescent writer. Exposure to diverse content and exploration of various types of texts encourage students to explore different purposes for writing, as well as develop sentence fluency, paragraph structure, appropriate punctuation, and other language mechanics.

Language Arts Eight. Eighth grade Language Arts reinforces skills while preparing students for high school level reading and writing assignments. Students focus on various perspectives in literature through the lens of a diverse collection of American writers. The *Perspectives* theme drives the literature discussion throughout the year, with increased emphasis on literary analysis and textual substantiation. In addition to building writing stamina and quality, writing assignments focus on the skills needed for successful communication in high school. Students continue study of language mechanics, grammar, and robust vocabulary and align these core language arts skills with quality writing. Students gain exposure to writing for various audiences, build repertoire in report writing, and learn effective steps for planning, drafting, revising, and polishing project work to be evaluated.

MATHEMATICS

The Middle School mathematics program develops students' knowledge of mathematical content and processes through the investigation of interesting problem situations. Our curriculum, *Connected Mathematics Project (CMP)*, is the only Middle School curriculum judged to be exemplary by a panel of mathematics and science experts selected by the Office of Educational Research and Improvement of the U.S. Department of Education (1999). Using this curriculum, students solve problems; observe patterns and relationships; make, test, and discuss conjectures generalizing these patterns and relationships; and apply the mathematics they learn.

In the process of solving problems and exploring concepts, students develop and refine a range of skills, including:

- **Communicating.** Students communicate the strategies they used to solve problems as well as their solutions. Using precise mathematical language, they organize, explain, define, describe, summarize, and defend their work.
- **Estimating.** Students estimate to help them predict and check their solutions.
- **Counting, calculating, and measuring.** Students understand the concept of sets of numbers, such as the set of whole numbers, or the range of numbers that can be plotted on a particular graph. They choose appropriate units to measure or count. They determine whether to use mental math, paper and pencil, a calculator, or another kind of tool to solve problems.
- **Comparing.** Students compare numbers, shapes, and quantities to determine if they are equivalent, proportionally the same, or subject to the same rate of change.
- **Checking.** Students monitor and revise their work as they go along, making sense of their solutions and checking the accuracy and effectiveness of their strategies. After solving problems, they reflect on the solutions. *Is the answer correct? If so, why is it correct?*
- **Representing.** Students “represent” (show) their work in many formats, including pictures, words, diagrams, graphs, charts, and tables. They “model” problems – laying out blocks to represent an algebraic pattern, for example.
- **Extending.** Students consider their strategies and solutions and ask themselves if they can apply what they have learned to another similar problem.

The instructional model used emphasizes the need for students to make sense of the mathematics they are learning and using. Current approaches are designed to focus students on the hard work of learning, rather than on copying what their teachers do. For example, the teacher first introduces the task, providing a context for the problem and helping students see connections between the new task and previous work. Next, students solve the problem individually, in pairs, or in small groups. Finally, students share with the class their understanding of the task, their strategies for solving it, their solutions, and the formats they chose to communicate those solutions.

Mathematics Six. CMP emphasizes inquiry and discovery of mathematical ideas through investigation of rich problem situations. Content includes number sense and reasoning with and about numbers, with focus on rational numbers and integers; geometry and measurement (2-D); and introduction to algebraic reasoning using tables, graphs and symbolic representations. The following CMP units will be covered during the year:

- Bits and Pieces II – Understanding Fraction Operations
- Bits and Pieces III – Computing with Percents
- Covering and Surrounding – Two-dimensional Measurement
- Variables and Patterns – Introduction to Algebra
- Accentuate the Negative – Understanding and Using Negative Numbers
- How Likely Is It? – Probability

Mathematics Seven. CMP continues to emphasize inquiry and discovery of mathematical ideas through investigation of thoughtful, contextual problem situations. Content includes number sense and reasoning with and about numbers, with focus on rational numbers and integers; ratio, proportion, and percent; geometry and measurement (3-D); statistics and probability; and algebraic reasoning, emphasizing linear relationships. The following CMP units will be covered during the year:

- Stretching and Shrinking (similarity with congruence as a special case)

- Comparing and Scaling (rate, ratio, proportion, percent, and proportional reasoning)
- Moving Straight Ahead (linear relationships expressed in words, tables, graphs, and symbols)
- Filling and Wrapping (3-D measurement)
- What Do You Expect? (probability and expected value)

Introduction to Algebra. CMP continues to emphasize inquiry and discovery of mathematical ideas. Content focuses primarily on algebraic reasoning, with the goal of helping students make a smooth and successful transition to Algebra 1 in ninth grade. This class uses a variety of resources, including CMP units and a traditional pre-algebra textbook, and covers the following mathematical topics:

- Measurement
- Using rational numbers (fractions, decimals, percents)
- Using variables
- Patterns leading to addition, subtraction, multiplication, and division equations
- Problem-solving strategies
- Coordinate graphs and equations
- Simplifying linear expressions and solving linear equations.

Algebra. This course continues to emphasize inquiry and discovery of mathematical ideas through investigation of rich problem situations. Content focuses primarily on algebraic reasoning and covers the four major topics of first-year algebra: patterns and variables, linear functions, non-linear functions, and systems of equations. The following CMP units will be covered during the year:

- Thinking About Mathematical Models (introduction to functions and modeling)
- Looking for Pythagoras (Pythagorean theorem, slope, area, and irrational numbers)
- Growing, Growing, Growing (exponential growth)
- Frogs, Fleas, and Painted Cubes (quadratic growth)
- Say It with Symbols (equivalent expressions and solutions of linear equations)
- Shapes of Algebra (linear systems and inequalities)

For students demonstrating need for Algebra II, Geometry or other upper level mathematics course, appropriate instruction will occur within the partnership agreement with City High Charter School.

INTEGRATED STUDIES

The Integrated Studies Block is an integration of experience and knowledge about human endeavors, human relations, scientific thinking, and environmental context designed to foster informed and ethical participation in society (adapted definition from National Council for Social Studies). Students engage in content, thinking, and experiences around a core question, and then reflect on the question from multiple perspectives. Although the content reflects a journey through history, geography, and the global environment, the core question transcends one time period, and students confront their own belief systems and viewpoints throughout the year.

Addressing controversial questions allows students at the middle level safe opportunities to confront conflicting viewpoints, moral dilemmas, and clashes among differing values. Instruction during the Integrated Studies Block facilitates critical thinking, decision making, and problem solving --all fundamental qualities for leading a productive and purposeful life in a democracy. A judicious examination of these issues helps students integrate knowledge and skills to build a personal value system and evaluate environmental issues facing the globe. The content examined in the Integrated Studies Block spans geography, environmental science, civics, history, and economics.

Grade Six Integrated Studies. Core Question: *How is the world impacted by CHANGE?* Students explore four big ideas over the course of the year, examining history of the ancient worlds and comparing these events to the current world. Historical content in sixth grade spans the establishment of the early hominids to the rise and fall of the Romans, Greeks, and other ancient cultures. Students explore the ideas of legacy in culture in the past and in today's society, examine the influence of relationships throughout history, and delve into the effect of power on civilizations. Students connect with history and current events through rich literature, projects, investigations and research. The Essential Questions for Grade Six Integrated Studies include: *How Do Individuals (and individual societies) Create Global Impact?, How Does Technology Impact the World?, How Do Relationships Impact the World?, and How Does Power Impact the World?*

Grade Seven Integrated Studies. Core Question: *How is the world impacted by EQUITY?* Students explore three big ideas throughout the year, examining how physical and human geography impact equity. As with all aspects of the middle grades curricular study, students look at geography through a historical lens, and then apply content and thinking to current events. Content in the first semester includes physical and human geography, general geography skills, and an overview of regions of the world. During the second semester, grade seven students examine how resources impact equity in the Northern and Southern Hemispheres, with a focus on settlement patterns, freshwater resources, urban sprawl, consumption patterns, migration and population, and collaboration/cooperation among nations. During the final unit, students complete a comparative analysis of the forces (geography, culture, resource availability, population and politics) which define equity between (and among) nations in the Northern and Southern Hemispheres. The Essential Questions for Grade Seven Integrated Studies include: *How Do Cultural Forces Impact Equity?, How Do Resources Impact Equity?, and How Does Equity Impact the World?*

Grade Eight Integrated Studies. Core Question: *How is the world impacted by DIVERSE PERSPECTIVES?* Throughout grade eight, students explore how perspectives dictate reactions and thinking, both as individuals and as a society. With an emphasis on key events in American History, students interpret and evaluate major events through diverse perspectives. These major events include the Revolutionary War, Westward Expansion, the Civil War, the Industrial Revolution and the entry of United States to the global stage in the 20th Century. Students build critical thinking skills throughout this course by examining perspectives of American History outside of local context, with emphasis on contrasting viewpoints both within the United States and abroad. As with the science course content for grade eight, students build a framework for thinking like a global citizen, and develop thinking strategies to evaluate information.

SCIENCE

Science Six. Science in grade six builds on the process skills developed by students in the K-5 Environmental Science coursework. Using a hands-on approach to refine science process skills and build content knowledge, students examine the core principles of physical science. Content strands include: Force and Motion; Simple Machines; Matter and Mass (Atoms and the Periodic Table of Elements); Energy and Waves; and Optics. Each strand includes discussion of science effecting current events, engineering and design choices, and global impact on the environment. Students also gain exposure to career choices in the field of physical science throughout the course of study.

Science Seven. Science in grade seven focuses on Life Science. Students review the core concepts developed throughout the elementary science program, and build new knowledge around Life Science. Labs, outdoor investigations, and other hands-on explorations with scientists in the field build expertise and knowledge throughout the course. Units of study include: Cells, Heredity and Unicellular Life; Taxonomy and the Classification of Life; Ecosystems and Interactions (A Global Investigation); and Human Biology.

Science Eight. Science in grade eight examines Human Ecology through various systems. As a unique capstone course to the program, students examine global systems and identify ways humans interact negatively and positively within each. Students engage in research, interviews, and field experiences to gain knowledge and create meaningful connections between science and other disciplines. The capstone science course requires students to become ambassadors of science education both within the school community and with the larger region. Final project work includes a presentation focused on content acquisition, reflection of the student's engagement in science literacy throughout the ECS curricular program, and clear use of the science process skills. Units of study include: Human Water Systems; Energy Production and Use; Human Food Systems; Trash and Wastewater Treatment Systems; and Impacts of Human Systems on Wild Systems.

PHYSICAL EDUCATION

Physical education contributes to the total well-being of all students through their participation in activities designed to meet their physical, social, emotional, and intellectual needs. Unlike other curricular areas, physical education is the only one to satisfy these needs primarily through physical movement. The role of physical education is to foster cardiovascular fitness, muscular strength and endurance, lifetime skills, sports-related skills, stress management techniques, safety consciousness, and standards of fair play through activities and sequential learning experiences that are unique to our domain. The students acquire the knowledge and principles of human performance that will enable them to effectively select and practice lifetime fitness. The physical education curriculum for the middle grades enables students to:

- Improve personal fitness (muscular strength and endurance, flexibility, and cardio-respiratory and cardiovascular conditioning) according to ability level.
- Develop fundamental motor skills for stress reduction and participation in lifetime activities or sports.
- Experience a wide range of physical activities that will enable each individual to make informed choices about selection and level of involvement.
- Observe and maintain high standards of safety and fair play.

HEALTH

The goal of health education, and thus the health education standards, is health literacy. Health literacy is the capacity of individuals to obtain, interpret, and understand basic health information, products, and services and the competence to use such information, products, and services in ways that will enhance personal, family, school, and community health. Health education is essential to the health and learning of adolescents. The health and health-related behaviors of students have a direct impact on their school attendance and ability to learn.

Students in grades six through eight will participate in weekly health instruction taught by the Physical and Health Education teacher. The health education curriculum is aligned to state and national standards and will enable students to:

- Examine change, growth, and conflict in relationships to determine ways to effectively address these issues with peers, family, and others.
- Identify ways to express care, consideration, and respect for self and others to build positive relationships.
- Explore positive stress management and other strategies to cope with change.
- Investigate the relationship among personal health behaviors, which include cleanliness, sleep, nutrition, and physical activity, to determine how these impact health promotion and disease prevention.

- Explore the physical, social and psychological changes that occur during puberty to determine how they impact behaviors, communication, and decision making.
- Examine the structure and function of the human reproductive systems to identify the processes involved in reproduction and use appropriate terminology to explain these processes.
- Utilize various communication methods to convey accurate health information, messages, and ideas.

ORGANIZATION and STUDY SKILLS

Study Skills Six and Seven. The development of core study skills is essential to academic success in the middle grades and beyond. All students complete an intensive quarter that defines structures and strategies for maintaining organization and effectiveness in academic areas. Students learn routines, establish a clear system for self-management and present their system to parents or guardians for additional support. Follow-up and continual support for established study skills and routines occur during the home-base classroom community.

EXPLORATORY COURSES

The Exploratory Courses allow students choice and voice in their learning. A rich, choice-based exploratory course selection helps students to explore interests in areas such as the fine and practical arts, music, and ecology while they build knowledge about careers and authentic research. These exploratory courses enrich the core curriculum and help broaden student interests and talents. Students in grades six through eight have the opportunity to select three exploratory courses over the course of the school year. Students are required to select one exploratory class from Art, Music, or Backyard Ecology to round out their educational experience. An additional course, Beginning Latin, will be offered in grade eight.

ART

Building Foundations in the Field 601. Students in this course hone their painting and drawing skills through projects that explore Frick Park through the eyes of an artist. By working on site with pencil, watercolor, pastel, and more, students learn the secrets of artists who created work similarly throughout history. A culminating art opening takes place at the end of the quarter to exhibit the fantastic field work we produce!

Comic Books and Cartooning 602. We love to read and watch them, why not learn the process behind one of our favorite pastimes? Focusing specifically on hand drawn techniques and story development, students imagine and create a character, a story or series of stories, learn to bind a book, and even create a 3D figurine! Students finish this exciting course with a trip to Toonseum, a cartooning and animation museum in downtown Pittsburgh.

Pumped Up Puppets 603. In this course, students take a trip to Construction Junction and Creative Reuse Pittsburgh to get inspired by these often overlooked resources! Then, students create gigantic self-portrait figural sculptures that can be manipulated as puppets. During the course, students document their experience with creating these large scale sculptures using digital photography and sketchbooks. As a culminating experience, students take a trip to see some of Pittsburgh's most magnificent puppets!

Fantastic Flowers 604. Flowers and other plants have been a favorite subject of artists throughout history. From the Impressionists to Georgia O'Keefe to Andy Warhol, it's easy to see how artists interpret flowers in different ways. Participants in this spring course will learn about and work in the styles of many different artists spanning history. One week students might create a detailed pen and ink rendering of a flower at Phipps, and the next they might use the ECS Living Laboratory to create Pop inspired paintings.

After learning about many techniques and styles, students choose their own style to work in and embark on an exploration of self expression using flowers as the subject!

Drawing, Designing, and Doing 701. After Foundations or any of the 6th grade course offerings, students continue to cultivate techniques and develop a sense of personal style in their art. Using self portraits throughout art history as inspiration, students maintain a sketchbook and journal, visit with local artists, and develop an independent project that represents the self in a variety of media. A special emphasis will be placed on mixed media work as students experiment with the ways materials can evoke mood and feeling. Students showcase their work at the end of the quarter and create oral memoirs that can be listened to while viewing the self portraits.

Fresh Fashion! 702. Fashion is an easily visible way to express ourselves! In this course, students learn about screen printing, reconstructing garments, creating custom shoes, and more! A strong emphasis will be placed on reusing and rethinking materials. Students meet up with local fashion designers who are creative in their collaborations and intentional in their choice making. At the end of the quarter, students present a final show to show off fresh fashions!

Creative Containers-Functional Objects in Sculpture 703. From ancient artifacts to contemporary industrial design, we will look at how design affects and enhances our daily lives. Function plays a huge factor in what we choose to use! Additionally, specific designers have a very carefully defined personal style, and students work on building their own style during the course. Using repurposed materials, students create a sculptural container garden for the school with advice from local landscape architects.

Amazing Animals 704. How are animals represented in art, and what meaning do they have for an individual artist or an entire culture? In what ways do scientists rely on artists to provide visual information in the world of biology? Using these questions, World Cultures, and Art History as a foundation, students explore several ways artists use animals to make art! Specifically, students use printmaking methods to explore the topic: woodcuts, etching, and screen printing! Developing their exploration in printmaking, students utilize pets and the Pittsburgh Zoo to hone observational skills and create work with personal meaning.

Observational Drawing and Painting 801. This culminating course in traditional art media prepares our 8th graders for high school art and beyond. Using advanced skills and techniques, 8th graders embark on a quarter long project using objects and figures as subjects. This course helps students build a portfolio for high school, deepen sketchbook and planning skills, and continue to forge the rich relationship students have with art.

Art in the Open 802. How does art enrich our community? Students look at the ways public art in Pittsburgh and throughout history has enhanced our neighborhoods, portrayed community connections, and illustrated an appreciation of aesthetics. From graffiti to gigantic sculpture, art is everywhere in our city. In this course, students explore the artist and community relationship and how it affects the artistic choices we make. Students learn to design, plan for, and collaborate as a group to create a public mural. By going through the process with local muralists, students experience the project from start to finish in a realistic way.

Bookmaking and Printmaking 803. In this course, students are introduced to the art of bookmaking and printmaking. In the first half of the quarter, students learn about and explore several different printmaking techniques such as block printing, etching, woodcuts, and screen printing. In the second half, students will work on creating an altered book exhibited in a culminating gallery show.

Projects and Partnerships in Pittsburgh 804. This authentic experience utilizes local studios and local artists to get our 8th graders involved in materials many middle school students haven't experienced. This course will change year to year and may involve partnerships with the Pittsburgh Glass Center, Manchester Craftsmen's Guild, and Artist Image Resources, to name a few.

MUSIC

African Drumming 601. This course discusses the history of African drums, the communication aspects of the drum, the different types of drums such as the conga, tubano, djembe, bongos, hand drums, etc. Percussion techniques are taught, such as dynamics, hand placement, and pitch. The student studies with hands-on experience, playing beats and rhythms frequently used in African drumming. Students explore the dynamic of playing in a group and listening to each other, as well as learning how to read intricate percussion rhythms.

Guitar Class 602. This course focuses on learning how to play the guitar. Students learn the basics of the guitar, as well as the different guitar types (acoustic, electric, and classical). Students examine rhythm and lead guitar styles and learn finger picking and flat picking. Discussion and analysis of influential guitarists such as Segovia, Les Paul, Hendrix, and others drive the experience. Students also explore the styles of music utilizing a guitar, and probe the influence the guitar has had on each of these styles. Let's get ready to rock!

Music Theory 603. What is a coda? What does $\frac{3}{4}$ time signature mean? What does a fermata mean? Anyone interested in playing a musical instrument of any type should know some music theory beyond the classroom basics. This class turns you into the music master. Students learn to read music and develop an appreciation for the art form. This course is a must for those interested in taking private lessons, studying music in the future, or just understanding the notes and chords to your favorite song you love to sing.

Improvisation 604. This course unleashes the rock star in you. Students examine soloing techniques and engage in singing techniques geared to different musical genres. Students learn the importance of scales, arpeggios, phrasing, and the pentatonic scale in music. Over the course of the class, Students improvise in different styles and begin to understand how a solo construction. Students learn mallet techniques with the alto and soprano xylophone to build improvisation technique.

Recording 701. This course discusses the basics of recording music in a recording studio. Students record songs from start to finish, and understand how recording engineers take the sounds and create the final mix. Recording techniques, microphone placement, editing, sampling, overdubbing, looping, and mastering will be taught in a hands-on environment. Students examine how a song is produced from scratch, and learn all the details of what goes into producing the final product, ready for the radio.

Songwriting 702. Designed for those students interested in composing their own songs, this course exposes students to the connections between writing and music. Students begin with an idea, musical or in words, and complete a song by the end of the course. Students examine song structure, music theory, phrasing, lyric composition, instrumentation, poem to song conversion and song styles. Playing a musical instrument is not a requirement of this course.

Music History 703. Ever wonder how music emerged to where it is today? Where did rock music originate? Students examine the influence of classical, jazz, blues, pop, hip hop, reggae and other music styles throughout history. Featured artists include Beethoven, Mozart, Louis Armstrong, Ray Charles, Chuck Berry, Elvis Presley, The Beatles, Michael Jackson, and many other artists. Students discuss the impact of

musical events such as Woodstock, The British Invasion, The 80's New Wave sound, Metal, and Hip Hop, as well as the instruments that made the unique sound of each era.

Movie Soundtrack 801. This course analyzes music in films and the powerful way music scores influence particular scenes on the big screen. Students listen to the works of movie composers such as John Williams, Randy Newman, and Henry Mancini and analyze the impact of music in film. The course also explores sound effects in film, and the use of everyday household items to make many of the sounds used in film and on television today. Students create an original movie during the course, and add music and sound effects to their piece as the culminating project.

Natural Orchestra 802. What better way to show off ECS than to have an orchestra comprised of natural elements of our world? Students design instruments using sticks, stones, leaves, branches, bones, and other items in nature. Students write original music using their “creative” instruments, and perform their compositions as a culminating project. Students explore classical form, and utilize this form for composition and performance.

Be a DJ/Soundman 803. Interested in learning about the creation of modern mixes? Students learn DJ techniques such as beat mapping, scratching, fading, and tempo detection. Students discuss the importance of sound reinforcement and examine the intricacies of sound engineering.

Keyboards 804. Have you ever wanted to learn how to play piano? Keyboards are evident in just about every song ever recorded. Students explore keyboard techniques, including triads, scales, one and two hand playing, accompanying a vocalist, adding different synthesizers to compositions, chord substitutions, and composing. Students examine MIDI and sequencing to create complete compositions using only the keyboard. Students also discuss sampling in modern music to build understanding of how songs are created using sampled sections.

BACKYARD ECOLOGY

BE 601 Birding in Frick Park. What species thrive in an urban environment? Can bird species be an indicator of ecosystem health? What mechanisms draw in certain bird populations and push out others? Throughout the duration of this course, students build identification skills, learn basic ornithology, and examine potential risk factors impacting certain bird populations. At the conclusion of the course, students draw conclusions and make predictions about bird populations based on data collected throughout the quarter.

BE 602 Invasive Vs. Natives. What is the current status of native plants and animals in Frick Park? What restoration projects are currently in place? Can the urban ecosystem ever fully recover to a more “native” state? What do urban ecologists believe are the next steps in revitalizing the urban natural world? Students examine the history and current status of native and invasive species in Frick Park, explore current practices, and predict potential outcomes for the natural world based on data collected.

BE 603 Geology of Frick Park. Taking rock exploration to the next level, students examine rock samples from around the park, and meet with local geologists to track key events in geologic history within the park setting. Students explore questions around the study of rocks, use observation skills to uncover geologic mysteries, and learn characteristics and properties of rocks and minerals found in the region.

BE 604 Stream Exploration. Students practice water quality analysis and refine skills required to identify macroinvertebrates throughout the duration of this course. Building on previous experiences in water investigations, students explore population and biodiversity of the local lotic and lentic systems, conduct

water quality tests throughout the park, and draw conclusions about stream biodiversity based on data collection in the field.

BE 701 Nine Mile Run Watershed Investigation. Utilizing local watershed organizations, water ecology experts, and local officials, students explore the current infrastructure of the Pittsburgh sewer system and design solutions based on data and research collected. Upon completion of the course, students present findings and recommendations to an audience of defined stakeholders and decision-makers in the community.

BE 702 History and Future of Frick Park. Students learn the history of the park and its layout, and explore the changes that have occurred in the utilization of the park's resources. In addition to hiking the trails, students examine the importance of urban design and green space preservation, meet with practitioners in the field, and create a series of recommendations based on data and information collected from an identified problem.

BE 703 Tree Identification and Urban Growth. Students explore the tree population of Pittsburgh and the geography of current species around the city. After taking stock of current growth in Frick Park and around the city, students uncover the impact of blights, disease, age, and development on the current urban forest. Discussions with key non-profits, the City Parks officials, and industry professionals drive current content and allow thoughtful dialogue to emerge. As a culminating project, students work with a key official or organization to implement a strategy supporting urban tree growth.

BE 704 The Forest Floor. Students take a closer look at the organisms and plant life that live and grow right under their feet! Throughout this course, students conduct an inventory study of small critters and plant life in various sections of the park. From mushrooms and ferns to pill bugs and worms, students identify, record and categorize data they discover. As a culminating project, students complete a comparative biodiversity inventory of Frick Park and another city park, and draw conclusions based on the data collected.

BE 801 Community Impact Project. FALL SEMESTER. Students engage in a semester long project that requires research, problem solving, and community action. The intent of the capstone project is to provide a lasting positive impact on the community or region.

BE 802 Community Impact Project. SPRING SEMESTER. Students engage in a semester long project that requires research, problem solving, and community action. The intent of the capstone project is to provide a lasting positive impact on the community or region.

LANGUAGE

Beginning Latin 801. The goal of the Beginning Latin course is to facilitate acquisition and proper usage of modern languages, especially Spanish, and English. Students will be challenged to use Latin as a means of communication and explore the language and culture of Ancient Rome, which has greatly influenced the western tradition. Students will use their Latin vocabulary to decipher scientific terms, use their knowledge of Roman culture and mythology to better understand literature, and use Latin to strengthen their understanding of other subject areas



Environmental Charter School Student Services

Philosophy

ECS is dedicated to maximizing the strengths and potential of all students so they may become self-confident, well-rounded, responsible, and productive citizens.

Believing that each and every individual has merit, the Environmental Charter School at Frick Park recognizes that certain learners within the school population have unique abilities, interests, needs, and potential for accomplishment. These characteristics necessitate systematic, continuous services to present unique and appropriately differentiated curricula and learning opportunities responsive to individual learning rates, styles, and interests.

Special Education

Special Education is an integral part of the total education system, not a separate entity. It is a process for enhancing the effectiveness of the system to meet the needs of all students. Students with disabilities are educated in an age appropriate environment with non-disabled persons to the maximum extent possible. Students are served within the regular classroom setting to the degree that is consistent with meeting the specific needs of each student and providing an appropriate education and environment for all students.

Students, regardless of their educational needs, are a part of our school community, which actively promotes and fosters positive attitudes toward and full acceptance of all students. Staff are empowered to meet the educational needs of all students. In-service training is provided to help teachers acquire the necessary skills in order to provide a positive, supportive, and safe educational experience for all students. Regular and Special Education teachers engage in effective co-teaching to maximize student learning. Classroom learning environments enhance instruction for all students.

A student's Individualized Education Plans (IEP) is the product of successful collaboration between the parent, student, and school. IEP's for students in grades 7 and 8 thoughtfully approach the students' transition to high school and adulthood.

Gifted Education

Gifted students need opportunities to think abstractly, work at various rates and levels of complexity, and pursue tasks independently. In addition, students eligible for gifted services need opportunities to learn with others of like abilities, as well as opportunities to develop social relationships with others of all abilities.

The Environmental Charter School believes that:

- Giftedness is developmental; it is potential which must be nourished;
- Gifted students share some characteristics with all other children;
- and

- There is variability among the gifted.

The Environmental Charter School developed a relationship with Phipps Conservatory and Botanical Gardens Education Department to support its gifted learners. In 2008 Phipps Conservatory became a satellite partner for The Fairchild Challenge, a multidisciplinary, standards-based, environmental education program designed and initiated at the Fairchild Tropical and Botanic Garden in Miami, Florida.

The Fairchild Challenge encourages middle and high school students to investigate environmental issues, to devise imaginative and effective responses, and to take action at many levels through a menu of challenges. Each challenge option is designed to appeal to a broad range of students with varying interests and abilities by incorporating visual, literary and performing arts, research, and community action. These challenges guide individual student's gifted education plan goals and balance curriculum acceleration, compacting, and enrichment. Students have the opportunity to share their work and compete with individuals from other middle schools in Allegheny County at Fairchild Challenge events hosted by Phipps Conservatory and Botanic Gardens.

Child Study Team

The Child Study Team (CST) is a comprehensive, multi-tiered, intervention for students at academic or behavioral risk. CST allows parents and educators to identify and address academic and behavioral difficulties prior to student failure. CST provides students with targeted progress monitoring and strategic intervention. Monitoring student response to a series of increasingly intense interventions assists in preventing failure and provides data that may guide eligibility decisions for special education services.

The CST program is modeled after Pennsylvania's Response to Instruction and Intervention Model.

Positive Behavior Support

The Middle Grades of the Environmental Charter School participate in a school-wide positive behavior support system. The school will adopt a research-based intervention program called the Principal's 200 Club (P200Club). The P200Club is a school-wide all positive, prevention focused intervention. It applies to all students, all staff and all settings. It consists of several evidence based behavior management practices. Specifically it utilizes: 1) verbal praise, 2) public posting, 3) the mystery Motivator, 4) a variable reinforcement schedule and 5) a group contingency.

Olweus Program

The *Olweus Bullying Prevention Program* is designed to improve peer relations and make schools safer, more positive places for students to learn and develop. Goals of the program include:

- Reducing existing bullying problems among students
- Preventing new bullying problems
- Achieving better peer relations at school

The *Olweus Bullying Prevention Program* is rooted in weekly classroom meetings that empower students to advocate for themselves, embrace differences, and respect others. Meetings will take place in the home-base community.

The *Olweus Bullying Prevention Program* is implemented at the ECS's Upper and Lower Schools. Students will build upon experiences as they matriculate.

Environmental Charter School Homework Policy for Middle Grades



Homework Assignments

Students participate in relevant and meaningful homework assignments that spiral content learned in class. This means that students should repeatedly practice familiar concepts in new and different ways. Homework is not be counted toward students' grades for that subject area. The purpose of homework assignments is to practice learned skills.

Grade	Time Spent on Homework
6	60 minutes per day*
7	60 minutes per day*
8	60 minutes per day*

* nightly minutes exclude project work

Homework Policy Rationale

According to the National Education Association, students should be participating in meaningful, individualized assignments that reflect students' interests and acquired skills (National Education Association, 2002). Research shows that homework is most effective when concepts are repeated throughout several assignments (McPherson, 2005). After reviewing current research, the NEA claims that "at the elementary level, homework can help students develop study skills and habits and can keep families informed about their child's learning" (National Education Association, 2002).

According to Harris Cooper, leader in educational research and director of Duke's Program in Education, students should participate in the "ten minute rule." First grade students should spend 10 minutes per day, and teachers should increase the amount of homework by 10 minutes each year. Cooper claims that current research is consistent with this recommendation (Office of News and Communication Duke University, 2006). According to Cooper, homework is an important part of learning. However, "too much homework can be counter-productive for students at all levels" (Office of News and Communication Duke University, 2006).

Works Cited

McPherson, F. (2005). *Homework-Is It Worth It?* Retrieved from www.memory-key.com.
National Education Association. (2002). *Research Spotlight on Homework*. Retrieved April 2010, from National Education Association: www.nea.org/tools/16938.htm
Office of News and Communication Duke University. (2006, March 7). *Duke Study: Homework Helps Students Succeed in School, As Long as There Isn't Too Much*. Retrieved April 2010, from Office of News and Communication Duke University: news.duke.edu/2006/03/homework_print.htm



Environmental Charter School Athletics Program

Athletics

It is the position of the National Association for Sport and Physical Education that all middle school students should have the opportunity to participate in a wide variety of organized sports and physical activities. The Environmental Charter School at Frick Park's Middle Grades interscholastic sport program is based upon and implemented in a developmentally appropriate way that focuses on student needs and interests and complements the academic program. Athletic programs at ECS strive to promote participation, competition, fair play, responsibility, and acquisition of skills.

All students are encouraged to participate in after-school athletics programs regardless of their ability and prior experience with organized sports. The primary purposes of these programs are to provide opportunities for students to:

- Improve self-esteem and feelings of competence through positive interactions with their peers and adults
- Acquire new skills and refine those previously learned
- Learn to function effectively as members of a team or group
- Improve personal health and fitness levels
- Have fun and enjoy physical activity