ECMS Program of Studies



25—26 School Year

Take a Tour

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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

At ECMS, we develop the whole person through high expectations and rigor with support and build our shared humanity through a positive culture and steadfast care for all of our students. We will grow students who care deeply about our world and see pathways to impact. We will create a school worthy of our children.

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.

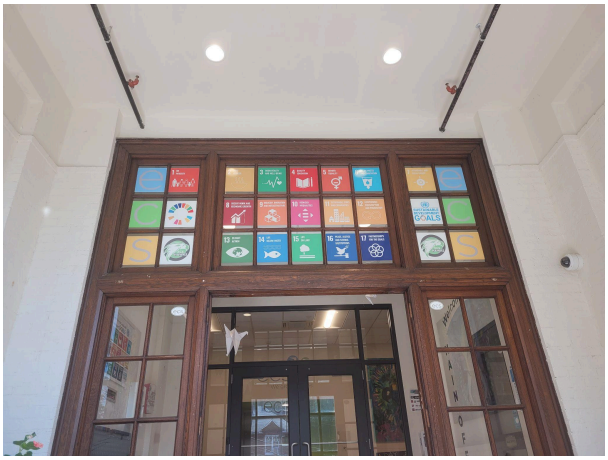
Active, Engaged People. Students will learn how to engage in community dialogue and decision-making by developing the avenues to voice and activism. ECMS's goal is to create learning opportunities that unite us toward a common humanity.

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.

6th Grade Content Focus

In 6th Grade ELA, students explore "coming-of-age" through diverse texts like *The Watsons Go to Birmingham*, *Life in Motion*, and *Refugee*. They develop their writing skills through argumentative, informational, and narrative tasks, while building vocabulary, speaking, listening, and social-emotional skills. The course covers all ELA Common Core Standards with complex texts, discussions, and daily writing. Each unit enhances understanding of the world through thematic texts, writing instruction, and engagement with Essential Questions.

7th Grade Content Focus

During their seventh grade year, students continue to build upon the reading and writing skills acquired in the previous year. Students dive deeper into character analysis through the Deep Study of Character Novel Study, and they hone their nonfiction reading and writing skills through the Tapping the Power of Nonfiction unit and the Research-Based Argument Essays unit.

8th Grade Content Focus

As students look forward to high school, their writing once again includes position papers, research-based papers, and non-fiction writing to prepare them for more advanced high school writing coursework. Students explore dystopian texts within book clubs, explore literary nonfiction texts, and critical literacies.

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. 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 opportunities, using the curriculum and other resources for enrichment opportunities. Students can access additional math enrichment opportunities during electives.

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 percents 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 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 citizen

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 Next Generation Science Standards (NGSS) in conjunction with the PA Science Standards to develop curriculum that engages in the three dimensions of the NGSS 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-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.



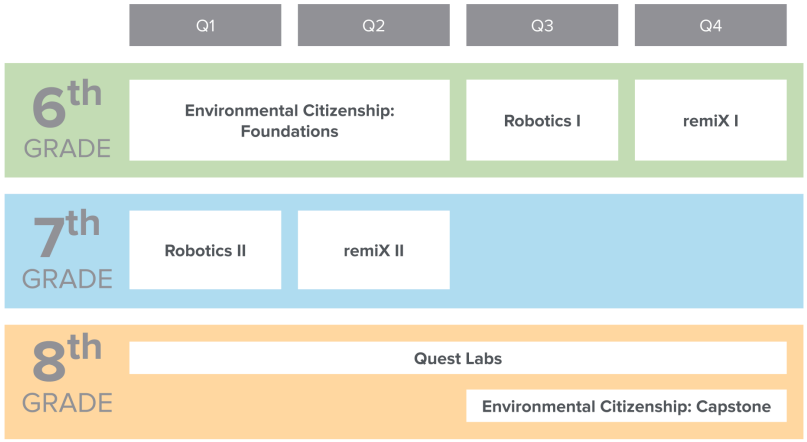
8th Grade (Science8)

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.

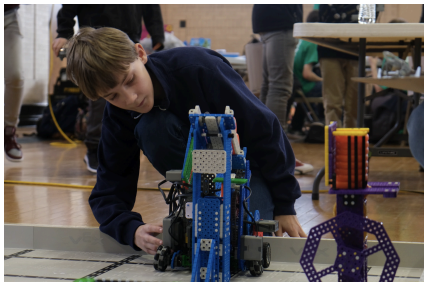
Environmental Citizenship Sample Schedule



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 the 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, and textile technology. They also learn to master the prototyping cycle, honing their skills in bringing concepts to life.

Quest Labs

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



Quest Labs are 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 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.

All students in grades 6–8 receive instruction in six diversified studies (DS) subjects. Students will have two of these courses each semester – taking them for a half a quarter at a time. They will end Q4 with a 'bonus' elective.

DS-Sample Schedule

	Q1	Q2	Q3	Q4
6th	PE/Health	Visual Arts	Music/ Drama	PE/Health
7th	Music/Drama	Music/Drama	Visual Arts	Visual Arts
8th	Food and Culture/ Spanish	Food and Culture/ Spanish	Food and Culture/ Spanish	Music/Drama

Music and Performing Arts: In the Music and Performing Arts program for middle schoolers, students explore their creative talents in the Music Lab, where they can choose from instruments and skills like piano, drums, guitar, bass, music production, and songwriting. The program is designed to nurture each student's unique abilities, offering personalized learning experiences through adaptive apps that cater to individual progress. This hands-on approach fosters both technical skills and artistic expression, allowing students to thrive at their own pace. Opportunities to perform will be frequent with a cumulative performance towards the end of each section.



Music & Drama: In stage class students will study music through a Dalcroze Eurhythmics pedagogy, perform scenes from classic works, and develop their own narratives (personal, fictitious, or factual) they can retell in dramatic fashion. Students will collaborate and take responsibility for various aspects of the production (crew, acting, music, directing). The culmination of the course will include live performances of music or drama creations on the stage.



Spanish: Spanish courses at ECS follow the "5 C's" of language learning: communication, cultures, connections, comparisons, and communities. This introductory immersive class helps students feel comfortable using basic Spanish

vocabulary, covering topics like greetings, numbers, time, weather, geography, verbs, and adjectives. Students also explore cultural experiences from Spain and Latin America through discussions, storytelling, outdoor activities, music, games, art, and food.



Food & Cultures: An evolution of Intermediate's Edible Schoolyard, Food & Culture takes a deep dive into the important role food has in culture building, resilience, and sustainability. The students learn about collaboration with their other studies by exploring foods & culinary processes from around the world and by learning about the related cultural aspects. Practical kitchen knowledge, etiquette, finance & budgeting, and communal resourcing are also touched upon weekly.

Health: The emotional and physical development in the adolescent years can be a confusing and challenging time for children and parents/caregivers to navigate. The changes happening to students physically, the shifts in maturity and relationships, and the awareness of oneself in the world are all parts of this tricky milestone of growing up. ECS is dedicated to helping students get critical information and to supporting them in the development of identity during this time. In Personal Health & Wellness, students develop an awareness of and confidence in their personal identities and bodies in order to feel empowered to make healthy decisions about their physical, social, emotional, and mental well-being with the understanding 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. The attributes that the Physical Education department has identified as essential for this work are: Engagement, Knowledge, and Lifelong Activities. Students participate in opportunities for physical activity that aligns with the National Physical Education standards.





Visual Arts: The primary goal of visual arts is to introduce students to a variety of artistic media and techniques. Students practice these skills in both small and large self-designed projects. The classroom fosters a social, collaborative environment where students express themselves, exchange ideas, and explore their creative habits. Along with creating art, students discuss contemporary artists, give constructive feedback, and share their work with the ECS community.

Academic and Interest Based Electives

In addition to the mandatory course offerings outlined above, all students in grades 6–8 will have choice with certain courses – “electives” which are academic and based on student interest. Each student is placed in 2 ‘Level Up’ courses (one math and one literacy) and have a choice of 3 classes that are interest based. These classes will be reselected each quarter. The offerings will change based on the quarter and the outside partners who are involved.

Elective Choices Example	
• Level Up Literacy & Math • Level Up Creative Writing • Level Up Book Clubs • STEMtastic Adventures (level up) • Geometry (8th Grade) • Math Competition (level up) • Band/Orchestra • Instrumental Odyssey: Learn a New Instrument • Walls Alive: Muraling with Cue Perry • Harmony Foundation • Building the Best You: From Ordinary to Extraordinary, Playing by Design • Art-Tech Fusion with Assemble	• From Clay to Creation • Art Studio • Improv • Robotics Club • Feathered Friends and Foes: An Avian Adventure • Cooking Passport • Black Girl Magic • Wake Up ECS • Learning Lounge, Startable • Blossom & Bloom at Garfield Farms • Climate Action Team w/ Communitopia • Grow Pittsburgh • From Amphibians to Zebras: Learn with the Pgh Zoo

Activity

ECS values outdoor time along with getting adolescents the activity that they need during the day. This time allows students to be active, have social interaction and brings balance to their day. Each day, students will have an activity period for 20 minutes, where they get to go outside and participate in different structured activities, such as basketball, gaga ball, football or doing an art project.

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):

Times	6th	7th	8th	Minutes
8:20-8:38	Arrival	Arrival	Arrival	18
8:40-9:35	B1	B1	B1	55
9:37-10:48	Crew + B2	Crew + B2	Crew + B2	71
10:50-11:38	B3	10:52-11:17 Activity 11:17-11:38 Lunch	B3	48
11:40-12:28	11:40-12:05 Activity 12:05-12:28 Lunch	B4	B4	48
12:30-1:18	B5	B5	12:32-12:57 Activity 12:57-1:18 Lunch	48
1:20-2:00	Elective	Elective	Elective	40
2:02-2:50	B6	B6	B6	48
2:52-3:40	B7	B7	B7	48
3:40-4:00	Dismissal	Dismissal	Dismissal	20

Grading

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

- 90-100%- A
- 80-89%- B
- 70-79%- C
- 60-69%- D
- 50-59%- F
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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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