



ECMS Program of Studies

2027-28 School Year

Environmental Charter Middle School

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ECMS Program Guide

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WHO WE ARE

Our Mission

The mission of ECS is to educate each student to high academic standards using innovative curricula that will foster knowledge, love of, and respect for the environment and preserve it for future generations. We grow citizens.

Our Vision

Every ECS graduate will be an actively engaged citizen driving thoughtful change in the world around them.

Our Guiding Principles

Catalyst: We transform students into global thinkers.

Character: Students who understand the impact of their decisions in the world are, by definition, more responsible and empathetic.

Collaboration: We value collaboration with our community and recognize the power of systems thinking. We believe that respectful, transparent, and reflective dialogue among our constituents (students, families, faculty, neighbors, and regional partners) is necessary for elevating educational experiences for all learners.

Commitment: We are committed to changing the world and opening minds, and that can only come from a vibrant mix of students, families, teachers, staff, and partners, which is about forming a diverse community.



How Is ECMS Different from a Traditional Middle School?

ECMS aligns content and skills within a greater societal and environmental context. This translates to a different type of course descriptor or syllabus to describe how each piece fits together. It is through these adopted practices that we are redefining what content is covered, what skills are addressed, and how culture and being are infused. We are challenging the notion that a subject area drives the learning, and subsequently, we are designing a middle school experience that evolves from a different framework.

ECMS emphasizes ecological literacy, critical thinking, and the elevation of culture in the learning process. As such, this program will fundamentally re-envision the traditional middle school experience and uniquely address the needs of 21st century students. Our program is nestled in the following key areas:

Community is School. We offer diverse opportunities for our students to expand their educational horizons outside the classroom, while also encouraging community partners to engage with our students. Our primary objective is to foster a strong sense of belonging and empowerment among students, connecting them to local, regional, national, and global communities.

Active, Engaged People. Students will learn how to engage in community dialogue and decision-making by developing the avenues to voice and activism. ECMS's goal is to create learning opportunities that unite us toward a common humanity.

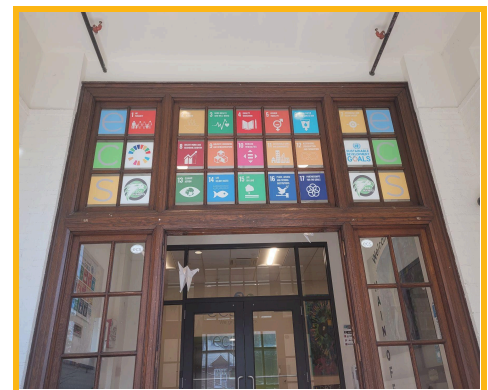
Change Agent Persona. ECMS provides experiences for students to discover the relationship between self and the world, and how one can foster resilience, understanding, and hope when faced with complexity.

Health and Well-Being. Health and well-being are cornerstones of the ECMS experience and for all members of the community, building on the focus of socio-emotional wellness as a foundation for active learning.

Innovation Conditioning. As conditions for innovation continue to increase, ECMS remains committed to expanding innovative practices and endeavors. This includes spaces that encourage collaboration/innovation, asset surveys to support best work, and opportunities to experiment and fail.

Educating for Sustainability. As we work to prepare our students to be active, engaged, and empathetic citizens of the global community, our students focus on the United Nations' 17 Sustainable Development Goals and the ways in which they manifest themselves in the natural world and in our social and economic fabric. Our pedagogy pushes students to think critically, creatively, and collaboratively so that they can become effective problem solvers whose decisions will help make life on Earth more sustainable for everyone.

8th Grade Academy. Our 8th grade academy is designed to help students obtain the skills to be successful in high school. ECMS has a dedicated team of educators who work with our high school to foster relationships and experiences that will enable them to hit the ground running on the journey to high school, graduation and beyond.



COURSE INFORMATION

English Language Arts

At ECMS, we believe in a well-rounded, culturally responsive, anti-racist, and anti-bias literacy education that fosters strong conceptual understanding, practical skills, and literacy habits. Our Middle School ELA program offers engaging learning experiences that promote both academic growth and social-emotional well-being. As part of this, students are required to read a self-selected book each night, with teacher support to ensure it matches their reading level. Each quarter, they complete one book and submit a response—whether an essay, vLog, or slideshow—sharing their opinion and supporting it with evidence from the text.

At ECS, we use CommonLit 360. CommonLit 360 develops effective reading, writing, speaking, listening, and critical thinking habits. The CommonLit 360 curriculum emphasizes a student-focused and student-led exploration of thought-provoking texts and topics across a wide variety of units. By engaging students in effective habits of reading, writing, speaking, listening, and critical thinking, the curriculum cultivates self-reliance and independent learning. Throughout the curriculum, students engage in significant collaboration and reflection, developing the skills necessary to analyze complex ideas and communicate their understanding effectively. Integrating these skills further enhances students' understanding, as success in one domain often leads to success in others. The curriculum's structure and content are designed to foster the development of lifelong learning habits that students can carry with them beyond the classroom. Students participate in cooperative tasks, working together to analyze sources and engaging in authentic research and argumentation to refine their viewpoints. This collaborative approach to learning helps students develop critical interpersonal skills, fostering a sense of community within the classroom and promoting a deeper understanding of each unit's content.

The Instructional Experience

Most middle school ELA classrooms are co-taught by a regular education and special education teacher. ECS teachers know their students as learners and provide students with specific and timely feedback. Several instructional models are utilized in order to maximize learning. These include:

- *Small Group Instruction* → Allows teachers to tailor instruction to their students' needs.
- *Collaborative Groups* → Students work together to complete tasks and discuss materials in depth.
- *Station Teaching* → Provides students with opportunities to practice specific skills.

Mathematics

In middle school math, students work together to explore and solve problems, sharing diverse ideas and strategies. They engage in real-world math tasks while mastering PSSA Anchors, Eligible Content, and PA Common Core Standards. We use Carnegie Math Curriculum. In 8th grade, students can take Math 8 or Algebra 1, with placement data. Algebra 1 students will take the Keystone Exam at the end of the year.

Teachers create and implement in-class extension and scaffold opportunities, using the curriculum and other resources for enrichment opportunities. Students can access additional math enrichment and intervention opportunities during our Level Up time. For example, our Algebra students get a chance to opt into Geometry, while students who struggle to perform at grade level get instruction to access the grade-level curriculum.

6th Grade Content Focus (Math6)

- *Composing and Decomposing* → Examine the relationships between numbers and shapes, using area models to solve problems. Determine the areas of shapes and the volume and surface area of solids. Strengthen skills with fraction operations and build fluency with decimal operations.
- *Relating Quantities* → Model equivalent ratios with a variety of methods. Rewrite ratios as percentages and solve percent problems. Use unit conversion rates to solve real-world problems.
- *Determining Unknown Quantities* → Develop strategies for creating equivalent algebraic expressions, a building block of algebra. Equate expressions and solve for unknown values. Represent relationships on a coordinate plane.
- *Describing Variability of Quantities* → Explore statistical thinking, the study of data, and the statistical problem-solving process. Calculate numerical summaries to describe a data set.
- *Moving Beyond Positive Quantities* → Use a number line to represent, make sense of, and order negative numbers. Build on knowledge of plotting and interpreting in the first quadrant of a coordinate plane to construct a four-quadrant graph.

7th Grade Content Focus (Math7)

- *Thinking Proportionally* → Explore pi, circle formulas, and scale factors. Solve problems with proportional relationships and real-world percent scenarios.
- *Operating with Signed Numbers* → Use models to understand signed numbers, define rational numbers, convert fractions to decimals, and operate with rational numbers.
- *Reasoning Algebraically* → Rewrite expressions, solve equations and inequalities, and use graphs and tables to analyze relationships.
- *Analyzing Populations and Probabilities* → Learn the basics of probability and use experimental and theoretical probability to make predictions. Construct probability models and design simulations.

- *Constructing and Measuring* → Calculate the surface area and volume of various pyramids and prisms, including those with regular bases.

8th Grade Content Focus (Math8)

- *Transforming Geometric Objects* → Investigate transformations of geometric objects leading to an understanding of congruence and similarity. Establish facts about triangles and relationships between special angle pairs.
- *Modeling Linear Relationships* → Connect prior knowledge of proportional relationships with linear equations and transformations. Model linear relationships using graphs and equations and discuss the advantages of each form of a linear equation. Analyze and solve pairs of simultaneous linear equations.
- *Developing Function Foundations* → Define, identify, and compare functions using multiple representations. Determine, construct, and analyze lines of best fit for scatter plots.
- *Expanding Number Systems* → Learn about irrational numbers and estimate square and cube roots. Explain proofs of the Pythagorean Theorem and its converse and use the theorems to solve problems off and on the coordinate plane.
- *Applying Powers* → Develop and apply the Properties of Powers to rewrite expressions. Write and operate with numbers in scientific notation. Develop and apply volume formulas of cylinders, cones, and spheres.

Algebra 1 Content Focus

- *Transforming Geometric Objects* → Investigate transformations of geometric objects leading to an understanding of congruence and similarity. Establish facts about triangles and relationships between special angle pairs.
- *Searching for Patterns* → Recognize and identify the key characteristics of different function families. Write recursive and explicit formulas for arithmetic and geometric sequences. Analyze patterns of data, formalize their understanding of lines of best fit, and consider whether a model is a good fit.
- *Exploring Constant Change* → Solve equations and inequalities and systems of equations and inequalities. Investigating Growth and Decay: Write exponential functions from geometric sequences. Transform exponential functions. Use the structure of exponential functions to solve for unknown values.
- *Describing Distributions* → Describe numeric data with a single value. Analyze data distributions and calculate standard deviation. Use the statistical process to summarize, represent, and interpret data in two categories.

Cultural Literacy (CL)

Cultural Literacy blends literacy and social sciences to help students design better communities and solve complex problems. It equips students to become informed citizens by exploring literary, historical, cultural, and social evidence. Through text-based discussions, writing, multimedia presentations, and direct action, students demonstrate their understanding. The curriculum, guided by Common Core Literacy Standards, Pennsylvania Social Studies Standards, and the C3 Framework, moves students through a study of place and time, preparing them to take action as engaged global citizens.

6th Grade (CL6)

In 6th grade Cultural Literacy (CL6), students will focus on the theme of geo-literacy - an understanding of how the Earth's human and environmental systems interact. During this course, students will learn about geography, culture, and history from across the planet. Students will also engage in a nuanced approach to literacy - through traditional writing and reading, as well as through the texts of geography (maps, infographics, charts, etc.) and other forms (film, digital media, etc.). Students will ultimately explore how cultures, communities, and civilizations have come to thrive and consider how we might continue to thrive in the future.

7th Grade (CL7)

This year's Cultural Literacy class will be a place of self-discovery and growth. Students will learn to connect their own lives through cultural contexts of topics discussed in class and to recognize that history can raise questions as well as provide solutions to the issues they confront in their own lives. This class will engage students in the process of using their voices and expressing their opinions using text-based evidence and contextualizing their perspectives to critically express their ideas and views of the greater world. Throughout this year, students will continue to build and grow in their ECS community as thinkers, writers, and global citizens.



8th Grade (CL8)

In 8th grade Cultural Literacy (CL8), students focus on the themes of citizenship and action. Through a study of citizenship's motifs (knowledge of self, development of ethics, concern for others, and taking action in the world), we will prepare students to become active citizens beyond the walls of ECS. This year, in addition to studying revolutionary moments and individuals, our country's founding documents, and important US rights movements, we will teach students about the election process and the power citizens hold as voters.

Science

The Middle School Science Program uses the PA STEELS Standards to develop a curriculum that engages in the three dimensions of learning science for successful science instruction: content, practices, and crosscutting concepts.

6th Grade (Science6)

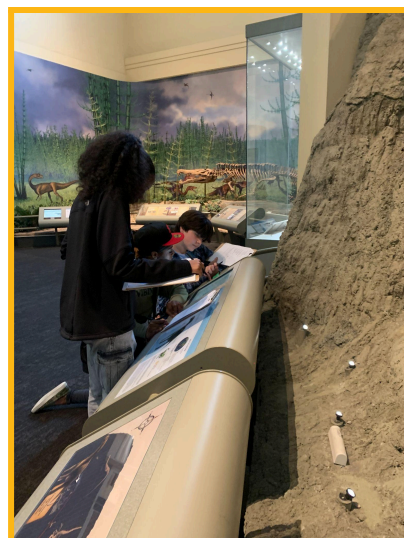
6th Grade starts with a study in life science focusing on ecology and biodiversity using the surrounding green spaces and neighborhood as a classroom laboratory. Soon after, 6th graders begin an in-depth exploration in the physical sciences. This two-and-a-half-unit study covers physical and chemical properties of matter, Newton's laws of motion, kinetic and potential energy and electric/magnetic and gravitational energy. The remainder of the 6th grade year in science is spent exploring earth science with a specific focus on weather and water on Earth.

7th Grade (Science7)

7th Grade starts with studying natural cycles like the nitrogen and carbon cycles, and energy flow in food webs. This leads into a two-unit biology course covering matter and energy in organisms, cells, body systems, traits, and reproduction. Students will also participate in dissection labs. Midyear, they explore physical sciences, including waves and electromagnetic energy. The year ends with earth science, focusing on geoscience processes and natural disasters, building on what they learned about weather and water in 6th grade.

8th Grade (Science8)

8th grade is a culminating year for our middle grade scientists. Much of what they explore in 8th grade builds upon the knowledge and skills they gained in sixth and seventh grade in order to consider more complex scientific concepts and skills. 8th graders explore the history of the Earth through geologic time scale, geoscience processes and tectonic processes. Evolution is introduced and examined through similarities and differences between organisms that exist today and fossil records. Students explore our solar system and beyond. The year ends with a unit that examines human impact on our planet, in particular, climate change.



Environmental Citizenship (EC)

Middle School Environmental Citizenship classes prepare students to become resilient citizens aligned with the UN’s Sustainable Development Goals. Using design and systems thinking, students explore their local environments and engage in hands-on, project-based learning. They use maker-centered learning, technology, and coding to prototype solutions. The program emphasizes student identity, agency, and voice, focusing on environmental justice, citizenship, and sustainability.

Environmental Citizenship Sample Schedule

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
6 th GRADE	Quest Investigation		Robotics/RemiX + Food & Sustainability	Health/PE
	Environmental Citizenship: Foundations			
7 th GRADE	Quest Expedition			
	Health/PE	Robotics/RemiX + Food & Sustainability	Health/PE	Robotics/RemiX + Food & Sustainability
8 th GRADE	Quest Labs			
	Robotics/RemiX + Food & Sustainability	Health/PE	Environmental Citizenship: Capstone	

Environmental Citizenship: Foundations (EC6)

How might we design a more sustainable community?

EC Foundations asks students to think about their world through a problem-solving lens. As the first class in the track, we will ask students to explore themselves and their communities through a variety of modes, methods, and materials. Using visible thinking routines, design sprints, written reflections, interviews, models, and more, students will carefully consider how they personally connect with the UN’s Sustainable Development Goals and what they could do to make a more sustainable world. Students will show their learning by designing and building a model of their future city.

Robotics & Coding

How might we leverage computing and technology to make change?

Students will also join Robotics and Coding classes where they learn the basics of circuits, coding and robotics. By demystifying technology, students harness computer science and engineering to broaden skills, develop solutions, interact with their surroundings, and solve problems uniquely suited to technological intervention.



RemiX Lab

How can we transform our ideas into meaningful and impactful creations?

After mastering human-centered research methods in the design process, students enter the RemiX Lab, an innovative space where they can express themselves and showcase their learning creatively. Through tinkering and experimentation, they enjoy engaging, hands-on experiences that nurture their ability to transform ideas into reality. In the RemiX Lab, students work with a variety of creator equipment and digital and graphic design tools, including 3D printers, a poster printer, a laser cutter, and textile technology. They also learn to master the prototyping cycle, honing their skills in bringing concepts to life.



Food and Sustainability

How might we create a more sustainable future for ourselves and our food systems?

Where does our food come from, and how do our choices affect the world around us? In this course, students explore the connections between food systems, environmental sustainability, and human health. Through hands-on activities, discussions, and real-world case studies, students examine how food is grown, produced, distributed, and consumed, while considering the impact these processes have on people and the planet. Students build practical cooking skills by preparing simple, nutritious recipes and learning basic kitchen techniques that foster confidence and independence. They also sample a variety of foods from different cultures and cuisines, expanding their palates and challenging their assumptions about what they like to eat. Along the way, students reflect on how different foods make them feel, exploring the relationship between nutrition, energy, mood, and overall well-being.

Middle School Quest

How might we expand our horizons and experiences within our Pittsburgh community?

As students enter ECMS we build upon the base of play and curiosity as students move out of Frick Park and into a new focus of agency through the lens of built and social environments. By defining out-the-door learning as an extension of the classroom and normalizing field work, we establish a mindset that at ECS, we learn everywhere.



In **6th grade**, students participate in **Quest: Investigation**, day-long trips to local greenspaces like Highland Park and Point State Park to connect to our urban campus by connecting to the built, natural, and social environments in our NEW place in the city.

In **7th grade**, students participate in **Quest: Expedition**, quarterly adventures to explore Pittsburgh's past to present through observation, stewardship, and reflection, including a bike ride on the Three Rivers Heritage Trail to learn about our city's steel history.

By **8th grade**, students are ready for **Quest: Labs** – dynamic, year-long mini-expeditions where students explore real-world experiences beyond their school routine. In small cohorts, they engage in new learning environments and disciplines, sparking passions and reflecting on their futures as eco-literate, solution-focused citizens. For example, the Ecology Lab might partner with an environmental firm to study sustainable design, while the Music and Media Lab could collaborate with a music school to learn digital production. Each lab offers hands-on experiences and meaningful community partnerships, expanding students' horizons and deepening community connections.

Environmental Citizenship: Capstone (EC8)

How might we take action towards the Sustainable Development Goals (SDGs)?

To 'cap' their middle school experience, their final EC class becomes a culminating capstone project of their entire middle school experience. Students spend capstone class learning, planning and implementing an action toward solving some part of the SDGs. During their capstone project, students will learn to develop business plans to secure support for their ventures. To help manage their work on this project, they will get to connect with their classroom teachers as mentors who will help them learn to manage their projects. The capstone experience culminates in a poster presentation, celebrating their dedication and commitment to driving meaningful change.



Diversified Studies

The purpose of Diversified Studies is to provide middle school students with the opportunity to engage in a variety of subjects that will spark curiosity, prepare them to make personal learning choices, and enable them to develop a passion for learning.

Music & Drama

Drama

Step into the spotlight! In this semester-long course, students learn the basics of acting, stage presence, and backstage skills like set design and prop creation. The class concludes with a culminating performance that showcases students' talents both on and off stage.



Choir

Join the choir to sing as a group, learn basic music reading, and build vocal confidence. Through fun rehearsals and teamwork, students will prepare a group performance at the end of each semester.

Drumline

Get in rhythm with Drumline! This course focuses on teamwork, percussion technique, and marching-style drumming. Students learn to read music and perform with a variety of drums and percussion instruments.

Dance

Express yourself through movement! In this high-energy course, students create dance routines, improve coordination, and build performance confidence.

Spanish: Levels 1 & 2

Spanish 1

This beginner-level course introduces students to the basics of the Spanish language and the cultures of Spanish-speaking countries. Students will practice listening, speaking, reading, and writing through fun activities, games, and storytelling. Topics include greetings, family, school life, food, and more.

Spanish 2

For students who have completed Spanish 1, this course deepens communication skills with expanded vocabulary and grammar. Students will express opinions, talk about past events, and engage in longer conversations while exploring diverse cultural topics through real-world projects and activities.

Visual Arts

Illustration: Visual Stories

Bring your imagination to life! This illustration course helps students turn ideas into visual stories. From drawing creatures to designing comics, students will learn techniques used in cartoons, anime, and graphic novels while leveling up their creative skills.

Paint, Splatter, Create!

Unleash your inner artist! Students explore painting through fun techniques like color mixing, brushwork, and abstract styles. Each class brings new challenges and themes, encouraging creativity in every masterpiece.

Music Lab Courses

Modern Band

Make music from day one! In this collaborative class, students explore genres like rap, R&B, rock, pop, Latin, and country while playing instruments, singing, and even writing original songs. A great fit for future producers and performers alike.

Instrumental Music 101

Start your musical journey here! Students try out keyboard, drums, guitar, ukulele, and bass while learning how to read music, play in a group, and explore the basics of musicianship in a supportive, hands-on environment.

Music Production

Create your own tracks! In this tech-focused course, students learn how to make beats, record and edit audio, and use digital tools to produce music. No prior instrument experience needed—just creativity and curiosity.



Health

Adolescence is a time of rapid physical, emotional, and social growth that can feel overwhelming. ECS supports students through this stage with its Personal Health & Wellness program, helping them build self-awareness, confidence, and healthy decision-making grounded in the belief that “our bodies belong to ourselves.”

Physical Education

The purpose of the Physical Education Department at ECS is to promote lifelong activities for all students to engage in, with a focus on becoming knowledgeable about the resources within their environment. Students will participate in opportunities for physical activity that align with our purpose statement and the National Physical Education standards.



Interest-Based Activities

In addition to the mandatory course offerings outlined above, all students in grades 6–8 will have a choice with certain courses – “activities” which are based on student interest. Students have the choice each quarter to choose their activity every day. The offerings will change based on the quarter and the outside partners who are involved.

Example Activity Choices <i>(There are many more!)</i>		
Art Studio	Cross Country	Robotics Club
Basketball	EcoStewards	Soccer
Blossom & Bloom at Garfield Farms	Grow Pittsburgh	Startable
Climate Action Team with Communitopia	Improv	Ultimate Frisbee
Cooking Passport	Learning Lounge	Wake Up ECS

Activity

ECS values outdoor time and daily physical activity to help adolescents stay balanced, active, and socially engaged. Each day, students have dedicated time to go outside and participate in structured activities such as basketball, gaga ball, football, or creative projects.

Crew

All students in the middle school are members of a "Crew", a class that is designed to build relationships between peers and their crew leader (teacher). During this time, students learn social-emotional learning, reflect on their academic progress and develop skills necessary to be successful.

ADDITIONAL INFORMATION

Schedule (Sample)

Time	6th	7th	8th	Minutes
8:05-8:23	Arrival	Arrival	Arrival	18
8:25-9:13	B1	B1	B1	48
9:15-9:35	CREW	CREW	CREW	20
9:37-10:25	B2	B2	B2	48
10:27-11:01	Level Up	Level Up	Level Up	34
11:03-11:31	B3	Lunch (No Bell at End)	B3	48
11:33-11:51		B3 (46 min)		
11:53- 12:21			Lunch	B4 (No Bell at End)
12:23-12:41	B4	B4		
12:43-1:11			Lunch	48
1:13-2:01	B5	B5	B5	48
2:03-2:51	B6	B6	B6	48
2:53-3:20	Activity	Activity	Activity	32
3:20-3:55	Dismissal	Dismissal	Dismissal	30

Grading

The following grade scale is used in 6th–8th grade:

- 90–100% → A
- 80–89% → B
- 70–79% → C
- 60–69% → D
- 0–59% → F

Athletics

The athletic program at ECS is a vital part of our commitment to providing a well-rounded education. Through sports, our students learn essential life skills, develop a strong sense of teamwork, and experience the thrill of competition. We are dedicated to fostering not only academic excellence but also athletic excellence, preparing our students for success both in the classroom and on the field.



Out of School Time

At ECS, we understand that learning doesn't stop when the school day ends. We are dedicated to providing a rich and diverse range of out-of-school time activities that engage, inspire, and empower our students. These activities are an integral part of our holistic approach to education, offering opportunities for personal growth, skill development, and community building.

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