LCHAMP

Lapeer Cooperative Highly Accelerated Mathematics Program

Lapeer County Intermediate School District

Michigan State University Office of Outreach and Engagement in partnership with the Michigan State University Honors College

Michigan State University Mathematics Department

MICHIGAN STATE
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PROGRAM DESCRIPTION

The Lapeer Cooperative Highly Accelerated Mathematics Program (LCHAMP), a derivative of CHAMP in partnership with Lapeer ISD, the MSU Department of Mathematics, and University Outreach and Engagement at Michigan State University, provides classroom instruction at Lapeer County Education and Technology Center for qualified mathematically gifted students in grades 7–10 in Lapeer County.

LCHAMP is designed so that the participating students will complete in two years the math content assigned in Michigan High School Content Expectations (HSCE) for all four years of high school as well as meet the Common Core National Standards. In their first year of CHAMP, students study Algebra I and Algebra II. In the second year, LCHAMP students study Geometry and a standard pre-calculus course (Trigonometry, Analytic Geometry, College Algebra, and a brief introduction to calculus concepts). Normally, students begin LCHAMP with the study of Algebra I. Initial placement that bypasses one or more LCHAMP courses may be allowed only in very unusual circumstances.

This program seeks to:

1. Identify 6th– 9th grade students who reason extremely well mathematically.
2. Develop students' mathematical potential through classroom use of appropriate curriculum and instructional pacing commensurate with their abilities.
3. Demonstrate that with careful joint planning and utilizing existing community resources, school systems can cooperate to successfully meet the needs of highly gifted students within the framework of the regular school day.

A great deal of work has been done by the Center for Talent Development/Northwestern University's Midwest Academic Talent Search and by The Johns Hopkins University to develop, test, and refine valid and reliable criteria and procedures for identifying academically highly gifted middle school students and to develop a model to accommodate the special programming needs of these students.

Many small school districts have too few highly gifted students to fill even one reasonably homogeneous classroom. Some large school districts might have enough students to make up their own classes, but their students are usually spread across several school buildings and grades.

Using the Johns Hopkins model to build a strong foundation, LCHAMP has been developed and implemented as a cooperative, regional program. Several features designed to overcome obstacles common to gifted education make this program unique:

1. Traditional high school curriculum at an accelerated pace is taught, rather than "enrichment" content only.
2. School districts within the surrounding intermediate school districts release students to attend these classes during the school day, dramatically improving use of already committed instructional time.
3. School districts recognize this course of study in lieu of in-school required mathematics and record credit and grades on students' school transcripts; school districts are required to grant high school credit for demonstrated mastery of four years of high school math, i.e., one year of math credit for each semester of LCHAMP, without regard to the student's grade level during the time they are in the program.
4. The program has coordinated joint utilization of existing community, human, financial, and physical resources, which contains costs while improving communication and cooperation for K-12 education.

Features of the Program

1. An MSU mathematics professor teaches the course. One or more university students with high mathematics ability assists with grading homework, giving feedback, and assisting students at study labs.
2. Each course is open only to eligible students who have demonstrated high mathematical ability on the SAT or ACT exam and who have the commitment to learn mathematics in an intensive accelerated course while maintaining satisfactory performance in non-mathematics middle school/high school courses.
3. In addition to the weekly class, regular study sessions are scheduled to enable students to ask questions and receive help on both current and previous material. Attendance at these study sessions is normally optional, but strongly encouraged for students who feel the need for some help outside of the regular class.
4. All LCHAMP students are required to have a graphing calculator, which will be used regularly throughout the LCHAMP courses. The preferred calculator is the TI-83+. The use of these calculators accomplishes several purposes, including: a user-friendly introduction to computing technology and some of its uses; a more extensive experience with graphs that might otherwise not be possible; a more productive use of student time in dealing with concepts rather than tedious calculations;

and access to solutions of interesting but computationally complex problems involving the course material.

5. Mathematical problem solving is emphasized throughout the LCHAMP courses. In addition, extracurricular mathematical problems of general interest are posed regularly.

Staffing

Each instructor has total mastery of content, expresses passion about the subject area, and is personally committed to high standards of education. Care is taken in selecting instructors who have shown evidence of original thinking, a sense of humor, and a high energy level.

The instructors are professors from Michigan State University and are assisted by personally selected teaching assistants.

The LCHAMP liaison coordinates with the LCHAMP instructional staff, the MSU GATE office, and administrators in the local school districts. The liaison is available to assist students and parents when critical concerns develop.

Instructional Plan

Students are dismissed early one day each week in their respective school districts, and come to the Lapeer County Education and Technology Center campus for their LCHAMP Year 1 or Year 2 math classes. Families should refer to their local school district regarding transportation.

Each class lasts 2½ hours with a short break. Throughout the year there are also regularly scheduled LCHAMP labs for students wishing assistance with their assignments or for those preferring to study cooperatively with other LCHAMP students. Students will be offered an MSU email account for ongoing contact with the professor(s) regarding LCHAMP coursework/homework assignments. In addition, an LCHAMP website is available to students for online assistance at any time between classes: www.forums.msu.edu.

During the first semester, a few students may find that the program does not meet their needs. After discussion involving the student, instructor and parents, it may be determined that a student should return to the local district for mathematics instruction. All school districts have agreed to accommodate the reentry of these students into the most appropriate classes the districts offer. Because of the accelerated

pace of LCHAMP classes, students selecting this option should have no problems in returning to a school mathematics class.

Class Content and Procedures

The instructor prepares lessons that provide students with a conceptual-theoretical framework for the content of the course. Practical examples are discussed only to assist student understanding rather than to develop total mastery of a particular skill at that time. New material is introduced at a pace much faster than occurs in the usual classroom. These students typically require this pace in order to remain challenged.

The courses will be conducted at an honors level with an expectation of above average achievement. Students will be asked to submit solutions to more than 1500 homework problems over the course of the year. Enrichment work in mathematical problem solving will be incorporated into both class discussions and homework.

In class, the instructor reviews unresolved homework problems, introduces new material, gives spot quizzes and longer tests, and assigns homework which takes into account both previously studied material and concepts just introduced. Homework assignments, taking the average student in this group 6-8 hours to complete, are collected at the beginning of each class. This homework is graded, commented on by an assistant, and returned to the student before the end of that day's class. LON-CAPA is an online component for LCHAMP students. Students will be required to complete some online coursework for Algebra I that will be submitted to the instructor for evaluation.

Experience suggests that some students begin the program expecting to be able to work all problems quickly, and they can become frustrated when they are unsure of what to do immediately. Such students need to learn perseverance with mental tasks. Other students may view any effort that is less than 100% correct as a failure. As the course proceeds, these students develop a more mature perspective on learning. Homework helps to solidify concepts presented in class and to provide a realistic challenge, requiring these students to develop problem-solving skills and to persevere in the face of less-than-instant-success. Students may feel overwhelmed at first by the volume of the homework assigned, but most adjust to what is required.

Program Objectives & Outcomes

Students in the LCHAMP program will:

1. Learn in two years the content usually covered in the traditional four-year high school mathematics curriculum.
2. Demonstrate mastery (85th percentile or better) on a nationally normed (grades 9-12) mathematics achievement test.
3. Utilize textbooks that emphasize a conceptual/theoretical approach to mathematics.
4. Participate each week in a 2½ hour rigorous class that focuses on the conceptual approach to mathematics.
5. Solidify and apply concepts presented in class through self-study and completion of weekly homework assignments.
6. Interact with other students who have common abilities and interests.

The mathematics content follows the traditional high-level, four-year high school curriculum: Algebra, Plane/Solid Geometry, Trigonometry, and Analytic Geometry. (See LCHAMP Curriculum section for more detail.) The students typically complete this content in two years and receive mathematics credit on their high school transcripts; a written evaluation documents mastery and assigns a grade for each course. Compressing learning into a shorter time frame in just one subject could make two or more years available for other desired courses in high school, e.g., a second foreign language and/or college mathematics courses.

Most students completing LCHAMP should be prepared to enroll in an honors high school calculus course, an Advanced Placement high school calculus course, or an honors level college calculus course.

Michigan State University, Kettering University, University of Michigan-Flint, and Baker College-Flint have modified admissions procedures to admit qualified high school students to college courses while these students remain enrolled in their high schools. (See "What's Next After LCHAMP?" section for a sampling of relevant college mathematics courses.)

Enrolling in a college course while still in high school is called dual enrollment, which is available to eligible students in grades 9-12, and is possible due to the Postsecondary Enrollment Options Act (PSEO). The purpose of PSEO is to provide a wider variety of course options to high school students to ensure that all students continue to be challenged.

Evaluation of Program

Annual assessment of the program involves compilation and review of information gathered from university and local school personnel, parents, students, and former students. Student and parent feedback is typically gathered via surveys.

Evaluation of Student

The most direct measure of the program's success is students' demonstrated progress in mathematical content as evidenced by performance on nationally standardized examinations and tests devised by the instructors.

Post-test mastery is defined as achievement at the 85th percentile and above on nationally standardized achievement tests recommended by The John Hopkins University:

Cooperative Mathematics Achievement Test Series

TEST	NATIONAL NORM GROUP
Algebra I	Urban, Grade 9
Algebra II	Urban, Grades 10-12
Algebra III	Urban, Grades 10-12
Plane/Solid Geometry	Urban, Grades 10-12
Trigonometry	Urban, Grades 10-12

Pre- and post-test results from LCHAMP suggest that students were presented material not previously known to them, and that they were successful in mastering it.

Progress in mastering subject matter is monitored regularly through graded weekly homework assignments, quizzes, and teacher-constructed tests. Parent-teacher conference times are available each semester. Mid-term progress reports and end-of-semester (December and May) grade reports are sent to student's school district, family, and ISD LCHAMP representative. These reports include details on progress in content, participation, and letter grades. Student-teacher conferences are scheduled when needed, and student self-evaluation is strongly encouraged.

Curriculum

Algebra I

Textbook: Algebra I: Expressions, Equations, and Applications by Paul A. Foerster

- Polynomials: terminology, evaluation, algebraic combinations, degree, long division
- Factoring: prime and common factors, difference of squares, quadratic trinomials, factoring by grouping
- Rational Expressions: dividing by monomials, simplifying by factoring, algebraic combinations, least common multiples, combinations of rational expressions
- Linear Equations: roots, literal equations, solutions of equations with rational expressions, story problems
- Linear Inequalities
- Graphs and the Cartesian coordinate system
- Positive integral exponents and roots
- Graphs of linear functions
- Functions: notation, evaluation, inverse of functions
- Lines: slope, various forms for equations of lines, parallel and perpendicular lines
- Variation: direct, inverse, joint
- Quadratic equations: solutions by factoring, completing the square, the quadratic formula
- Story problems involving linear and quadratic equations
- Frequency table, bar graph, pie chart
- Mean, standard deviation, range, median, quartiles
- Stem and leaf plot, histogram, dotplot, boxplot
- Contingency table
- Correlation coefficient, regression equation, correlation and causation

Algebra II

Textbook: Algebra and Trigonometry: Functions and Applications by Paul A. Foerster

- Factoring of sums and differences of cubes
- Exponents: zero, negative exponents, laws of exponents, rational exponents, exponential growth and decay
- Radicals: rules, notation, combinations, rationalizing the denominator
- Complex numbers
- Logarithms: definition, properties, antilogs, computations
- Quadratic equations: solutions by factoring, quadratic formula, character of solutions, equations involving "disguised quadratics"

- Inequalities: solutions, graphing linear and quadratic inequalities
- Simultaneous equations: solutions by graphing, elimination, substitution, linear programming in two variables
- Simultaneous inequalities: solutions by graphing
- Direct and inverse variation
- Conic sections in simple positions: basic features of graphs of circles, parabolas, ellipses and hyperbolas, algebraic solutions of quadratic systems, translation of axes
- Polynomial and rational functions: remainder theorem, factor theorem, synthetic division, fundamental theorem of algebra, factors and zeros, Descartes rule of signs, rational solutions of polynomial equations
- Graphs of rational functions: intercepts, asymptotes, symmetry, asymptotic behavior
- Binomial theorem
- Sequences and series: arithmetic and geometric sequences, infinite geometric series, summation notation, sums of arithmetic and geometric series
- Matrices: determinants and inverses of 2 x 2 and 3 x 3 matrices, Cramer's rule
- Problem solving in an algebraic setting
- A brief introduction to trigonometry: sines, cosines, and tangents, solutions to right triangles
- Probability, conditional probability, tree diagrams
- Binomial distribution, normal distribution
- Samples, sample mean, confidence intervals

Geometry

Textbook: Geometry by Moise and Downs

- Introduction to mathematical logic: undefined terms, definitions, postulates, theorems
- Methods of proof: direct proof, indirect proof
- Points, lines, planes, length, angle measurement, perpendicularity
- Parallel lines, parallel postulate
- Angle measures in triangles and polygons
- Triangle congruence postulates and theorems: SAS, ASA, SSS, SAA
- Right triangles: the Pythagorean theorem, the hypotenuse-leg theorem
- Similarity of triangles and polygons
- Area and perimeter of triangles, polygons, and circles
- Circles: chords, angle measurement for central and inscribed angles
- Medians of a triangle, incenter, circumcenter, concurrence theorems for the medians, angle bisectors, and perpendicular bisectors of sides

- Inequalities in geometry
- Coordinate geometry in the plane and space
- Transformations in the plane: reflections, translations, rotations, rigid motions, similarity transformations
- Informal geometry in space: skew lines, parallel planes, perpendiculars to planes, dihedral angles, volume and surface areas, prisms, pyramids, spheres, cones, cylinders

Statistics

- Descriptive statistics for categorical variables: frequency tables, bar graphs, pie charts
- Descriptive statistics for numerical variables: mean, standard deviation, range, median, quartiles, interquartile range
- Graphs for numerical variables: stem-and-leaf plots, histograms, dotplots, shape of distributions, boxplots
- Empirical Rule
- Studying relationship between two variables: categorical versus categorical variables, contingency table
- Numerical verses numerical variables: scatterplots, correlation coefficient, coefficient of determination, regression equation, correlation and causation
- Probability
- Events and their probabilities
- Finding probabilities of events: conditional probability
- Tree diagrams
- Probabilities distribution
- Binomial distribution
- Normal distribution
- Samples and sampling distributions
- Study designs
- Sample mean: control charts
- Confidence intervals

College Algebra/Trigonometry/Precalculus

Textbook: A Precalculus Course by Brown and Robbins

- Functions: zeros, graphs, inverses
- Exponents and logarithms, growth and decay
- Basic analytic geometry: loci, intercepts, symmetry, lines, distance formula, midpoint formula slope, parallel and perpendicular lines
- Parametric equations, distance from a point to a line, angle between lines, linear inequalities
- Graphs of algebraic relations: loci, nonlinear equations and inequalities
- Analytic geometry in space: coordinates, distance

- formula, direction cosines, planes, lines
- Angles and radian measure
- General definition of trigonometric functions: values at convenient angles
- Graphs of trigonometric functions: periodicity, ranges
- Trigonometric equations and inequalities
- Trigonometric identities: addition of angles formulas
- Inverse trigonometric functions

- Laws of sines and cosines: solution of triangles
- Circular and harmonic motion
- Graphs of composite trigonometric functions
- Vectors
- Polar coordinates: graphs using polar coordinates
- Conic sections, vertices, asymptotes, graphs
- Sequences and series
- Systems of linear equations, matrices
- Probability and counting problems

Responsibilities for LCHAMP

Students
1. Attend classes regularly.
2. Complete assigned homework regularly.
3. Keep parent(s)/guardian(s) informed of weekly graded homework and quizzes.
4. Attend study labs as desired or assigned.
5. Exhibit appropriate classroom behavior.
6. Maintain satisfactory level of performance in regular school course work.

Parents/Guardians
1. Transport student to and from class once a week, except Lapeer county students.
2. Attend an initial information session, fall orientation session, and conferences.
3. Support and encourage the student.
4. Review weekly graded homework and quizzes with the student.
5. Communicate any problems or concerns to the professor.
6. Provide student with access to a computer, a printer, and the Internet. Provide student with a graphing calculator. The TI–83 + calculator is preferred.

Local District
1. Release students to attend class at the Lapeer County Education and Technology Center during their school day.
2. Agree that these classes will be accepted in lieu of in–school required mathematics classes.

3. Recognize this course of study and record credits and grades on high school transcripts.
4. Grant high school credit for demonstrated mastery of content (up to four years of high school math).
5. Identify a local district contact person for LCHAMP.
6. Provide classroom facilities.

Intermediate School District
1. Provide liaison among participating school districts and with the university.

Michigan State University Responsibilities
1. Provide course textbooks.
2. Provide the course instructor (professor).
3. Provide written confirmation of participation in and completion of LCHAMP.
4. Provide administrative and fiscal services.

Instructor Responsibilities
1. Provide the instruction.
2. Supervise the work of the assistants.
3. Provide appropriate evaluation and placement recommendation.
4. Schedule group and individual conferences as necessary.
5. Maintain the LCHAMP website at www.forums.msu.edu.

A Brief History of CHAMP

When the Midwest Talent Search Program was initiated in Michigan in 1981, Kalamazoo College developed a program of accelerated mathematics to offer to highly able students identified through the Midwest Talent Search. The Kalamazoo model, called the Academically Talented Youth Program (ATYP), was based on similar highly successful programs that had been in operation at The Johns Hopkins University since 1971.

In December of 1984, Carol McCarthy, one of the primary people involved with the development and implementation of Kalamazoo's ATYP program, gave a presentation to the Midwest Talent Search State Advisory Board at the Michigan Department of Education. Among those present were the gifted/talented education consultants of Clinton and Eaton counties and the Director of the Honors College at Michigan State University. They began talking excitedly about the feasibility of implementing a similar program at MSU.

In February of 1985, the first meeting was held for area educators interested in participating in a cooperative venture to develop and implement an accelerated math program for students in the tri-county area of Clinton, Eaton, and Ingham. Representatives from the Michigan Department of Education, Clinton and Eaton Intermediate School Districts, and both the Honors College and the Mathematics Department at MSU gathered to talk seriously with Carol McCarthy about adapting the Kalamazoo model to the Greater Lansing Area. Ingham ISD wasn't able to send a representative at that time, but soon became fully involved in the lengthy planning process that followed.

Subsequently, a working committee was formed made up of Donald Lammers and Chitra Smith of the MSU Honors College, Ed Ingraham and Peter Lappan of the MSU

Department of Mathematics, Garry Michaels and Dorothy Lawshe of Ingham ISD, Patricia Greene of Eaton ISD and Jenny McCampbell of Clinton ISD. They worked out the many details that needed to be addressed in any large cooperative program.

The next months were filled with meetings involving teachers, counselors, principals, curriculum specialists and superintendents from the tri-county area in an effort to help local school districts provide CHAMP as an extension of their school programs for those students who might qualify.

By the spring of 1986, the committee was ready to begin the identification of students for a pilot program to be implemented in September of 1986. The pilot program had 16 students enrolled in two classes: one for those who had completed Algebra I, and one for those who had not.

By the fall of 1988, two first-year classes and two second-year classes were in place. Shiawassee joined the CHAMP consortium and began sending students in 1992. The program continues to respond to the needs of mathematically advance students in the four-county area.

In Fall 2010, the CHAMP program expanded to provide programming for students in St. Clair County at Memphis Community Schools. Students from surrounding counties also participated in the MCHAMP program.

In Fall 2011, the NEWCHAMP program provided CHAMP programming in Newaygo County at the Newaygo County RESA in Fremont, MI.

In Fall 2012, the program expanded to Lapeer County in Attica, MI at the Lapeer County Education and Technology Center to provide the LCHAMP program.

LCHAMP Contact Information

Gifted and Talented Education (GATE)
Michigan State University
Kellogg Center
219 S. Harrison Rd., Room 8
East Lansing, MI 48824

Phone: 517-432-2129
Fax: 517-432-9541
gifted@msu.edu
www.gifted.msu.edu

Dawn Mosher
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Lapeer County Intermediate School District
690 N. Lake Pleasant Rd.
Attica, MI 48412
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dmosher@lcisd.k12.mi.us

FOR PROSPECTIVE STUDENTS & PARENTS

Eligibility Requirements

- ACT Math: 21 and ACT Composite: 23
- SAT Math: 530 and SAT Total: 1010
- Students must submit a recommendation from their current mathematics teacher, as well as a copy of their most recent transcript or grade report.
- An online math placement test will be given after the CHAMP application is received.

Student Identification, Application, and Selection Process

The two-stage identification model, as employed by the Northwestern University's Midwest Academic Talent Search (Stage I and Stage III below), is the primary means of identifying these gifted students, estimated to represent 0.5%-1.0% of the population:

Stage I: The initial pool consists of students currently in grades 6, 7, or 8 who score in the top five percent on their own school system's nationally age-grade-normed mathematics/verbal achievement tests. School systems, teachers, and families identify these students. Self-nomination is also possible.

Stage II: Students are asked to attend an informational meeting with their parents. The meeting provides specific information about the program, class content, class organization, instructors' expectations, and student responsibilities. Motivation and the desire to learn, and self-discipline regarding time management and study habits are emphasized. Students must realize the commitment required and take responsibility for their decision to enroll in this accelerated program.

Stage III: Students identified in Stage I who wish to apply for LCHAMP register to take the College Board SAT Test or the ACT test, usually through the Northwestern University's Midwest Academic Talent Search (NUMATS).

> For more information and to register go to:
> SAT: www.collegeboard.org
> ACT: www.act.org
> NUMATS: www.ctd.northwestern.edu/numats

Stage IV: Students should apply to LCHAMP using the online system at https://gifted.msu.edu/gateway/ or by downloading the 2014-2015 CHAMP Application in PDF format at http://gifted.msu.edu/programs/champ-mathematics . Students can apply even if they have not received their SAT or ACT test scores yet. Simply submit a copy of the test scores when you receive them. Applications are due in early May.

> **PLACEMENT TEST INSTRUCTIONS**
> A placement test will be administered online via the Michigan State University LON-CAPA website to all LCHAMP applicants. Instructions on how to take this test will be emailed to the student and/or parent email address provided on the application, after the application is received. The examination is a 50-question test of the content of Algebra I. The results of the examination are used alongside other application materials in the LCHAMP selection process.

Stage V: Applications are reviewed by the LCHAMP professors and liaison, who have the responsibility for final selection of participants. Several factors are considered. Among these factors are the SAT or ACT scores, the age and/or grade level at which these scores were achieved, previous school records, and the online algebra placement test score. NO SINGLE FACTOR AUTOMATICALLY QUALIFIES OR DISQUALIFIES A STUDENT.

Timeline For Applying and Acceptance

October - December	Students register for the SAT or ACT test through the Northwestern University Midwest Talent Search (NUMATS).
January - February	SAT or ACT test given to all participants.
Mid-March	Information is sent to school districts regarding which students are eligible for LCHAMP.
March – April	General information meeting is held for prospective students and their parents.
Early May	Applications are due from students. An online placement testing is given after the application is received.
End of May	Professors review applications and select students.
June	Students and their parents are notified by mid-June and students confirm participation by paying the $100 reservation fee. School districts are notified of which students will be participating in LCHAMP for the next school year.
End of August	Student & Parent Orientation held on the MSU campus.
September	LCHAMP classes begin.

The LCHAMP class schedule approximates the MSU academic calendar.

Registration, Costs, and Payment

Academic Year Programs (CHAMP/LCHAMP, ISHALL, and LEAF)

Reservation Fees
There is no fee due at the time of application, however, upon acceptance into a program each student pays an initial, non-refundable $100 reservation fee confirming his/her intent to participate. Returning Year 2 students must pay a non-refundable $50 reservation fee confirming their intent to continue participating in the program.

Tuition
The cost of program instruction per student per year is approximately $1,500 or $750 per semester, due before the beginning of each semester. The GATE office will send schools an invoice. Contact the GATE office if you require a payment plan.

Financial Aid
Tuition assistance from the GATE office may be available to those with financial need. Fill out the Financial Aid page of the application when you apply to a program. Parents should also contact their student's school to learn if any financial support is provided by the school.

How to Pay
Payment can be made by credit card on the GATE website (www.gifted.msu.edu/program-payments) or by check made payable to Michigan State University. Please write your child's name and program on the notes line of the check and remit payment to:

Gifted and Talented Education
Michigan State University
Kellogg Center
219 S. Harrison Rd., Rm. 8
East Lansing, MI 48824

Other Costs
Textbooks are provided at no additional cost. ISHALL requires a $100 book deposit, which is refunded when books are returned and in good condition. Each family should consult with their home school about transportation. If transportation is not provided, parents are responsible for providing transportation as well as class supplies such as notebooks, binders, etc. Some programs may organize optional field trips with attendance costs to be paid by the student.

Cancellation Policy
All classes are subject to a minimum enrollment of 15 students and may be canceled at the discretion of the GATE office.

Refunds and Drops
If a student drops from a GATE academic year program, the refund policy is:

- For drops occurring on or before the date of the 4th class session, one hundred percent (100%) of the tuition for the program dropped will be refunded.
- All requests for withdrawals and refunds must be submitted in writing to the Gifted and Talented Education office via e-mail (gifted@msu.edu) or by mail by the end of the business day of the 4th class session. We will then give you a drop form to be signed by your school.
- For drops occurring after the date of the 4th class session, no refund will be made for any programs dropped.
- Reservation fees are non-refundable.
- Refunds may take up to 4 weeks.

FOR CURRENT STUDENTS AND PARENTS

Tuition Payment and Refund Policy

Please reference the previous section, "Registration, Costs, and Payment", for details.

Responsibilities

Students
1. Attend classes regularly.
2. Complete assigned homework regularly.
3. Keep parent(s)/guardian(s) informed of weekly graded homework and quizzes.
4. Attend study labs as desired or assigned.
5. Exhibit appropriate classroom behavior.
6. Maintain satisfactory level of performance in regular school course work.

Parents/Guardians
1. Transport student to and from class once a week, except Lapeer county students.
2. Attend an initial information session, fall orientation session, and conferences.
3. Support and encourage the student.
4. Review weekly graded homework and quizzes with the student.
5. Communicate any problems or concerns to the professor.
6. Provide student with access to a computer, a printer, and the Internet. Provide student with a graphing calculator. The TI-83 + calculator is preferred.

Dropping Off and Picking Up Students

All LCHAMP classes meet at the Lapeer County Education and Technology Center. Parking is available in front of the center. If you arrive for pick-up before that time, please park somewhere that will not obstruct normal traffic. *Please contact your local district regarding any transportation inquires.*

Cancellation of Class

If the Lapeer County Education and Technology Center closes due to weather, LCHAMP class will not be held on that day, and a make-up date will be added onto to the end of the semester. Please check the Tech Center's website for notice of closings.

If there is bad weather in your local area, but schools did not close, please use your judgment on driving your student to class. It is far better for the students to be absent from class than to risk unsafe driving conditions.

Absences

Although absence from class is undesirable, there are times when it is unavoidable. When an absence occurs, it is the responsibility of the student to keep up with what the class is doing, and to get all assignments turned in "on time", or as near to "on time" as possible. Homework assignments due on the day absent should either be emailed to the instructor before class time or be turned in at the next available Study Lab. The homework assignment due the following week should be obtained within one day of the absence from the instructor, or another student. Help on work missed in class can be obtained at a Study Lab. It is important that absence from class not result in a wasted week. The student, and possibly the parents, should be aggressive in making sure that the student is up-to-date by the next class.

In the case of an absence which is predictable in advance, the instructor can usually provide assignments in advance so the student can stay current. Generally speaking, a single isolated absence will cause no long-term problems if the student makes the effort necessary to get up-to-date by the next class. However, several absences during a semester can cause real problems for the student, and in such cases, the instructor should be consulted about how to prevent the student from falling seriously behind.

It is the student's responsibility to contact the instructor and make sure they are up-to-date on all class work and homework assignments.

Study Labs

A teaching assistant supervises the Study Labs and is there to help the students with questions on the material. However, it is your student's responsibility to come prepared with questions and to keep themselves on task. The supervisor will not make sure that each student is working the whole time they are at lab.

Attendance at the Study Lab is optional, but many students derive real benefit from attending Study Lab on a regular basis.

Study Lab is intended to give students the opportunity to ask questions about portions of the material that they may not fully understand. These questions may be very general or very specific. The help provided is usually individual help, although several students with similar questions may be dealt with as a small group. Another aspect of Study Lab is that it provides an opportunity for students to help each other – sometimes help from another student is more effective than help from an "official" source.

Students at Study Lab do not need to arrive with a list of questions, but they should have the intention of working on the course material and assignments. Many students use Study Lab as a time allocated to do homework, with the bonus that help is at hand in case something is not understood.

> **PLEASE NOTE:** Study Lab is not intended to become private tutoring. If several students have questions at the same time, the assistant conducting the session will not let individual students or small groups of students dominate their time when others are waiting for help. Thus, the student with several questions may have to wait in turn to have a single question dealt with, and then wait again in turn to ask another question. However, nearly all

questions do get answered eventually. Students with questions are advised to indicate clearly that they have questions, and then be patient until the assistants can get to them.

Monitoring Student Performance

While the program does not issue grade reports until the end of each semester, it is still relatively easy for parents to have a good idea of how a student is doing. Almost every week, there are two "grades" issued, one for homework and another for either a quiz or a test. Homework grades usually correlate very well with test grades – consistently poor homework grades lead to poor test grades. With quiz grades, the pattern over several quizzes is more important than any individual grade – quizzes are short, so a single error or misconception can result in a poor grade. Parents should ask the students regularly, even weekly, to show them the specific scores on homework, quizzes, and tests.

There will be a mid-semester progress report sent to parents, but this will not give a grade. The progress report will consist of a checklist to indicate if everything is going well for the student, and it will highlight any areas in which the performance of the student is not at a high level. Parent-teacher conferences will also be held mid-semester to give parents an opportunity to talk to the professor about the student's progress. Parents are invited to contact the instructor at any time if they have questions or concerns about the student's performance.

Grade Reports are sent after the end of each semester (usually January and May) via e-mail to the student's MSU email address and the parent(s) email address(es) provided. Grade Reports are also sent via email to school contacts provided by the participant prior to the start of the program. (School contacts are typically a counselor, principal, or gifted coordinator.) Mid-semester Progress Reports are also emailed in the same way.

Academic Problems

The instructor will inform parents when serious problems arise with a student's academic performance. Problems become obvious to an instructor when a pattern arises – a single poor grade can often just be a bad day, while repeated poor grades are a concern. However, instructors see the students only one day per week. Parents may sometimes see signs that a student is having troubles long before a pattern becomes obvious to the instructor. This is a case where two or

more observers are better than one. If you observe that your student is having difficulties with the course over a period of more than a week, it might be a good idea to contact the instructor and "compare notes". The instructor can often make individual suggestions that will help a particular student overcome certain types of problems. It is easier to overcome problems earlier rather than later.

Many students in GATE programs have never had academic problems in school before, so they do not know how to cope with them or how to seek the help that might solve them. Parents can be very helpful to the student's performance by seeking out the help that the student may not realize (or be ready to admit) is needed. It is the nature of an accelerated program that students run into difficulties of one kind or another

at some point. Learning to cope with and overcome these difficulties is an important part of the learning experience. It is important for students (and parents) to realize that learning how to find and use help effectively is a skill, one which is essential for long-term academic success.

Students receiving a grade less than a B– may be advised not to continue the program. If "NO GRADE" is entered on the grade report, this means the student's performance was not adequate to receive a grade or credit for the course, and students may be advised not to continue the program. In such cases, an explanatory note will be provided. These recommendations are made with the student's continued academic success in mind.

MSU AND GATE PROGRAM POLICIES

Contact Procedures

- In case of an emergency, including medical or behavioral situations, the program's instructor or supervising adult will contact the parents/legal guardians via the phone number(s) they provided prior to the beginning of the program.
- In case of a non-emergency, instructors may also correspond with the parents/legal guardians via email.
- Please note that it is the responsibility of the parents/legal guardians to notify the GATE office of any changes to their contact information.
- Contacting students during the program: Because the classes/study labs are only 2-3 hours, once or twice a week, we don't expect that parents will need to contact students during the class period.
- Contacting the professors: Parents/legal guardians will be given the email and office phone number of the program instructor(s) or supervising adult prior to the beginning of the program. Email is generally the best way to initially reach an instructor with questions, concerns, to notify them of a student's absence from class, etc.

Program Rules

Participation in MSU GATE programs is a privilege, not a right. The following actions will not be tolerated and may result in the student's dismissal from the program:

- Violation of Academic Integrity, such as cheating or plagiarism (See section on Academic Integrity for more details)
- Any inappropriate behavior towards others, such as harassment, abuse, violence, bullying (physical, verbal, or cyber-bullying) or other misconduct.
- Discriminating against or harassing on the basis of age, color, gender, gender identity, disability status, height, marital status, national origin, political persuasion, race, religion, sexual orientation, veteran status, or weight. The full University Anti-Discrimination Policy is available here: http://inclusion.msu.edu/Equity/index.html
- Sexual harassment, sexual abuse, and other sexually inappropriate conduct. See next section for Reporting Protocols. The full MSU policy on Sexual Harassment is available here: http://inclusion.msu.edu/Equity/Sexual%20Harassment%20Policy.pdf
- Inappropriate use of cameras or other digital recording devices in restrooms, and other areas where privacy is expected by participants.
- Possession and/or use of alcohol, illegal drugs, fireworks, or lethal weapons, on and off campus.
- Any misuse or damage of University property is prohibited, and participants may be financially responsible for any damage incurred.
- Use of any materials presenting a fire hazard such as candles or incense. Tampering with fire alarms is prohibited.
- Theft of personal property or university property
- Violations of federal, state and local laws, or program rules

In addition, classroom rules verbally given by the program instructor or supervising adult must be followed.

University Reporting Protocols for Child Abuse, Sexual Assault, and Child Pornography

The University strives to offer a safe and supportive learning and working environment for all individuals. In support of that goal, the University has established reporting protocols for its employees and volunteers with respect to child abuse, sexual assault, and child pornography. Procedures for reporting violations can be found at: http://www.hr.msu.edu/documents/uwidepolproc/ReportingProtocols.htm

All individuals who have direct contact with minors at a youth program have been subject to a criminal background check (including sex offender registry check) through the Human Resource Department within the last twelve months.

Academic Integrity

GATE programs adhere to Michigan State University expectations about academic integrity.

Academic integrity is honest and responsible scholarship. Students are expected to submit original work and give credit to other peoples' ideas. Maintaining academic integrity involves:

- Creating and expressing your own ideas in course work
- Acknowledging all sources of information
- Completing assignments independently or

acknowledging collaboration
- Accurately reporting results when conducting your own research or with respect to labs
- Honesty during examinations

Academic integrity is the foundation of university success. Learning how to express original ideas, cite sources, work independently, and report results accurately and honestly are skills that carry students beyond their academic career. Academic dishonesty not only cheats the student of valuable learning experiences, but can result in a failing grade on assignments, a failing grade in a course, or even expulsion from the university for the student.

The following are additional MSU resources on plagiarism and academic integrity:

https://www.msu.edu/~ombud/academic-integrity/plagiarism-policy.html

https://www.msu.edu/~ombud/academic-integrity/student-faq.html

Discipline Procedures & Dismissal from the Program

The following procedures apply to violations of the Program Rules and any rules verbally given by the instructor or supervising adult:

1. The student will typically receive a warning from the instructor or supervising adult for a first time offense.
2. If the student repeats the offense, or if the first offense is severe, the student will meet with the instructor of the course. The instructor will assign appropriate consequences at his/her discretion, and this decision is final. Parents will be contacted by the instructor and informed about the incident and consequences.
3. A student who commits a violation of the rules that may warrant dismissal from the program will be notified of the alleged violation. The instructor and GATE director will gather information about the situation and the student will meet with the instructor and GATE director to discuss the student's point of view. Family members will not be involved in this process, but will be notified of the decision. All disciplinary decisions made by the instructor and GATE director are final, and can include dismissal from the program.
4. Please note that dismissal from the program for disciplinary reasons does not warrant a refund of tuition or fees.

WHAT'S NEXT AFTER LCHAMP?

Future Mathematics Placement Options & Dual Enrollment

Given that students completing this two-year accelerated high school mathematics sequence may be ready for college level mathematics, a coordinated effort involving the local school district, intermediate school districts, and Michigan State University will work out the most appropriate placement to ensure the subsequent continuous progress of each student. Options might include:

1. A pre-calculus course at the local high school
2. An AP calculus course at the local or neighboring high school
3. A calculus course at Kettering University, Michigan State University, University of Michigan-Flint, or Baker College-Flint
4. Online coursework (e.g., GenNet, Michigan Virtual High School, Center for Talent Development at Northwestern University)
5. Correspondence coursework (e.g., Center for Talent Development at Northwestern University, The Johns Hopkins University)

Care should be exercised in choosing course work from the list. Courses with similar titles often differ significantly in the extent to which they meet the student's long-range needs. Choices should be made with counseling and input from the head of the school's math department, the intermediate school district's Talent Development Consultant or the student's counselor.

HIGH SCHOOL OPTIONS
Advanced Placement Calculus – Local District
Some high schools offer Advanced Placement (AP) Calculus in their mathematics sequence. This is a college-level calculus course presented in a high school setting. Students taking an AP course have the option to take a nationally standardized AP Calculus exam from the College Board in the spring (for a fee of approximately $89). If students score well enough on the test, they will receive credit at most colleges and universities for up to one year of college calculus.

Advanced Placement Calculus – Online
Virtual AP courses can benefit both students and schools. Because courses are online, they are accessible to students whose schools aren't able to offer them.

Also, in certain circumstances, having the courses on the Internet may provide students with greater flexibility than the traditional classroom. Online courses offer schools an opportunity to extend their curriculum to accommodate a wider variety of students' needs. These AP college–level courses are most suited for students in a college preparatory curriculum who have strong independent study skills and are interested in the course topics. For more information regarding AP Courses Online or to check out the full range of online high school courses available through Michigan Virtual High School, visit www.mivhs.org.
AP Calculus, taken at their high school, a neighboring high school, or online, is an option for students the year following graduation from LCHAMP. After that the students may need to continue their calculus sequence at a college or university or through online courses. See options below.

COLLEGE OPTIONS
Dual enrollment at a college or university while still in high school is made possible by the Postsecondary Enrollment Options Act. Dual enrollment is for students in grades 9–12. Students must demonstrate readiness for college courses by receiving minimum scores on standardized tests. Courses can count for both high school and college credit. All students, grades 9 – 12 can receive tuition assistance from their school. For tuition assistance to be applicable, the college course the student is taking must not be offered in equivalent form at the home school. More information is available at the Michigan Department of Education Dual Enrollment website, http://www.michigan.gov/mde/0,4615,7-140-28753_65799_40085---,00.html, or contact the college or university where you are interested in taking classes. See suggested class options below.

Michigan State University
MTH 132 • Calculus and Analytic Geometry I
This beginning course in calculus and analytic geometry covers derivatives, curve sketching, definite and indefinite integrals, area, and volume. An Honors course, Math 152 H, is also available.

Contact: *Gifted and Talented Education*
Phone: (517) 432-2129
Email: gifted@msu.edu
Dual Enrollment Website:
http://gifted.msu.edu/programs/dual-enrollment

Kettering University
MTH 101 • Calculus I
This course is an introduction to the theory and techniques of differentiation of polynomial, trigonometric, exponential, logarithmic, hyperbolic, and inverse functions of one variable. Also included are limits, continuity, derivative applications and interpretations. Computer software will be used to aid in understanding these topics.

Contact: *Leszek Gawarecki, Department Head,*
Mathematics, Professor of Mathematics
Phone: (810)762-9557
Email: lgawarec@kettering.edu

University Of Michigan – Flint
MTH 122   Calculus II
This is a four semester hour course and is offered during the fall semester. Topics include Integration and its applications; infinite series.

Dual Enrollment Website:
http://www.umflint.edu/admissions/dual-enrollees

Baker College – Flint
MTH 141   Calculus I
This is a four semester hour course and is offered during the fall semester. Topics include functions, limits, continuity, differentiation, integration, logarithmic and exponential functions, inverse trigonometric functions, polar coordinates, parametric equations, conic sections, and sequences and series.

Contact: *Dr. Maureen Steen, Associate Dean of*
General Education
Phone: (810)766-4154
E-mail: Maureensteen@baker.edu
Dual Enrollment Website: http://www.baker.edu/
future-students/dual-enrollment/

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