

MACAT



MIDDLE SCHOOL
ALTERNATIVE
CLASSROOMS FOR
THE ACADEMICALLY
TALENTED

Frost Middle School
14041 Stark Road
Livonia, MI 48154

PROGRAM OVERVIEW

Frost Middle School houses MACAT, Livonia's program for middle grade gifted and talented students. There are approximately 120 MACAT students in this two-year program for grades seven and eight. Transportation for in-district students is provided by the school district.

MACAT students are grouped for academic experiences in their four core classes: social studies, language arts, math, and science. In all classes but math, seventh and eighth grade students are combined. Students participate in elective classes with the entire Frost Middle School student body.

Gifted and talented students require a program that goes above and beyond traditional requirements and allows them to achieve their academic and personal potential. The MACAT program provides an opportunity for these students to explore concepts at an advanced level and to generate products that reflect their capabilities.

CHARACTERISTICS OF GIFTED STUDENTS

- A capacity for complex, abstract thought
- Intense curiosity about how things work
- The ability to absorb vast amounts of knowledge
- The ability to generate creative and original solutions and products
- Empathy for other people and the community as a whole



MACAT SOCIAL STUDIES

How the past shapes the present...

MACAT social studies is taught in a two-year sequence — Early World History in one year and US History in the other. In Early World History, students investigate human history prior to 1500, and learn about significant events across eras, including migration and settlement patterns as well as the origins of farming and emerging human cultures. In US History, students learn about the US during the 18th and 19th Centuries and study recurring patterns and processes that have influenced the American people and our country's development over these two centuries.

**“ONE OF MY MOST MEMORABLE SPEECHES IN US HISTORY WAS WHEN I ARGUED THE IMPORTANCE OF THREE INVENTIONS AND PRESENTED EVIDENCE TO THE CLASS.”
-BRITTANY G.**

Sample Topics

MACAT social studies goes deeper than the normal study of history and seeks to unlock the causes and effects of history. Assignments might include any of the following:

- Understanding and utilizing the Core Democratic Values
- Role playing famous historical figures
- Debating complex historical events
- Researching historical events and people
- Engaging in historical simulations
- Studying primary and secondary historical sources

“I ENJOY THE PROCESS OF COLLECTING INFORMATION THAT WILL BE USED TO PROVE A POINT. AND THE BEST PART IS WHEN SOMEONE FROM A DIFFERENT SIDE SAYS SOMETHING INCORRECT, AND I HAVE THE FACTS TO PROVE THEM WRONG.” -LIZ T.

MACAT SCIENCE

Making sense of the world around you...

In MACAT science, students use scientific reasoning and the scientific method to learn more about the world around them. Core ideas in life science, earth science, physical science, and engineering are arranged so that students can build their understanding over time and see connections between different ideas and across disciplines. Students engage in scientific practices and ask questions, define problems, develop and use models, plan and carry out investigations, construct explanations, design solutions, and engage in arguments based on their evidence.

“MICROSCOPES ALLOWED US TO SEE FAR BEYOND WHAT WE CAN NORMALLY SEE, AND WE UNLOCKED A WHOLE NEW MICROSCOPIC WORLD OF PLANT CELLS, ANIMAL BLOOD, AND OTHER THINGS.” -NELLIE K.

Sample Topics

In MACAT science, students engage in a variety of activities and experiments designed to enhance their understanding and appreciation of the scientific method. In groups and alone, they may do any of the following activities:

- Creating models of real-world phenomena
- Participating in complex scientific argumentation
- Engaging in inquiry-based investigations and debates
- Promoting creative solutions for real world problems
- Engaging in engineering processes such as testing prototypes

“MY FAVORITE ACTIVITY WAS WHEN WE MADE CAKES AND DECORATED THEM TO LOOK LIKE A CELL.” -BRENNAN K.

MACAT MATHEMATICS

The universe is made of numbers...

MACAT mathematics is a two-year sequence where students typically take algebra in 7th grade and geometry in 8th grade. Algebra covers variables representing mathematical concepts. Students analyze patterns and work with linear systems, quadratic equations, absolute value, and polynomials, among other concepts. Geometry works in an axiomatic system to study two dimensional and three-dimensional figures and the relationships of figures within each dimension.

“THE COURSE TEACHES MATH IN AN INTERESTING AND ENGAGING WAY THAT PROVIDES REAL LIFE EXAMPLES. THE WORK IS CHALLENGING, BUT IN A GOOD WAY.” -JAMIE M.

Sample Topics

MACAT math asks students to view the world through the lens of mathematics. They become fluent in algebraic and geometric processes and gain an appreciation for the underlying concepts that form the basis of these subjects. Typical activities include:

- Understanding and analyzing the characteristics of linear, exponential, absolute value, and quadratic functions
- Using the graphing calculator to explore linear, exponential, absolute value, and quadratic functions
- Analyzing and applying theorems, definitions, and postulates to write proofs
- Using Geogebra software to understand the characteristics of geometric concepts
- Using formulas to solve for unknowns

“WE DO FUN ACTIVITIES LIKE GOING OUTSIDE AND FIGURING OUT THE HEIGHT OF A TREE USING THE PYTHAGOREAN THEOREM.” -EMMA D.

MACAT LANGUAGE ARTS

Reading, Writing, Thinking...

MACAT language arts teaches students to become sophisticated consumers and producers of language. Language is broadly defined, and within the class students engage in diverse activities that will challenge them to question their assumptions about reading and writing and how language works. Students discover that anything can be analyzed and consistently engage in thought provoking discussions and assignments that change the way they see the world and their place within it.

**“WHILE STUDYING COMIC BOOKS, WE CREATED OUR OWN UNIQUE SUPERHEROES, AND THEN MADE THEM APRT OF A SHARED UNIVERSE WITH OTHER STUDENT’S CHARACTERS.”
-KAYLA B.**

Sample Topics

MACAT ELA is non-traditional, and students should expect to study topics and concepts they would not otherwise encounter in a language arts class. Assignments might include any of the following:

- Creating a vision of the future, both technological and sociological
- Uncovering humanity’s unique ability to create spoken words
- Applying legal concepts to a set of spoken words
- Analyzing complex texts for purpose and meaning
- Creating an advertising campaign for real products

“I LIKED RIPPING APART THE SENTENCES TO FIND THEIR GUTS, AND DISCOVERING THE BUILDING BLOCKS OF WORDS. I ALSO LIKED LEARNING ABOUT THE INTERNATIONAL PHONETIC ALPHABET AND TRANSLATING WORDS INTO IT.” -JUSTIN P.

ADDITIONAL INFORMATION

GROUP WORK



MACAT students are often grouped together for assignments and projects. These groupings ask them to become alternately leaders and productive members, and they learn valuable skills such as how to effectively communicate with other group members or how to delegate roles and responsibilities. Group size varies and is dependent on the activity, but all students will have the opportunity to extend their learning alongside their peers.

CHALLENGE



The MACAT program provides the challenge of academic and personal achievement with the support of caring educational professionals and a program design that emphasizes depth of understanding, multiple modes of learning, and a balance of risk and support. MACAT students are encouraged to test their limits to see what they are capable of.

ENVIRONMENT



The MACAT environment is one where acceptance, belonging, and self-esteem are critical concerns of the maturing adolescent. Along with academic skills and knowledge, students develop confidence and leadership skills. They have opportunities to remain open in their thinking and to live with ambiguity, and are taught to value their intellect and to use it to deal effectively with their personal goals.

SELECTION PROCESS

SCREENING



The selection process begins with a screening of the grade level test scores of all current Livonia Public Schools sixth grade students. This screening produces a pool of students whose parents are invited to nominate them for MACAT for seventh grade. Students must also submit a writing sample. Non-LPS students who live in the Livonia Public Schools area may also nominate their child, but they must provide a letter of recommendation from a current teacher.

SELECTION



The MACAT selection committee, composed of current MACAT personnel (teachers, counselor, etc.) reviews the test scores, writing sample, and teacher recommendation for each nominated student. Based on this data, the committee invites students into the MACAT program.

OPEN HOUSE



An open house is held for students and parents to decide whether to enroll in the MACAT program for the fall of seventh grade. This allows parents and students who are considering the program to more fully investigate whether it is a good fit for them.