



MSU Gifted and Talented Education  
2019 - 2020 Program Guide



**#GIFTEDATMSU**

Apply online at  
**[gifted.msu.edu](http://gifted.msu.edu)**





# *Dear Parents and Students,*

The GATE office is excited to announce that we have new programming beginning in summer 2019 called IS4GT (Intensive Studies for Gifted and Talented). IS4GT is a one-week advanced program with concentrated curriculum in a variety of topics for gifted students. IS4GT is for students in grades 7-11, which expands our summer programming to serve students in grades 3-11!

In addition, GATE is now administering the OLSAT (Otis Lennon School Abilities Test) and the CogAT (Cognitive Abilities Test) for summer programming (See page 3). Summer programs have rolling admissions, so complete your application early!

GATE academic year programs remain the same, serving students in grades 7-9. All academic year programs are offered on the MSU campus with CHAMP (Math) and ISHALL (English) available at satellite locations in Novi and Avondale.

The advanced curriculum of all programs is developed with gifted students in mind. GATE students will engage with topics and concepts that are several years advanced for their current grade level while building on skills and concepts they may have learned in previous GATE programs.

**The application deadline for all programs is May 2, 2019.**

We encourage you to apply early to ensure you have all materials submitted by the deadline.

Please reference the Application Guideline charts on the next page based on your student's current grade level to see where your student fits.



## Summer Program Application Guideline

If you are currently in...	...you can apply for the following Summer Programs:
Grades 3 or 4	<b>GUPPY 3-4</b>
Grades 5 or 6	<b>GUPPY 5-6</b>
Grades 7	<b>MST@MSU, Intensive Studies:</b> Forensic Science, Pre-Med Ed
Grade 8	<b>MST@MSU; Intensive Studies:</b> Number Theory, Forensic Science, Behavioral Mathematics in Artificial Intelligence, Pre-Med Ed
Grade 9	<b>MSTL, Intensive Studies:</b> Number Theory, Forensic Science, Behavioral Mathematics in Artificial Intelligence, Aircraft Piloting, Remote Drone Piloting (must be 14+), Pre-Med Ed
Grade 10	<b>MSTL; Intensive Studies:</b> Number Theory, Aircraft Piloting, Behavioral Mathematics in Artificial Intelligence, Remote Drone Piloting (must be 14+), Lab Research in Microbiology
Grade 11	<b>Intensive Studies:</b> Behavioral Mathematics in Artificial Intelligence, Remote Drone Piloting (must be 14+), Lab Research in Microbiology



## Academic Year Application Guideline\*

If you are currently in...	...you can apply for the following Academic Year Programs:
Grades 6, 7, or 8	<b>CHAMP, ISHALL, LEAF or ALL</b>
Grades 9 or 10	<b>ALL or LEAF</b>

\*Please note that students begin these programs in the Fall of their 7th, 8th, or 9th grade year. For example, to begin the program in the Fall of 7th grade, students must apply in the spring of their 6th grade year.



# ***Table of***

# ***Contents***

About Gifted And Talented Education .....	1
GATE Program Requirements .....	6
What to Expect from Your GATE Program .....	12
Cost and Payments .....	19
<b>Academic Year Programs .....</b>	<b>27</b>
Cooperative Highly Accelerated Mathematics Program .....	28
Intensive Studies in Humanities, Arts, Language, and Literature .....	32
Langue pour Étudiants Avancés de Français .....	36
Amo Linguam Latinam(I Love Latin!) .....	40
Dual Enrollment.....	44
<b>Summer Programs .....</b>	<b>47</b>
Gifted University for Parents and Precocious Youth .....	48
Intensive Studies for Gifted and Talented .....	52
Math, Science, and Technology .....	58
Math, Science,Technology, and Leadership .....	64
Ingham ISD .....	72



**9**  
programs

**10**  
grades

**∞**  
possibilities

## MSU Gifted and Talented Education

Gifted and Talented Education (GATE) programs at MSU offer differentiated educational experiences for students in grades 3-12.



**CHAMP**  
page 28



**ISHALL**  
page 32



**LEAF**  
page 36



**ALL**  
page 40



**DUAL ENROLLMENT**  
page 44



**GUPPY**  
page 48



**IS4GT**  
page 52



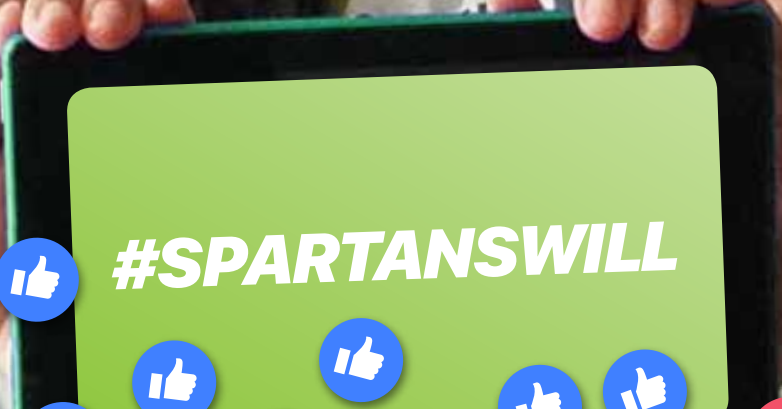
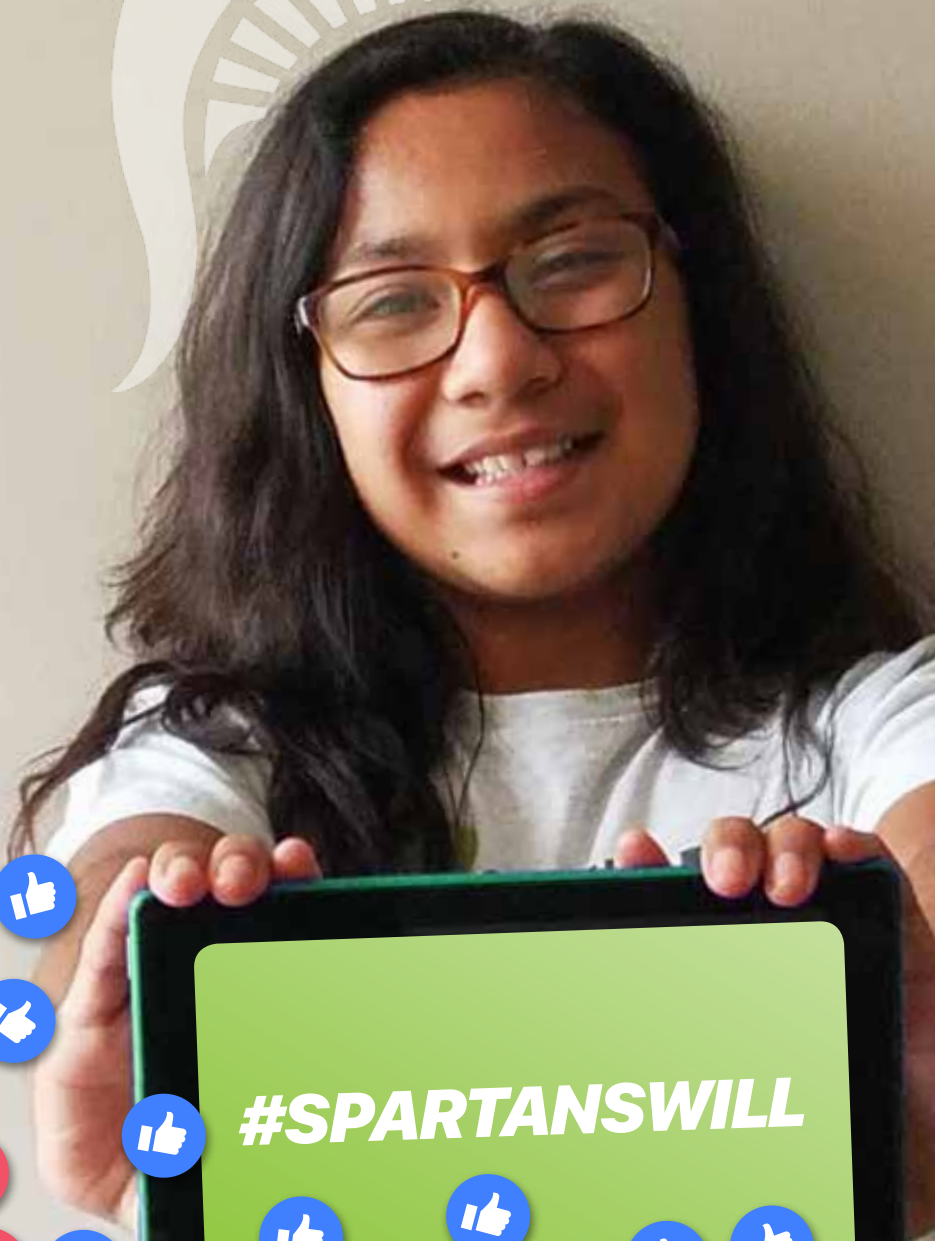
**MST@MSU**  
page 58



**MSTL**  
page 64



MSUgifted 2019



**#SPARTANSWILL**



***About***

***Gifted***



***And Talented***

***Education***

***At Michigan State University***



---

# Academic Year Programs

**Space is limited in academic year programs and the application process is competitive.**

Our academic year programs challenge gifted middle and high school students in math, literature, and language. These programs are designed to replace high school curricula, allowing students to complete four years of Michigan High School Content Expectations (HSCE) and Common Core National Standards in just two years of study. Courses meet once a week and are taught by MSU instructors. Students are expected to stay with the program for the full two-year cycle. After completion, students are prepared to take advanced placement (AP) courses at their high school or dual enroll through MSU or another institution.

Eligibility varies by program but is generally determined by ACT or SAT scores and other requirements. See GATE Program Requirements and Responsibilities starting on page 6 for details.

**Academic year programs include:**

## ***Cooperative Highly Accelerated Mathematics Program*** (CHAMP)

For students in grades 7-9, CHAMP is offered in East Lansing, Novi, and Avondale. The CHAMP program begins with Algebra 1.

---

## ***Intensive Studies in Humanities, Arts, Language, and Literature*** (ISHALL)

For students in grades 7-9, ISHALL is offered in East Lansing, Novi, and Avondale. ISHALL begins with grade 9 English curriculum.



---

## ***Langue pour Étudiants Avancés de Français*** (LEAF)

For French students in grades 7-10, LEAF is a hybrid class with mostly online curriculum, as well as in-person meetings on campus once per month, to better accommodate students outside the East Lansing area. LEAF begins with year 1 French curriculum.

---

## ***Amo Linguam Latinam*** (ALL)

For Latin students in grades 7-10, ALL is a hybrid class with mostly online curriculum, as well as in-person meetings on campus once per month, to better accommodate students outside the East Lansing area. ALL begins with year 1 Latin curriculum.

---

# ***Summer Programs***

**Summer programs have rolling admissions and fill up quickly! Complete your application early.**

GATE summer programs offer students the chance to experience advanced coursework and the college campus alongside their high achieving peers. Programs include a residential option for grades 7 and above (minimum age of 12), as well as a commuter option for all programs.

**Summer programs include:**

## ***Gifted University for Parents and Precocious Youth*** (GUPPY)

**June 21 – June 22** • Two-day GUPPY program for grades 3-4

**June 21 – June 23** • Three-day GUPPY program for grades 5-6

GUPPY offers a variety of exploratory educational presentations and hands-on experiences in Michigan State University's laboratories and

classrooms. There are several advanced topic “tracks” for students to choose from, each with their own combination of STEAM-based classes.

---

## ***IS4GT – NEW FOR 2019!***

Intensive Studies for Gifted and Talented (IS4GT) is a one-week advanced program in a specific concentrated curriculum. IS4GT is for students in grades 7-11.

.....

### **June 17-21, 2019**

**Grades 7-9** Intensive Study in Forensic Science

**Grades 8-10** Intensive Study in Number Theory  
(students must have completed Algebra 2 and geometry)

**Grades 9-11** Intensive Study in Aircraft Piloting

.....

### **June 24-28, 2019**

**Grades 7-9** Intensive Study in PRE-MED ED

**Grades 8-11** Intensive Study in Behavioral Mathematics  
in Artificial Intelligence

**Grades 9-11** Intensive Study in Remote Drone Piloting  
(must be 14+)

**Grades 10-11** Intensive Study in Lab Research in Microbiology

---

## ***Math, Science, and Technology*** (MST@MSU)

**July 8 – July 12** • A one-week residential or commuter program for students in grades 7-8

MST@MSU classes and workshops are offered in a wide range of topics, such as computer science, chemistry, debate, and more. See individual course descriptions for details. Students will take two classes plus one workshop.

---

# **Math, Science, Technology, and Leadership (MSTL)**

**July 8 – July 19** • A two-week residential or commuter program for students in grades 9-10

This program offers advanced topics such as microbiology and animation. Students will choose two STEM courses, as well as one Leadership Workshop. Leadership Workshops are designed to introduce students to concepts and skills required to be a leader in STEM fields.



**MSUgifted**

2019 · 🌐

So excited for IS4GT! It's going to be such a great summer. Where else can you go to a camp that offers forensic science and drone piloting! 🦋🕸🚁👤 **#msugifted #bones #science #drones #cantwaitforsummer**



5174322129



***GATE***

***Program***



***Requirements***

All GATE applicants must submit a recent grade report with strong grades/GPA, a teacher recommendation form, and an accepted test score report. Please see the chart on page 10 for acceptable tests for each program and minimum score requirements. A full IQ report is also acceptable in place of the listed tests.

---

# **Responsibilities of Participants**

---

## **Students**

- Attend classes regularly
- Complete assigned homework regularly
- Keep parent(s)/guardian(s) informed of weekly graded homework and quizzes
- Attend labs as desired or assigned
- Exhibit appropriate classroom behavior
- Maintain satisfactory level of performance in regular school course work

---

## **Parents/Guardians**

- Transport student to and from class
- Attend an orientation session and mid-semester conferences
- Support and encourage the student
- Review weekly graded homework and quizzes with the student
- Communicate any problems to the instructor
- Provide student with access to a computer, a printer, and the Internet. For CHAMP, provide student with a graphing calculator

---

## **Local School District**

- Release students to attend class at designated location during their school day
- Agree that these classes will be accepted in lieu of in-school required subject classes
- Recognize this course of study and record credits and grades on high school transcripts
- Grant high school credit for demonstrated mastery of content (up to four years of the subject)
- Identify a local district contact person for the program

---

# Testing

For minimum testing requirements, refer to table on page 10

---

## Acceptable testing for GATE academic and summer programs

- ACT
- SAT
- OLSAT
- CogAT
- NNAT
- IQ Testing

---

### ACT - February 9

\$93.50 without essay (NUMATS) - Registration Deadline: January 9

\$50.50 without essay (act.org) - Registration Deadline: January 11

---

### SAT - March 9

\$90.50 without essay (NUMATS) - Registration Deadline: February 5

\$47.50 without essay (collegeboard.org) - Registration Deadline: February 8

If your student is age 12 or younger, you need to register using a paper form, unless registering through NUMATS. Please call College Board at 866-630-9305.

**The above test dates are the last ACT/SAT test dates that GATE will accept for program applications. May and June test dates will not be accepted.**

An alternative to the above dates is to schedule an IQ test with the MSU Psychological Clinic at 517-355-9564.

---

### OLSAT

#### Otis Lennon School Abilities Test

Only for summer programs (excluding GUPPY) (administered by MSU GATE)

**Test dates** (more test dates will be added as needed)

**At MSU:** February 19, March 20, April 17

**At Farmington/Novi Area:** March 28, May 1 • 6:00 – 9:00 pm

**At Avondale:** TBD

**Cost:** \$45 per person

Go to [gifted.msu.edu](http://gifted.msu.edu) to register and for testing locations.

.....

## **CogAT**

### **Cognitive Abilities Test**

Only for summer programs (excluding GUPPY) (administered by MSU GATE)

#### **Test dates**

**At MSU:** February 27, March 13, April 11

**At Farmington/Novi Area:** March 28, May 1 • 6:00 – 9:00 pm

**At Avondale:** TBD

**Cost:** \$45 per person

Go to [gifted.msu.edu](http://gifted.msu.edu) to register and for testing locations.

.....

## **NNAT**

### **The Naglieri Nonverbal Ability Test**

Only for GUPPY program (administered by MSU GATE)

#### **Test dates**

**At MSU:** February 20, March 21, April 16

**Cost:** \$45 per person

Go to [gifted.msu.edu](http://gifted.msu.edu) to register and for testing locations.

.....

## **IQ Testing**

For application to GATE Programs, an IQ test is acceptable in place of an ACT or SAT test. The psychologists listed below provide IQ assessment, such as the WISC V test.

### **Pat LaPat**

Clinical Psychologist  
36516 Green Spring  
Farmington Hills, MI 48311  
Call 248-661-0195 for details

or

2190 N. Woodward  
Bloomfield Hills, MI 48301  
Call 248-661-0195 for details

### **Bright Pine**

Dr. Katherine Lewitzke, PsyD, LP  
Licensed Psychologist and Clinic Director  
Call 248-383-8728 for details

### **MSU Psychological Clinic**

316 Physics Rd., Rm 262  
East Lansing, MI 48824  
Call 517-355-9564 for details

### **University of Michigan**

**The University Center  
for the Child and Family**  
Call 734-764-9466 for details

### **Wayne State University**

**Psychology Clinic**  
60 Farnsworth St.  
Detroit, MI 48202  
Call 313-577-2840 for details.

**The cost varies based on the services requested and rendered.** Please call provider to inquire about cost.

GATE does not recommend, guarantee, or take any responsibility or liability for the list of organizations above.



# Minimum Test Scores Required for GATE Programs (Grades 7 and Up)

## Academic Year Programs

Program	ACT Math	ACT English	ACT Reading	ACT Composite	SAT Math	SAT Evidence-Based Reading and Writing	SAT Total
<b>CHAMP</b>	<b>21</b>	X	X	<b>23</b>	<b>560</b>	X	<b>1090</b>
<b>ISHALL</b>	X	<b>21</b>	<b>22</b>	X	X	<b>560</b>	X
<b>LEAF</b>	X	<b>21</b>	<b>22</b>	X	X	<b>560</b>	X
<b>ALL</b>	X	<b>21</b>	<b>22</b>	X	X	<b>560</b>	X

## Summer Programs

Program	Grades	ACT Math	ACT English	ACT Reading	ACT Composite	SAT Math	SAT Evidence-Based Reading and Writing	SAT Total <sup>1</sup>	OLSAT <sup>2</sup>	CogAT <sup>2</sup>
<b>MST@MSU</b>	<b>7-8</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>19</b>	<b>500</b>	<b>500</b>	<b>980</b>	<b>90th</b> percentile	<b>121</b> SAS
<b>MSTL</b>	<b>9-10</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>520</b>	<b>520</b>	<b>1020</b>	<b>90th</b> percentile	<b>121</b> SAS
Intensive Study in <b>Forensic Science</b>	<b>7-9</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>20</b>	<b>510</b>	<b>510</b>	<b>1000</b>	<b>90th</b> percentile	<b>121</b> SAS
Intensive Study in <b>PRE-MEDED</b>	<b>7-9</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>20</b>	<b>510</b>	<b>510</b>	<b>1000</b>	<b>90th</b> percentile	<b>121</b> SAS
Intensive Study in <b>Number Theory</b>	<b>8-10</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>520</b>	<b>520</b>	<b>1020</b>	<b>90th</b> percentile	<b>121</b> SAS
Intensive Study in <b>Behavioral Mathematics in Artificial Intelligence</b>	<b>8-11</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>520</b>	<b>520</b>	<b>1020</b>	<b>90th</b> percentile	<b>121</b> SAS
Intensive Study in <b>Aircraft Piloting</b>	<b>9-11</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>520</b>	<b>520</b>	<b>1020</b>	<b>90th</b> percentile	<b>121</b> SAS
Intensive Study in <b>Remote Drone Piloting</b>	<b>9-11</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>520</b>	<b>520</b>	<b>1020</b>	<b>90th</b> percentile	<b>121</b> SAS
Intensive Study in <b>Lab Research in Microbiology</b>	<b>10-11</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>540</b>	<b>540</b>	<b>1040</b>	<b>90th</b> percentile	<b>121</b> SAS

1. SAT scores are for tests taken after March 2016. 2. Administered by MSU GATE.

Note: If your scores come close to meeting the above stated minimums, we encourage you to apply.

The application review process is holistic and will take into consideration all aspects of your application.

Note: An IQ score report is acceptable for all programs, in place of the tests listed above

# Test Scores Accepted for the GUPPY Program (Grades 3-6)

## GUPPY

Program	PSAT 8/9 Math	PSAT 8/9 Reading	NNAT	IOWA	NWEA	MSTEP
<b>GUPPY 3-4</b>	<b>410</b>	<b>410</b>	<b>90th</b> percentile	<b>95th</b> percentile	<b>95th</b> percentile	<b>Level 4</b>
<b>GUPPY 5-6</b>	<b>410</b>	<b>410</b>	<b>90th</b> percentile	<b>95th</b> percentile	<b>95th</b> percentile	<b>Level 4</b>

Note: An IQ score report is acceptable for all programs, in place of the tests listed above. For IQ testing information see page 10.



**MSUgifted**

2019 · 🌐

Getting ready for GATE? Don't forget to get your test scores and application in early! 🎯📝 #msugifted #acethattest #dontmissout



5174322129



***What to***



***Expect From***

***Your GATE***

***Program***

GATE programs are designed to provide educational experiences that allow gifted students to develop intellectually, to cultivate social relationships, and to expand their understanding of the world.

---

## ***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 people's 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.

---

## ***Lessons and Class Structure***

The instructor prepares lessons that provide students with a conceptual-theoretical framework for the content of the course. Practical examples are discussed to assist student understanding and work toward developing mastery of a particular skill or concept. New material is introduced at a pace much faster than occurs in the usual classroom. Gifted students typically require this pace in order to remain challenged.

An example of class structure may include the instructor reviewing unresolved homework assignments, introducing new material, giving spot quizzes and longer tests, and assigning homework that takes into account both previously studied material and concepts just introduced. Homework assignments, taking the average student six

to eight hours to complete, are collected at the beginning of each class. This homework is graded, with comments from the professor or an assistant, and returned to and discussed with the student before the end of that day's class or the next class.

Experience suggests that some students begin a program expecting to be able to work through homework quickly, and they can become frustrated when they are unsure of what to do immediately. Through the process of adjusting to the program students will learn perseverance with mental tasks. Other students tend to 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 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.

Because of the accelerated and demanding nature of the Academic Year programs, students will be allowed to enroll in one Academic Year program per year. Students are welcome to apply to more than one Academic Year program—if accepted to multiple programs, they can choose which one they would like to enroll in for the upcoming year, and then enroll in another program the following year.

---

## ***Commuter vs. Residential***

Residential and Commuter students are required to attend all classes. Students are not allowed to leave during any program unless there is an emergency and will be required to bring in a medical form to be excused for the absence. Students who are absent at any point during a program will be considered dismissed from the program from that point forward and no refunds will be issued.

## Comparison of Commuter and Residential Participation in GATE Summer Camps

	Residential (R)	Commuter (C)
<b>Academic classes</b>	Both <b>R</b> and <b>C</b> students participate in the day's academic classes.	
<b>Lunch</b>	Both <b>R</b> and <b>C</b> students are provided with lunch.	
<b>Social activities</b>	Because residential students pay to stay overnight in the dorms, there are additional social activities planned for them in the evenings and on the weekend.	Commuter students do not participate in evening or weekend social activities.
<b>Camp attendance</b>	<b>R</b> students are not allowed to leave for the duration of camp (unless an emergency arises). Students can communicate with their families via phone and e-mail in the evenings.	<b>C</b> students must be dropped off and picked up during designated times. Arriving late, leaving early, or missing days of class is not allowed.

## Availability of Commuter and Residential Options for GATE Summer Programs

	Residential (R) <sup>1</sup>	Commuter (C)
<b>GUPPY</b>	No <sup>2</sup>	Yes
<b>IS4GT</b>	Yes	Yes
<b>MST@MSU</b>	Yes	Yes
<b>MSTL</b>	Yes	Yes
<b>Dual Enrollment College Classes</b>	No	Yes

1. Students must be at least 12 years old to stay in the dorms.

2. For GUPPY, families who live out of the area may stay at a local hotel. A parent must accompany their student.

---

## ***Commuter Camp FAQs***

---

### **When and where do I drop off and pick up my child?**

- Times, locations, and detailed information about drop-off and pick-up policies will be provided to parents and guardians well in advance of the beginning of the program.
- Alternate drop-off or pick-up times are not allowed. It is important that we make sure that every student is accounted for and safe at all times.

---

### **Can my child miss a day of class?**

- Since our programs are only several days, one week, or two weeks in length, GATE emphasizes that students cannot skip any days of class. We do not want any of our students to fall behind or feel left out.
- Unacceptable reasons for missing camp: doctor's appointments, family gatherings.
- Acceptable reasons for missing camp: an emergency that arises that warrants the student missing the remainder of camp.

---

### **Should my child bring a lunch or is lunch provided?**

- Lunch is included for both residential and commuter students.
- Students should bring a water bottle.
- They may also bring snacks (**no peanuts**).
- Vending will not be available for students in GUPPY

---

## ***Residential Camp FAQs***

---

### **Can I visit my child or take my child home on the weekend?**

- **No.** GATE residential camps are closed programs, meaning that for the duration of camp there are no visits from home or trips home for the weekend.
- Camp is full of fun activities, even on the evenings and weekends. We do not want any students to feel excluded. For safety reasons, it is mandatory that students stay on campus for the duration of camp, unless an emergency arises.
- Students will be able to text, e-mail, and call their parents and guardians at designated times, usually during evening free time.



---

## **Will my child be safe on campus and staying in the dorms?**

- Residential staff, also called Lead Supervisors and Resident Advisors (RAs), are trained to keep each student safe. Before the opening of the program, the residential staff receives training on rules, regulations, and safety information related to the students' welfare.
- The Lead Supervisors are adults who are experienced at running summer programs. They are assisted by RAs who are current MSU students. RAs are selected because of their commitment to education and ability to interact well with young people.
- The residential staff members live in the residence hall on the same floor as students and are on duty 24 hours a day to ensure that every camper is safe. They are responsible for providing a comfortable and friendly atmosphere in the residence hall.
- Male and female students will live in separate hallways in the same residence hall.

---

## **Can my child request a specific roommate?**

- **No.** Each student will be assigned a roommate. We want students to meet new people in the program.
- Assigning roommates is just one way of encouraging new friendships. Students will be placed in three different instructional groups, as well as a "color group" for some activities, allowing many opportunities to interact with a variety of different students in small groups. There is also free time in the evenings for students to socialize together.

---

## **Should I supply my child with extra money?**

- Yes, we recommend that each student bring between \$20 and \$40 in cash.
- Students may want to purchase souvenirs or vending machine snacks. Campers may visit the MSU Dairy Store and campus bookstore and choose to buy items.

---

## **What should my child bring?**

- To help residential students plan for their stay in the residence halls, we will provide a complete packing list after the student has been accepted to the program.

# MSU Non-Discrimination Statement

MSU's Anti-Discrimination Policy prohibits acts of discrimination and harassment against any university community member(s) by inappropriately limiting employment opportunities, access to university residential facilities, or participating in educational, athletic, social, cultural, or other university activities on the basis of age, color, gender, gender identity, disability, height, marital status, national origin, political persuasion, race, religion, sexual orientation, veteran status or weight. Complaints under this policy may be submitted to the Office of Institutional Equity for investigation.



**MSUgifted**  
2019 · 🌐

Staying on campus is so much fun! Learning and hanging out with friends is amazing. Plus getting to stop by the MSU Dairy Store is so tasty! 🏠🍦 #msugifted #icecream #msudairystore #friends #liveon #dormlife #campuslife



5174322129



# *Cost and Payments*

For **IS4GT**, **MST@MSU**, and **MSTL**, you must pay a non-refundable application fee as part of the application process.

For **GUPPY** and Academic Year programs, you do not pay any fees until the student is accepted into the program.

# Academic Year Program Costs



*These include CHAMP (all locations), ISHALL (all locations), LEAF, and ALL.*

---

## 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 do not submit a new application, but must pay a non-refundable \$50 reservation fee confirming their intent to continue participating in the program.

---

## Tuition

Tuition is \$1,500 per year (\$750 is due before the beginning of each semester). Tuition is separate from "Reservation Fees" and "Other Costs." The GATE office will send parents notice of when payment is due. 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 ([gifted.msu.edu/payment](http://gifted.msu.edu/payment)) 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 the GATE office. Please refer to the website for check submission instructions.

---

## **Other costs**

Parents are responsible for providing transportation, as well as class supplies such as textbooks, notebooks, binders, etc. Some programs may organize optional field trips with attendance costs to be paid by the family.

- **CHAMP:** Parents are responsible for purchasing a graphing calculator for their students. The TI-83+ is preferred.
- **ISHALL:** Parents are responsible for purchasing the assigned books for their students.
- **LEAF:** There is a \$100 technology fee for this hybrid program.
- **ALL:** There is a \$100 technology fee for this hybrid program. Parents are responsible for purchasing the assigned books for their students.
- **CHAMP** and **ISHALL** satellite locations (Avondale and Novi): Students pay a \$100 facility fee for these off-campus programs. Parents are responsible for purchasing the assigned books for their students.

---

## **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](mailto:gifted@msu.edu)) or by mail by the end of the business day of the 4th class session.
- For drops occurring after the date of the 4th class session, no refund will be made for any programs dropped.
- Reservation and distance learning fees are non-refundable.
- Refunds may take up to 4 weeks.



# Summer Program Costs

These include GUPPY, IS4GT, MST@MSU, and MSTL.

---

## Application fee

The **IS4GT**, **MST@MSU**, and **MSTL** programs require a \$100 non-refundable application fee. Applications received after posted deadline dates will include a \$20 late fee. There is no application fee for GUPPY.

---

## Tuition

- **GUPPY 3-4**: \$275 (includes lunch for the student).
  - **GUPPY 5-6**: \$350 (includes lunch for the student).
  - For both **GUPPY** programs: Please see the other costs section (page 21) for hotel information for out-of-town families. Saturday dinner will be provided for students and family members during the evening activity (attendance is optional).
  - **IS4GT, MST@MSU**: \$1,500 residential, \$750 commuter (includes lunches). Extended day is available for commuter students for an additional cost. Financial aid is available.
  - **MSTL**: \$1,950 residential, \$995 commuter (includes lunches). Extended day is available for commuter students for an additional cost.
- 

## Tuition payment information

- **IS4GT, MST@MSU, and MSTL**: Once accepted into the program, each student must pay a \$150 tuition deposit confirming intent to participate. You will be notified of the deadline for the remaining balance of tuition. Contact the GATE office if a payment plan is needed. However, please realize that tuition must be paid in full before the program start date.
- **GUPPY**: Once accepted into the program, the student's family will be notified of the payment due date.
- **Dual enrollment**: Once enrolled, students will be billed by the MSU Student Accounts office. There may be an option for a payment plan indicated on the bill, depending on the student's enrollment date.

**For more information about dual enrollment, visit: [gifted.msu.edu/programs/dual-enrollment](https://gifted.msu.edu/programs/dual-enrollment). Please note that dual enrollment tuition is subject to change at the discretion of Michigan State University.**

---

## **How to pay**

Payment can be made by credit card on the GATE website ([gifted.msu.edu/payment](https://gifted.msu.edu/payment)) 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 the GATE office. Please refer to GATE website for check submission instructions.

---

## **Other costs**

- **IS4GT, MST@MSU, and MSTL:** Parents are responsible for getting their students to and from camp. If students are flying into Lansing's Capital Region International Airport, summer program staff will be able to pick up and transport them to MSU's campus for dorm check-in. If you book your flight into Detroit Metropolitan Airport, we cannot pick up your child. If residential students need to arrive early to camp or leave later than scheduled, parents must notify GATE and the extra room and meal costs will be charged to the parents. Students should bring a small amount of personal spending money for souvenirs, vending machine snacks, etc. Extended day is available to commuter students for an additional cost.
- **GUPPY:** For out of town families, GATE has arranged a local hotel, and reservation information will be distributed after the student is accepted into the program.

### **Estimated hotel costs:**

- 1 queen bed and pull-out couch: \$99/night plus taxes/fees
  - 2 queen beds: \$119/night plus taxes/fees
  - 3 queen beds suite with 2 bathrooms: \$149/night plus taxes/fees
- On campus dining: Family members may eat in MSU dining halls. See [eatatstate.msu.edu](https://eatatstate.msu.edu) for details.



- **Dual enrollment:** Students are responsible for purchasing the books assigned by the professor. Parents or students are responsible for transportation to and from class. If students are driving to class and parking on campus, they are responsible for obtaining and paying for a campus parking pass, or paying to park in metered lots. You will be sent additional information about parking after acceptance. If there are any optional field trips or activities planned by the professor, the cost is the responsibility of the student/parent. For classes offered through Ingham ISD, tuition varies by program. See individual course descriptions.
- 

## ***Cancellation policy***

All programs, or classes within a program, may be subject to a minimum enrollment of students and may be canceled at the discretion of the GATE office. Additionally, the residential portion of the programs may be canceled if there are not enough students signed up to stay on campus.

---

## ***Refunds and withdrawals***

**The application fee of \$100 is non-refundable.**

All requests for withdrawals and refunds for summer programs must be submitted in writing to the Gifted and Talented Education office via e-mail ([gifted@msu.edu](mailto:gifted@msu.edu)) or by mail at least 14 business days before the program begins in order to receive a 100% refund of tuition paid. A student who withdraws in writing within 14 business days before the program start date or after the program begins is not eligible for any refund.

Students dismissed for disciplinary reasons are not eligible for any refund.

Refunds may take up to 4 weeks.

---

## ***Financial aid***

Tuition assistance from the GATE office may be available to those with financial need. Visit the GATE website for financial aid eligibility information. Fill out the Financial Aid page of the application when you apply to a program.

**Financial aid from the GATE office or MSU does not apply to dual enrollment.**

Because financial aid availability is limited, families are limited to receiving one summer scholarship and one academic year scholarship within a three-year period. Families may still apply for a Financial Aid scholarship again within this 3-year period, but will be funded again only if there are funds available at the end of the application acceptance period. This financial aid policy is subject to change.

Students who have been dismissed from or have failed any GATE program may not apply for financial aid for any future GATE programs.

**FINANCIAL AID SCHOLARSHIPS ARE AVAILABLE**

Need-based scholarships are available to students due to the generosity of our donors to the Dorothy Lawshe Endowment fund and our grantor the Thoman Foundation. Transportation is supported by the Lansing Area Community Trust Fund.



**THE Dorothy Lawshe**  
ENDOWMENT  
*for Gifted And Talented Education*

In recognition of the impact Dorothy has had on the lives of Michigan children over the past several decades, her former students, colleagues, friends, and family created the Dorothy Lawshe Endowment for Gifted and Talented Education. The Endowment will help ensure that gifted and talented students continue to enjoy excellent, enhanced educational opportunities for years to come, and that high-ability students from disadvantaged backgrounds will have unimpeded access to those opportunities.

Please donate to help support GATE and gifted students in Michigan.

Online donations can be made by visiting [givingto.msu.edu/gift/?sid=1320](https://givingto.msu.edu/gift/?sid=1320)



MSUgifted 2019





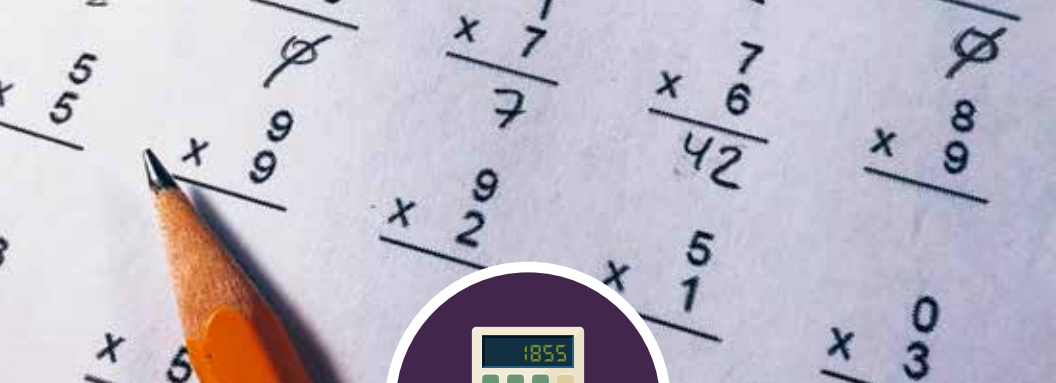
# *Academic*

# *Year Programs*

***Fall Semester 2019 – Spring Semester 2020***

Our academic year programs challenge gifted middle and high school students in math, literature, and language. Space is limited in academic year programs and the application process is competitive.

**Apply early!**



## Cooperative Highly Accelerated Mathematics Program (CHAMP)

CHAMP, in partnership with the Department of Mathematics and University Outreach and Engagement at Michigan State University, provides classroom instruction for qualified mathematically gifted students in grades 7-9.

🎓 CHAMP 1: Fall Semester 2019 – Spring Semester 2020

🎓 CHAMP 2: Fall Semester 2020 – Spring Semester 2021

### Important Dates for CHAMP Programs

#### CHAMP at MSU

Classes held Thursdays

First day of class (tentative):

Thursday, August 29, 2019

1:00 – 3:30 pm

MSU campus – Room TBD

#### CHAMP-Novi

Classes held Mondays

First day of class (tentative):

Monday, September 9, 2019

6:00 – 8:30 pm

Tollgate Education Center  
28115 Meadowbrook Road  
Novi, MI 48377

#### CHAMP – Avondale

Classes held Thursdays

First day of class (tentative):

Thursday, September 5, 2019

6:00 – 8:30 pm

Avondale High School  
2800 Waukegan St.  
Auburn Hills, MI 48326

**Application deadline: May 2, 2019**

For information about program eligibility, see GATE Program Requirements on page 6 of this catalog. For information about costs and payment, see Cost and Payments on page 19.

**Novi and Avondale  
information meeting -  
March 4, 2019  
See page 35 for details**

CHAMP 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 and meet the State of Michigan Academic Standards. In their first year of CHAMP, students study Algebra 1 and Algebra 2.

In the second year, CHAMP students study geometry and a standard pre-calculus course (trigonometry, analytic geometry, college algebra, and a brief introduction to calculus concepts).

Students must begin CHAMP with the study of Algebra 1. Bypassing one or more CHAMP courses is not allowed.

<b>Schedule:</b>	<b>Course:</b>
Semester 1 (Fall, Year 1)	Algebra 1
Semester 2 (Spring, Year 1)	Algebra 2
Semester 3 (Fall, Year 2)	Geometry
Semester 4 (Spring, Year 2)	Pre-Calculus

---

## ***Instructional Plan***

Students attend one class per week at their program location. East Lansing area students are dismissed early one afternoon each week from their respective schools in order to attend CHAMP. Each class lasts 2.5 hours. Traditional high school curriculum is taught at an accelerated pace, requiring the student to learn to be motivated and self-guided outside of the classroom to complete substantial homework. Throughout the year, there are also regularly scheduled CHAMP labs outside of school hours for students needing assistance with their assignments or for those preferring to study cooperatively with other CHAMP students. Students will be given an MSU account for the online course website to access CHAMP coursework/homework assignments and a forum for asking questions.

---

## ***Evaluations***

### **Evaluation of the Program**

Annual assessment of the program involves compilation and review of information gathered from university and local school personnel, parents,

and students. Expectations in the Michigan high school and national Common Core curricula have been incorporated into the CHAMP curriculum.

---

## **Evaluation of the Student**

The most direct measure of the program's success is the 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 Johns Hopkins University. Pre- and post-test results from CHAMP 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 tests. Midterm reports and end-of-semester (December and May) written evaluations are sent to each student's family and school district. These reports include details on progress in content,

participation, and letter grades. Credit and grades are recorded on the student's high school transcript. Student-teacher conferences are scheduled when needed, and student self-evaluation is strongly encouraged and developed.

Parent-teacher conferences are scheduled each semester to give parents an opportunity to communicate in-person with the teacher about their child's progress. Parents are welcome to contact the professor at any time with questions or concerns.

---

## ***Program Goals***

The mathematics content follows the traditional high-level, four-year high school curriculum: two years of algebra, plane/solid geometry, analytic geometry, and pre-calculus/trigonometry. The students complete this content in two years and receive mathematics credit on their high school transcripts; a grade report 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 in high school for other desired courses, e.g., a foreign language or college mathematics courses.



Students completing CHAMP should be prepared to enroll in an honors high school calculus course, an advanced placement (AP) high school calculus course, or a college calculus course.

---

## **Dual Enrollment Option**

An opportunity for postsecondary enrollment, also referred to as dual enrollment, is available to eligible 9th-12th grade students. The Postsecondary Enrollment Options Act (PSEO) permits students to take classes in both high school and college/university simultaneously. The purpose of PSEO is to provide a wider variety of options to high school students to ensure that all students continue to be challenged.

Michigan State University Gifted and Talented Education provides dual enrollment to admit qualified high school students to college courses while enrolled in their high schools. Specific post-CHAMP dual enrollment courses are listed on our website: **[gifted.msu.edu/programs/dual-enrollment](http://gifted.msu.edu/programs/dual-enrollment)**

---

## **Parent Responsibilities**

Contact school district representative(s) and home middle school and prospective high school to verify the student's institution:

- Will accept CHAMP completion to fulfill Michigan graduation standards.
- Will provide appropriate course opportunities upon the student's return to normal class schedules.
- Will not make the student repeat any math requirements.

These accommodations and acceptance should be verified by the parent prior to enrollment in any GATE program. If verified, students do not need to take a math class at their home school. However, neither GATE nor MSU guarantees acceptance of any credit by a student's home school.

Credit and grades are recorded on the student's high school transcript.



# Intensive Studies in Humanities, Arts, Language, and Literature

(ISHALL)

ISHALL, in partnership with the Department of English, the Department of Writing, Rhetoric, and American Cultures, and University Outreach and Engagement at Michigan State University, provides classroom instruction for qualified language arts students in grades 7-9.

🎓 ISHALL 1: Fall Semester 2019 – Spring Semester 2020

🎓 ISHALL 2: Fall Semester 2020 – Spring Semester 2021

## Important Dates for ISHALL Programs

### ISHALL at MSU

Classes held Tuesdays or  
Wednesdays\*

First day of class (tentative):  
Tuesday, August 27, or  
Wednesday, August 28, 2019  
7:45 – 10:00 am  
MSU campus – Room TBD

### ISHALL-Novi

Classes held Mondays

First day of class (tentative):  
Monday, September 9, 2019  
4:00 – 6:00 pm  
Tollgate Education Center  
28115 Meadowbrook Road  
Novi, MI 48377

### ISHALL – Avondale

Classes held Tuesdays

First day of class (tentative):  
Tuesday, September 3, 2019  
7:00 – 8:45 pm  
Avondale High School  
2800 Waukegan St.  
Auburn Hills, MI 48326

*\*Note: Your student will be assigned to attend either a Tuesday class OR a Wednesday class. Students attend only one class per week.*

**Application deadline: May 2, 2019**

For information about program eligibility, see GATE Program Requirements on page 6 of this catalog.  
For information about costs and payment, see Cost and Payments on page 19.

**Novi and Avondale  
information meeting -  
March 4, 2019  
See page 35 for details**

**Because students are studying typical high school literature content, ISHALL curriculum may contain mature content that is not appropriate for all students. Parents need to review the sample curriculum available in the online ISHALL Program Handbook and determine if their student is ready for the ISHALL curriculum.**

ISHALL is designed so that the participating students will complete in two years the English content assigned in Michigan High School Content Expectations (HSCE) for all four years of high school as well as meet the State of Michigan Academic Standards. The ISHALL program is taken in place of high school English courses, and ISHALL credit and grades are recorded on the high school transcript. It is suggested that students continue to take English classes after graduating from ISHALL for the remaining HS years.

Students must begin ISHALL with the Grade 9 English curriculum. Bypassing one or more courses is not allowed.

<b>Schedule:</b>	<b>Course:</b>
Semester 1 (Fall, Year 1)	Grade 9 English curriculum
Semester 2 (Spring, Year 1)	Grade 10 English curriculum
Semester 3 (Fall, Year 2)	Grade 11 English curriculum
Semester 4 (Spring, Year 2)	Grade 12 English curriculum

## ***Program Features***

Students study a wide range of texts and media in literature and the humanities including novels, biographies, plays, poetry, and film. Students are also exposed to a variety of different historical movements and types of literature, such as romanticism, enlightenment, Shakespearean drama, and comedy, in addition to modern works.

The ISHALL program is taught by an MSU professor in the English department or the Writing, Rhetoric, and American Cultures department. ISHALL is open only to eligible students who have demonstrated high skill in reading, writing, and other skills associated with language arts, and who have the commitment to pursue language arts in an intensive accelerated course while maintaining satisfactory performance in non-English middle school/ high school courses.

In addition to weekly classes, a regular study session is scheduled on Sunday afternoons, where an MSU student assistant provides students with an opportunity to work through the writing process and receive help on both current and previous course material. Attendance at this session is optional, but strongly encouraged for students who feel the need for feedback in addition to that received in class. Students will be provided with an MSU account to access the online course management website where assignments, resources, and forums are available.

Classes are small, optimally sized for fostering discussion while permitting the kind of individual attention often necessary for working through issues of expression. ISHALL emphasizes the wealth and variety of expressive possibilities as well as modes of critical engagement.

Guided discussion encourages students to be active readers, speakers, and questions, while both create and expository writing assignments provide opportunities for literary analysis, self-expression, and the development of writing, rhetorical, and analytical skills.

---

## **Parent Responsibilities**

Contact school district representative(s) and home middle school and prospective high school to verify the student's institution:

- Will accept ISHALL completion to fulfill Michigan graduation standards.
- Will provide appropriate English course opportunities upon the student's return to normal class schedules for the remaining high school years.
- Will not make the student repeat any English requirements.

These accommodations and acceptance should be verified by the parent prior to enrollment in any GATE program. If verified, students do not need to take an English class at their home school. However, neither GATE nor MSU guarantees acceptance of any credit by a student's home school.

Note: Parents are responsible for purchasing all books assigned in the ISHALL curriculum. A final book list will be provided before the program begins.

Credit and grades are recorded on the student's high school transcript.

# ***GATE Novi and Avondale Programs Information Meeting***

**March 4, 2019**  
**6:00 – 8:00 pm**

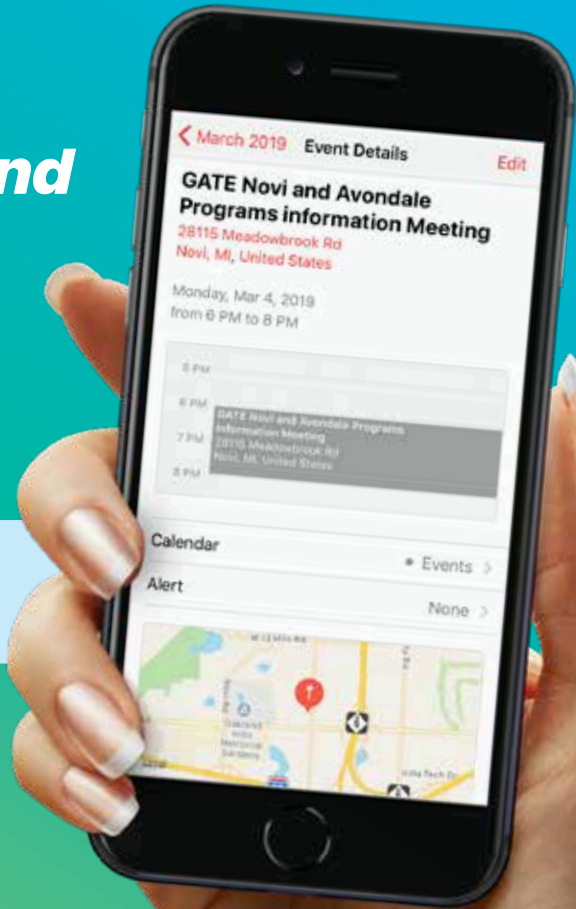
## **Tollgate Education Center**

28115 Meadowbrook Rd  
Novi, MI 48377

Learn about the Novi and Avondale CHAMP: Math and ISHALL: English accelerated programs for students in grades 7-9 and summer programs for students in grades 3-10.

All students from areas surrounding Novi and Avondale are welcome!

RSVP at  
**[gifted.msu.edu/novi2019info](http://gifted.msu.edu/novi2019info)**





## Langue pour Étudiants Avancés de Français (LEAF)

LEAF, in partnership with the Department of Romance and Classical Languages and University Outreach and Engagement at Michigan State University, provides classroom instruction for students in grades 7-10 who have advanced skills in language arts/French.

🎓 LEAF 1: Fall Semester 2019 – Spring Semester 2020

🎓 LEAF 2: Fall Semester 2020 – Spring Semester 2021

### Important Dates for LEAF Programs

#### LEAF

Classes held Thursdays

First day of class (tentative):

Thursday, August 29, 2019

4:15 – 6:30 pm

MSU campus – Room TBD

#### Hybrid Class

Weekly online synchronous classes held via live online video (Zoom). Face-to-face assessment at the MSU Campus on some Thursdays each semester

MSU campus – Room TBD

#### Online Lab Sessions

Sundays, 1:00 – 3:00 pm  
(online via Zoom)

Students attend 1 hour of their choice each week  
(1:00 – 2:00 pm or 2:00 – 3:00 pm).

**Application deadline: May 2, 2019**

For information about program eligibility, see GATE Program Requirements on page 6 of this catalog. For information about costs and payment, see Cost and Payments on page 19.

LEAF is designed so that participating students can complete in two years the French language content assigned by Michigan High School Content Expectations (HSCE) for all four years of high school as well as meet the State of Michigan Academic Standards. Every semester of LEAF corresponds to 1 year of high school French. Below are the equivalents.

Schedule:	Course:
Semester 1 (Fall, Year 1)	French 1
Semester 2 (Spring, Year 1)	French 2
Semester 3 (Fall, Year 2)	French 3
Semester 4 (Spring, Year 2)	French 4 and AP French

Every semester of the program emphasizes developing and refining the four skills: reading, writing, speaking, and listening. In addition, various in-class and out-of-class opportunities will be provided, especially in Semesters 3 and 4, in preparation for the AP French exam.

---

## **Program Features**

LEAF offers a new technology-enhanced format. Local students

will attend class on the MSU campus and long distance students will be video connected online simultaneously. Local and long distance students attend class via live video broadcast each week on Thursdays from 4:15 to 6:30 pm. On the first and third Thursdays of every month, all students will be required to attend class in person on MSU's campus from 4:15 to 6:30 pm. Families are responsible for transportation to the campus. Instructions for logging in and using the technology will be provided to all students. The LEAF program will make use of video conferencing technology to connect with students. This will enable students to participate actively in real time and also improve their speaking and listening comprehension.

Throughout the year, there are also regularly scheduled "virtual" LEAF labs on an afternoon for students needing assistance with their assignments. A teaching assistant (TA) will be available to connect with students via live video conferencing. The TA is an MSU student who is majoring in French. Students will be given an MSU account for the LEAF course website to access coursework, homework assignments, and online reference materials.



The LEAF curriculum is based on the Communicative Language Teaching Methodology. The underlying principle of this method is to encourage language learning through the use of active exposure and communication in the target language and culture in the classroom. The components of grammar and vocabulary will be introduced through a variety of input activities that focus on students' inductive reasoning abilities.

The first semester activities will include visual support (pictures, video, realia, etc.). As students progress in language acquisition, activities will make more use of vocabulary and structures covered in class. Students will also focus on writing and composition skills and be exposed to literary readings in French. Classroom time ranges between input presentations, reinforcement of concepts, group work assignments, and open-ended tasks with time for individual attention and student feedback. Homework includes written and online assignments, as well as recording oral exercises.

---

## ***Instructional Plan***

Our French classes are optimally sized for fostering discussion

while permitting the kind of individual attention often necessary for working through issues of expression. A minimum of ten students is required for the course to run.

All LEAF students should have a computer capable of running word processing programs compatible with MS Word and PDF, a microphone, and a webcam. Students should also have access to a high-speed Internet connection so they can connect to the LEAF course management website (D2L), and our online book platform called VHLCentral SUPERSITE 3.0. Through the SUPERSITE, students will complete all homework exercises as well as have access to study materials. The computer-enhanced portion of the course will provide the following advantages to students.

.....

### **Self-pacing**

Students can take the time they need to do the on-line portion of the course as long as they complete the assignments before the deadlines.

.....

### **Preparedness**

Learning a language successfully requires consistent work and effort (not last minute cramming before an exam). Having to



complete assignments in the VHLCentral SUPERSITE 3.0 on a regular basis will help students to keep up with the course material, come to class better prepared, and improve their chances of success in learning French.

**Immediate feedback**

VHLCentral SUPERSITE 3.0 grades homework exercises instantly and tells students which items are wrong.

**Easy access**

Students can do their homework from any computer with Internet access.

**Credit**

Credit and grades are recorded on the student's high school transcript.



**MSU Gifted and Talented Education @MSUgifted**

Went the MSU Museum today and spent some time with @msumuseumbear. It's jokes were "beary" funny. My sides hurt from laughing so much, it was really "unbearable" 🐻🐻🐻 #bearjokes #brownbear #msumuseum



♡ 5174322129





## **Amo Linguam Latinam (I Love Latin!)** (ALL)

ALL provides classroom instruction for students in grades 7-9 who have advanced skills in language arts.

 Grades 7-10

### **Important Information for ALL**

#### **Hybrid Class**

The first and third Tuesday of each month are face-to-face on MSU's Campus (tentative)  
MSU campus – Room TBD

All other Tuesday classes held via live online video (Zoom).

**Application deadline: May 2, 2019**

For information about program eligibility, see GATE Program Requirements on page 6 of this catalog.  
For information about costs and payment, see Cost and Payments on page 19.

ALL is designed so that the participating students can complete in two years the Latin language content assigned in Michigan High School Content Expectations (HSCE) for all four years of high school as well as meet the State of Michigan Academic Standards. Every semester of the GATE Latin program corresponds to one year of high school Latin. Below are the equivalents.

Schedule:	Course:
Semester 1 (Fall, Year 1)	Latin 1
Semester 2 (Spring, Year 1)	Latin 2
Semester 3 (Fall, Year 2)	Latin 3
Semester 4 (Spring, Year 2)	Latin 4 and AP Latin

The program emphasizes developing and refining two skills: reading and writing. Although Latin is no longer a spoken language, the course also draws upon speaking and listening skills to aid student comprehension. Discussions of language are anchored in topics of Roman and medieval culture, as well as in conversations about linguistics and the role of Latin in shaping English as a language. Students will take the National Latin Exam at the end of each year, and may elect to take AP Latin exam at the end of their second year.

The GATE Latin Program offers a technology-enhanced format. Students will attend class via live video broadcast or in person each week and a significant portion of the material will also be available on the course website for asynchronous learning. Once or twice a month, all students will be required to attend class in person on MSU’s campus. Throughout the year, students will be able to seek additional assistance via regularly scheduled “virtual” labs. Either the course instructor or a TA (teaching assistant) will be available to connect with students via live video conferencing.

---

## Student Advantages

- The accelerated program allows students to complete the traditional four-year high school Latin program in two years.
- The time freed by the program gives students more options, including honors/AP/IB classes or dual enrollment in college courses.
- Students have the opportunity to work with university professors in a small class setting.

---

## **Class Content and Procedures**

The instructor will prepare class activities that provide students with a conceptual and theoretical framework for the mastery of the goal areas for classical language learning: communication, culture, connections, comparisons, and communities. The GATE Latin program curriculum is based on the communicative language teaching methodology. The underlying principle of this method is to encourage language learning through the use of active exposure and communication in the target language.

Starting from the first semester, students will be exposed to the target language and culture in the classroom and online. Such components as grammar and vocabulary will be introduced through a variety of input activities which focus on students' inductive reasoning abilities. For first-semester students, the input activities will be accompanied by visual support. As students' progress with their language acquisition, the input activities will make more use of vocabulary and structures covered in class. Class time includes input presentations, reinforcement of the concepts, group work assignments and open-ended tasks with individual attention and student feedback.

Group work assignments and open-ended tasks include reading, writing, listening, and speaking activities with frequent practice in the recognition of word roots.

Homework assignments fall under two main categories: immediate application of the concepts covered in class and application of concepts to carry out more open-ended and communicative tasks. The immediate-application homework assignments serve as practice to reinforce the Latin grammar, morphology, and vocabulary covered in class. Students are required to turn in these assignments regularly to receive feedback about their understanding of the material covered. Once students display a strong understanding of the material, they also work on the more open-ended homework assignments, which consist of practical and creative application of the concepts. Students complete homework both online and on paper.

Students' writing skills are taught using a variety of tools depending on proficiency level. Students will write in Latin regularly and the length and complexity of their writing will increase in correlation with their proficiency. This composition follows a process-oriented approach where students are guided in different

writing stages like planning, drafting, and editing. As students are exposed to more literary readings in Latin, the writing assignments will incorporate some of the ideas covered in the reading and may request that students emulate the style of the reading. The synergy of these kinds of activities makes students more sensitive readers and more effective writers, both in Latin and in English. This also helps students understand the richness of meaning and expression in Latin literature and incorporate rhetorical and literary concepts in their own writing.

---

## **Instructional Plan**

Our Latin classes are optimally sized for fostering discussion while permitting the kind of individual attention often necessary for working through issues of expression. Ideally, 10-20 students would fill a section of the course.

All GATE Latin program students require a computer capable of running word processing programs compatible with MS Word and PDF, a microphone, and a webcam. Students also need access to a high-speed Internet connection so they can connect to their MSU account, the GATE Latin course management website (D2L), and any other online materials used. Students

will complete homework exercises and access to study materials via D2L and Eli Review. The computer enhanced portion of the course provides the following advantages to students.

.....

### **Self-pacing**

Students can take the time they need to do the on-line portion of the course as long as they complete the assignments before the deadlines.

.....

### **Preparedness**

Learning a language successfully requires consistent work and effort (not last minute cramming before an exam). Having to complete assignments online on a regular basis helps students to keep up with the course material, come to class better prepared, and improve their chances of success in learning Latin.

.....

### **Immediate Feedback**

Students can receive grades immediately on some homework exercises and can also be actively engaged in providing each other with feedback and language interaction.

.....

### **Easy Access**

Students can do their homework from any computer with Internet access.



## Dual Enrollment

Dual enrollment is an opportunity for students in grades 9-12 who need advanced coursework to pursue advanced learning by taking an appropriate level college class while still enrolled in high school. Some high schools may not offer certain elective subjects or special topic courses, but a student with interest and motivation can dual enroll in a college course to explore different subject areas. Students must receive a minimum qualifying score on a standardized test (such as the EXPLORE, PLAN, PSAT, SAT, or ACT) in order to qualify for dual enrollment. Students applying for dual enrollment must have a minimum of a 3.0 GPA. See the GATE website for more details.

🎓 Grades 9-12

**Please note that MSU does not guarantee entry into any course. Parents/guardians are responsible for completing application materials and submitting them to the university for approval. Students and parents/guardians are not permitted to contact departments or professors directly.**

**To view dual enrollment tuition costs, enrollment deadlines, and to apply for dual enrollment at Michigan State University go to [gifted.msu.edu/programs/dual-enrollment](https://gifted.msu.edu/programs/dual-enrollment)**

---

## ***Policies regarding dual enrollment at MSU***

- Questions regarding dual enrollment must be between the GATE office and a parent/guardian.
- Students must apply at least two weeks prior to the semester that they would like to enroll in.
- Not all courses are available to Dual Enrollment students. Some courses, such as CSE (Computer Science), maintain small class sizes and accept only undergraduate students enrolled in that degree program.
- Independent Study courses are not available to dual enrollment students.

---

## ***Sample Intro Level Courses***

Below are some typical intro level courses that dual enrollment students take at MSU. Some of the courses below have prerequisites—you can view prerequisite information on the GATE website or at [schedule.msu.edu](http://schedule.msu.edu). Also refer to the MSU Schedule of Courses website for dates and times that classes are offered.

<b>Course Number</b>	<b>Course Title</b>	<b>Credits</b>
ENG140	Literature and Society	4 credits <small>(or other 100-level ENG courses)</small>
MTH 132	Calculus I	3 credits
PHY 183B	Physics for Scientists and Engineers I	4 credits
CEM 141	General Chemistry	4 credits
EC 201	Intro to Microeconomics	3 credits
EC 202	Intro to Macroeconomics	3 credits
PSY 101	Introductory Psychology	4 credits
SOC 100	Introduction to Sociology	4 credits
PHL 101	Introduction to Philosophy	3 credits
WRA 101	Writing as Inquiry	4 credits <small>(This course is an MSU graduation requirement)</small>

**GATE Certificates and discounts cannot be applied to Dual Enrollment. Financial Aid is not offered for Dual Enrollment.**





MSUgifted 2019







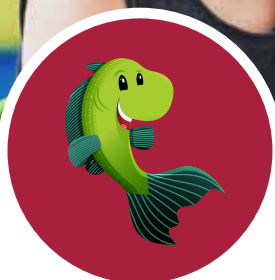
***Summer***

***Programs***

***Summer 2019***

GATE summer programs offer students the chance to experience advanced noncredit coursework and the college campus alongside their high achieving peers. Summer program applications are reviewed on a rolling basis and classes fill up quickly.

**Apply early!**



## Gifted University for Parents and Precocious Youth (GUPPY)

GUPPY is a weekend program offering students in grades 3-6 a variety of accelerated exploratory educational presentations and hands-on experiences in Michigan State University's laboratories and classrooms.

🎓 Grades 3-4

🎓 Grades 5-6

### Important Dates for GUPPY Programs

#### **GUPPY**

Grades 3-4: June 21 - 22, 2019

Grades 5-6: June 21 - 23, 2019

#### **Parent University**

June 23, 2019

9:00am – 3:30pm (tentative)

#### **Closing Ceremony**

For **both** GUPPY programs:  
A Closing Ceremony for all students and parents will be held on **Sunday, June 23, 2019** between 3:30 pm and 4:30 pm.

**Application deadline: May 2, 2019**

For information about program eligibility, see GATE Program Requirements on page 6 of this catalog. For information about costs and payment, see Cost and Payments on page 19.

GUPPY is designed for young gifted and talented students to attend classes taught by MSU faculty and staff at Michigan State University for the weekend. This GATE program will offer students a variety of accelerated exploratory educational presentations and hands-on experiences in MSU's laboratories and classrooms. Please see the different class track options on page 50. Each track has a variety of STEAM-based classes. Participants will eat lunch in the MSU dining halls. There will be an optional evening activity at MSU on Saturday evening; details will be announced. A parent must accompany the student to this activity. On Sunday at 3:30 pm, a closing ceremony will celebrate the GUPPY experience for students and parents.

---

### ***Commuter option***

Local families commute daily by dropping off and picking up their student each day from campus.

---

### ***Hotel stay option***

Families living a distance from campus must accompany their students and may stay overnight at a locally prearranged hotel

at a special MSU rate or make reservations on their own with another hotel of their choice. Families are responsible for the cost of their hotel stay. See Other Costs on page 23 for more information about hotel costs.

---

## ***GUPPY's Parent University***

Parents, save the date! You are invited to attend GUPPY's Parent University, which provides informational presentations conducted by gifted experts. Parent University occurs on **Sunday, June 23, 2019, from 9:00 am to 3:30 pm** (tentative) (lunch on your own). Various topics related to gifted education and raising a gifted child will be discussed. The morning presentations will focus on introductory topics, while the afternoon presentations will be about intermediate topics. Past topics include: Gifted 101, Roadmap to Advocacy, IQ Testing, and Spatial Learners. There will also be an Ask the Gifted Expert panel session where the speakers will answer parent questions. Directly following Parent University is the GUPPY Closing Ceremony with your GUPPY student.

## GUPPY Track Options

On the application, you will be asked to rank the tracks in order of preference. Space is limited in each track, and each track will be filled on a first-come first-served basis. The sooner you complete your application, the more likely you are to receive your first track choice.

### GUPPY 3-4 Track Options

Grades 3-4 • June 21 – June 22, 2019

Students in Grades 3-4 will take the classes in one of the tracks below.

Track	Class 1 8:30 – 9:45 am	Class 2 10:05 – 11:20 am		Class 3 12:45 – 2:00 pm	Class 4 2:20 – 3:35 pm
A	Chemistry	Astrophysics	Lunch and Coordinated Activity Time	Creative Writing	3D Math
B	<b>Art:</b> World of Wonder and Fantasy	JavaScript APP Game Design		Mathematical Brainteasers	Saturday: Lords of the Sky Sunday: Understanding Science <b>States of Matter:</b> Molecule Interactions
C	<b>Neuroscience:</b> Nervous System	Saturday: Tour Wharton Center for Performing Arts Sunday: Theatre Costume Workshop		Computer Graphic Design	<b>Art:</b> Around the World
D	<b>Imagination Transformation:</b> Drama/Theatre Skits	Writing Fan Fiction		Astonishing Astronomy	<b>Robots:</b> Magnetic Maze Craze

# GUPPY 5-6 Track Options

Grades 5-6 • June 21 – June 23, 2019

Students in Grades 5-6 will take the classes in one of the tracks below.

Track	Class 1 8:30 – 9:45 am	Class 2 10:05 – 11:20 am		Class 3 12:45 – 2:00 pm	Class 4 2:20 – 3:35 pm
1 Pre-Med Junior	Osteopathic Doctors	Junior MDs	<b>Lunch and Coordinated Activity Time</b>	Friday: CPR Saturday: Vet Med I Sunday: CPR	Friday: Dental Saturday: EMS Sunday: Vet Med II
2	JavaScript APP Game Design	<b>GEOMATH</b> Geometric Math and Art		Mythological Art	Do you love to read? Do you love Harry Potter?
3	Mental Mathematics	<b>Art:</b> Nature's Gift of Art		<b>Engineering:</b> Tower Power	Understanding Graphics in Media



**MSUgifted**

2019

Learning is fun at all ages. 🧑🏫🧑🏫🧑🏫🧑🏫📱📱📱 #starttheyoung  
#GUPPY #thefamilythatlearnstogether #gifted



5174322129



## Intensive Studies for Gifted and Talented (IS4GT)

NEW for summer of 2019, IS4GT is a one-week advanced program in a specific concentrated curriculum. This option is for 7-11th grade students. Classes will focus on one main topic for one week (either June 17-21, 2019, or June 24-28, 2019).

 Grades 7-11

### Important Dates for IS4GT

#### Week of June 17-21, 2019

**June 16, 2019**

**1:00 – 2:30 pm**

Check-in at residential hall

**3:00 – 4:00 pm**

Orientation for parents and students  
(including commuter)

**June 17-21, 2019**

Classes held Monday – Friday • 9:00 am – 5:00 pm  
Lunch included for all students (including commuter)  
Extended day is available for commuter students at an additional cost.

**June 21, 2019** (Friday)

Around 5:00 pm:

Check-out and Closing Ceremony

#### Week of June 24-28, 2019

**June 23, 2019**

**1:00 – 2:30 pm**

Check-in at residential hall

**3:00 – 4:00 pm**

Orientation for parents and students  
(including commuter)

**June 24-28, 2019**

Classes held Monday – Friday • 9:00 am – 5:00 pm  
Lunch included for all students (including commuter)  
Extended day is available for commuter students at an additional cost.

**June 28, 2019** (Friday)

Around 5:00 pm:

Check-out and Closing Ceremony

**Application deadline: May 2, 2019**

For information about program eligibility, see GATE Program Requirements on page 6 of this catalog.  
For information about costs and payment, see Cost and Payments on page 19.

---

## **What your Tuition Payment Covers**

- Instruction and supervision
- Notebook with class handouts and presentations
- Lab supplies and materials for course activities
- GATE T-shirt
- For commuter students, lunch is provided Monday – Friday.
- For residential students, all meals are provided for the duration of camp. Residential tuition also covers the cost of housing, 24/7 supervision, and evening activities.

---

## **IS4GT Course Offerings for June 17-21, 2019**

---

### **Intensive Study in Aircraft Piloting**

#### **Grades 9-11**

Aviation is a broad industry with many career possibilities from piloting, air traffic control, and aerospace engineering. This course will focus on the aerodynamics of aircraft flight and control including unusual characteristics of flight, how entry is made, and how to recover.

Students will also learn aircraft systems, weather, the U.S. air traffic control system, airport environments and federal aviation regulations. This knowledge is a base set for any discipline within the aviation industry.

Each student will get an introductory flight lesson in a Diamond DA20 aircraft which will include the following tasks: Passenger Briefing, Cockpit Management, Engine Starting, Radio Communications, Taxiing/ Brake Check, Before Takeoff Check, Normal Takeoff & Climb, Aircraft Flight Instruments, Climb/ Level Off, Straight & Level Flight/ Use of Trim, Pitch/ Power Coordination, Shallow Banked Turns, Descents/ Level Off, Traffic Pattern Operations, Collision Avoidance, Normal Approach & Landing, After Landing Checks, Parking, Securing & Proper Tie Down.

---

### **Intensive Study in Forensic Science**

(Formerly CSI)

#### **Grades 7-9**

The Forensic Science program at Michigan State University is a one-week commuter or residential program. The curriculum is intended for

academically able students who are currently in grades 7, 8, or 9 and at least 12 years old. All students will work in a university setting with forensic science professionals.

Forensic science is the application of science for the purposes of law. Through a variety of educational presentations and hands-on experiences, students will learn how scientific knowledge can be applied to aid in criminal investigations. Throughout the week, students will learn methods used to collect evidence from mock crime scenes and the scientific methods and techniques used to analyze evidence in the laboratory. At the end of the week, students will be exposed to the legal side of forensic science with the opportunity to testify in a mock trial.

---

## **Intensive Study in Number Theory**

### **Grades 8-10**

**Prerequisite: Must have completed algebra 2 and geometry**

The goal of number theory is to present the basic techniques of mathematical proof and the

logic behind them. This number theory course will help students think like mathematicians from the very beginning by offering a large variety of examples and problems for the students to work out in class and on their own. The class will contain an extensive list of basic mathematical definitions and concepts needed in abstract mathematics.

---

## **IS4GT Course Offerings for June 24-28, 2019**

---

### **Intensive Study in Behavioral Mathematics in Artificial Intelligence**

#### **Grades 8-11**

Game developers use many tricks to give their characters decision-making abilities. This course is for anyone wishing to know more about the mathematics behind common game behavior.

The class will introduce a raft of important techniques used by game AI developers from decision theory, game theory and utility theory. The instructors will also go into the theoretical background behind these techniques.



These topics, though complex, will be made accessible to all students; the instructors will avoid the esoteric and focus on topics which are directly useful for making actual video games.

---

## **Intensive Study in Lab Research in Microbiology**

### **Grades 10-11**

Metabolism is the group of chemical transformations that each cell performs to grow and divide. Biologists are able to learn how these reactions occur by obtaining a snap shot of all the intermediates that accumulate under a certain condition, a technique known as metabolomics. By using metabolomics we can also identify potential effectors, toxic compounds to enzymes, or bottlenecks that influence carbon distribution and cell growth. Defining metabolic profiles can help biologists design genetic strategies to either cure diseases, relief cells from toxic compounds, or improve platforms for biotechnology. Mentees will learn how to collect samples, extract metabolites, and interpret data from environmental bacterial strains.

---

## **Intensive Study in Pre-Med Education**

(PRE-MED ED)

### **Grades 7-9**

Students who participate in this program will learn about different areas of the healthcare fields. Does becoming a doctor, nurse or other health care practitioner sound fascinating to you? If so, this is the perfect program for you! This program involves three of MSU's health colleges: College of Nursing, College of Human Medicine, and the College of Osteopathic Medicine. This program will foster an interest in the STEM fields, create awareness of college admission, and generate a strategy to become a successful health care professional. As participants, students will discover the content of medical courses through demonstrations and hands-on activities, explore the options for undergraduate majors, and gain information about medical specialties. Students will be learning and participating in CPR, nursing simulation, medical escape room, intubation, phlebotomy, pharmacology, emergency preparedness, and much more.

# Intensive Study in Remote Drone Piloting

Grades 9-11

Prerequisite: Must be 14+

This class will introduce you to commercial small unmanned aircraft system (sUAS) operations, otherwise known as "drones." In the last 2-3 years the commercial marketplace has seen a surge in utilizing sUAS as a more economical tool used in the sectors of construction, public safety, film, photography, real estate, news, surveying, inspections, and delivery, to name a few.

In this class, students will learn about the topics related to passing the FAA Unmanned Aircraft General (UAG) written exam. Topics include aerodynamics, FAA regulations, national airspace, weather, aircraft loading/performance, and operational safety/risk management. Hands-on experiences will include: Paper airplane models, small indoor quadcopter flight maneuver training, pre/post sUAS flight planning, mission demonstrations involving commercial grade outdoor sUAS, and analysis of collected sUAS data using photogrammetry to build photo maps, 3D models, topographical maps, and agricultural maps.



**MSUgifted**

2019 · 🌐

BEST CAMP EVER! Learned so much this week, made a bunch of new friends. Can't for next month for MST@MSU. 🌞🏛️👍📱🎉 **#msugifted**  
**#learning #friends #is4gt #mstatmsu**



5174322129



*Join us and explore the*

# *Human* **BRAIN**

*Brain Bee at MSU*

**Sunday, January 27, 2019**

12:30 PM

An exciting, live Q&A  
competition for high-school  
students.

*Neuroscience Fair*

**Saturday, April 13, 2019**

12 - 4 PM

Experience neuroscience  
firsthand at this free event with  
fun activities for all ages.



Neuroscience Program  
MICHIGAN STATE UNIVERSITY

[neuroscience.natsci.msu.edu/outreach](http://neuroscience.natsci.msu.edu/outreach)



# Math, Science, and Technology

(MST@MSU)

The Mathematics, Science, and Technology (MST@MSU) program at Michigan State University is a one-week summer commuter or residential program for academically talented students who are currently in grade 7 or 8 during the 2018-2019 school year. To sign up for the residential option, students must be a minimum age of 12 years old.

🎓 Grades 7-8

## Important Dates for MST@MSU

### July 8-12, 2019

#### July 7, 2019

**1:00 – 2:30 pm**

Check-in at residential hall

**3:00 – 4:00 pm**

Orientation for parents and students (including commuter)

#### July 8-12, 2019

Classes held Monday – Friday

9:00 am – 5:00 pm

Lunch included for all students (including commuter)

Extended day is available for commuter students at an additional cost.

#### July 12, 2019 (Friday)

Around 5:00 pm:

Check-out and Closing Ceremony

(all students and parents)

**Application deadline: May 2, 2019**

For information about program eligibility, see GATE Program Requirements on page 6 of this catalog. For information about costs and payment, see Cost and Payments on page 19.

The program is held at the MSU campus and offers a variety of topics within mathematics, science, and technology, focusing real-world applications in these areas. The goal is to match the intellectual abilities of talented students with rigorous and challenging course work, which provides enrichment but does not duplicate or accelerate course work that is part of the regular middle school curriculum. Students will participate in two classes and one workshop. See descriptions on the following pages. Students will be asked to rank their preference of topics.

---

## **What your tuition payment covers**

- Instructional materials, class activities, field trips
- GATE T-shirt and water bottle
- For commuter students, lunch is provided Monday – Friday.
- Residential tuition covers all meals during camp, housing in a dorm, 24/7 supervision, and evening activities.

---

## **MST Offerings**

MST class and workshop choices are subject to change or cancellation at the discretion of the GATE office, and such changes do not warrant refunds or withdrawals.

**We cannot guarantee placement in any of the courses offered.**

---

## **MST Class Offerings**

### **Biotechnology**

#### **From Genes to Genomes**

Did you know that except for identical twins, no two people in the world are genetically alike? About 99.9 percent of the DNA of every person on the planet is exactly the same. It is the 0.1 percent of different DNA that makes us all unique. DNA is your body's blueprint, and it can be manipulated for practical applications in the field of biotechnology.

For example, DNA "fingerprints" obtained by analysis of tissue or body fluids found at crime scenes can provide definitive evidence that a suspect is guilty or not. DNA technology can also be used to improve crops, to determine if a person has the genetic information for certain diseases before symptoms appear, and to do research on treatments and cures for genetic diseases. Anthropologists use DNA identification techniques to trace human origins and migrations.

In this class, students will prepare a DNA fingerprint using restriction

enzymes and gel electrophoresis to solve a simulated crime scene investigation. Students will also genetically transform E.coli bacteria with a gene from a bioluminescent jellyfish and observe how the genetically engineered bacteria glow under UV light. Hands-on experiences will include: Assembling a model of DNA, extracting DNA from saliva and making a DNA necklace, and touring the MSU gene sequencing facility.

---

## **Chemistry**

### **Exploring our Atomic World**

Chemistry is everywhere in the world around you. It's in the food you eat, clothes you wear, water you drink, medicines you take, and the air you breathe.

Chemistry is sometimes called the "central science" because it connects other sciences to each other, such as biology, physics, geology, and environmental science. Chemistry is the branch of science where we study the properties of matter and its changes; it helps us to understand why propane burns, how glow sticks work, and what materials can be used to make a battery. Doctors, engineers, forensic scientists, and researchers use chemistry to help us live longer, develop new and better materials, solve crimes, and find cures for

diseases. In this course students will learn both introductory and advanced chemistry concepts. Students will participate in laboratory activities designed to show the many applications of chemistry. The course includes unique, exciting, colorful, and explosive demonstrations of the interactions between different substances. Hands-on experiences will include: Using liquid nitrogen to flash freeze "Dippin' Dots," chemically separating water into hydrogen gas and oxygen gas using electrolysis, and building a working wet cell battery.

---

## **Competitive Math**

### **Turning Life's Negatives into Positives**

The goal of Competitive Math is to harness the enthusiasm and drive that students have in mathematics to allow them the chance to expand their mind and challenge themselves in a friendly and informal, yet competitive atmosphere.

This course will help students develop strategies to solve common math problems typically found in local, regional and national contests. Additionally, students will learn to appreciate the art of mathematical problem-solving while strengthening the ability to employ problem-solving strategies.



Students will be challenged with exposure to mathematical concepts that might not otherwise be encountered in the public schools.

---

## **Nuclear Astrophysics**

What do the history of the universe, the life and death of stars, and the elements that make up your body have in common? Nuclear astrophysics! Nuclear reactions such as fusion, fragmentation, and radioactive decay have guided the chemical evolution of the universe and the energy cycle in stars.

This course, sponsored by the Joint Institute for Nuclear Astrophysics (JINA-CEE) and MSU's world-class National Superconducting Cyclotron Laboratory (NSCL), will introduce you to the world of nuclei in deep space. Topics will include the mysterious origins of cosmic rays, the latest research in nuclear astrophysics, and careers in research science (or, "people will pay you to learn things")! Hands-on experiences will include an introduction to nuclear concepts with a marble-based model, a tour of NSCL's rare isotope research areas, and experimentation with concepts using several different model types.

---

## **Raspberry Pi**

Raspberry Pi is a small computer that you can use to learn programming. This course will introduce students to coding like they've never done before. Each student will learn to code on a Raspberry Pi machine of their own which they will get to take home at the end of the program.

Students will set up the board and make it accessible before learning server basics including FTP and building a simple web server using HTML and JavaScript. From there, students can learn how to make a video game emulator, create an ad blocker, and make the Pi work similarly to Google Home or Alexa. There is no previous coding experience necessary. Hands-on experiences will include preparing your own Raspberry Pi, learning several different coding languages, and building on previous coding experience that you may already have.

---

## **MST Workshop Offerings**

---

### **Anime and Manga**

Anime is an art form to those who appreciate it. A wide range of audiences each year are targeted with its complicated, in-depth and emotional storylines. Topics

include the history of anime and manga, anime in gaming, and 'old school' anime. Hands-on experiences will include: Viewing anime and anime music videos from a variety of genres, discussing/debating anime and Japanese pop culture, enjoying Japanese food/snacks, reading/creating manga, karaoke, and an introduction to anime conventions and Cosplaying.

---

## **Archery**

In this on-site, hands-on workshop, students will have the opportunity to learn the essentials of archery. The foundation for each class will teach archers some fundamentals and drills to strengthen the archer's confidence and increase proficiency. Each class will build on the previous class. Students will be introduced to the recurve bow, compound bow, and crossbow. Whether you are a beginner or skilled shooter, this class has something to offer everyone.

(Please note: All necessary equipment will be provided.)

---

## **Composing Electronic Music**

Ever wonder how you can use a technology to create music? If so, then this is the course for you. Best of all, no

experience is required. With the power of technology, you can compose and perform electronic music even if you don't know how to read music or play an instrument. In this course, students will learn live recording techniques, audio editing, and the basic of digital audio. Students will build a skill set and music vocabulary through the use of programs on tablets and cellphones. The course will also explore the science and math behind sound and use this knowledge in exciting ways to compose their own original works. Again, no experience is required and all forms of musical experience are welcome. Hands-on experiences will include: Learning the basics of technology to record, edit, and create sounds, utilizing programs readily available on tablets and cellphones for music production, and composing new original music.

---

## **Film Analysis and Evaluation**

Many people watch films for merely entertainment purposes. Though this is a perfectly acceptable purpose for viewing, it often means that viewers are unaware of the messages that filmmakers are trying to help audiences understand. Those messages may even



change based on an audience. For instance, the audience of an original film might get one message while the audience from a later remake might get something completely different. In this workshop, we will use a variety of films/film clips not only to learn about how to think more deeply about the messages filmmakers are presenting; we will also identify and apply specific criteria for evaluating those messages as well as other key criteria specific to film.

## Social Rhetoric

Rhetoric. What does that really mean? Why does the media often use the word rhetoric with disdain? What is rhetoric, in particular beyond the appeals of ethos, pathos, and logos most often discussed in high schools? In this class, students will investigate the answers to these questions with a shared purpose: to learn how to analyze the world around them more rhetorically. In this process, students will engage in activities to examine and to discuss the world and its complexities through various rhetorical lenses. Projects will include examining current events and the ways in which the social and cultural contexts create exigencies for informal discussions and formal arguments.

## Studio Arts

In this class, students will create several beautiful, creative, and fun pieces of art. This workshop will explore a variety of mediums and complete as many projects as time allows. Students will learn not to stress about their talent and experience, but be successful in their artistic expression. Exploring new ways of thinking about and looking at the world around and seeing it through an artistic lens. Expect to try something new and to draw in a way unlike the ways you have tried before. During each project, students will more than just create an art piece; the whole class will learn about it!

From discussion about the mediums being used and the history behind the art piece and connecting movements to presentations containing various images, videos, and information, students will receive a well-rounded experience challenging them both mentally and pushing their art skills to the next level.



# Math, Science, Technology, and Leadership (MSTL)

The Mathematics, Science, Technology, and Leadership (MSTL) program at Michigan State University is a two-week summer commuter or residential program for academically talented students who are currently in grades 9 or 10 during the 2018-2019 school year.

 Grades 9-10

## Important Dates for MSTL

### July 8-19, 2019

#### July 7, 2019

1:00 – 2:30 pm

Check-in at  
residential hall

3:00 – 4:00 pm

Orientation for parents  
and students

(including commuter)

#### July 8-12, and July 15-19 2019

Classes held  
Monday – Friday

9:00 am – 5:00 pm

Lunch included for all  
students (including  
commuter)

Extended day is available  
for commuter students at  
an additional cost.

#### July 13-14, 2019

Weekend activities for  
residential students  
only

#### July 19, 2019 (Friday)

Around 5:00 pm:  
Check-out and  
Closing Ceremony

(all students and parents)

**Application deadline: May 2, 2019**

For information about program eligibility, see GATE Program Requirements on page 6 of this catalog.  
For information about costs and payment, see Cost and Payments on page 19.

The MSTL program offers advanced curriculum in STEM areas, as well as a leadership workshop. Students will take two STEM-based classes that have been designed to stimulate students to learn about new developments in mathematics, science, and technology, and to explore related career fields. Students will also take one leadership workshop which will introduce them to concepts and skills required to be a leader in STEM fields. See class and workshop descriptions on the following pages. Students will be asked to rank their preference of topics.

---

## **What your tuition payment covers**

- Instruction in two intensive STEM classes and one leadership workshop
- Instructional materials, class activities, field trips
- GATE T-shirt and water bottle
- For commuter students, lunch is provided Monday – Friday.
- Residential tuition covers: all meals during camp, housing in a dorm, 24/7 supervision, and evening activities.

---

## **MSTL Offerings**

MSTL class and workshop choices are subject to change or cancellation at the discretion

of the GATE office, and such changes do not warrant refunds or withdrawals.

**We cannot guarantee placement in any of the courses offered.**

---

## **MSTL Class Offerings**

### **Competitive Mathematics**

The goal of Competitive Math is to harness the enthusiasm and drive that students have in mathematics to allow them the chance to expand their mind and challenge themselves in a friendly, informal, but competitive atmosphere.

This Competitive Math course will help students develop strategies to solve common math problems typically found in local, regional and national contests. Additionally, students will learn to appreciate the art of mathematical problem-solving while strengthening the ability to employ problem-solving strategies. Students will be challenged with exposure to mathematical concepts that might not otherwise be encountered in the public schools. This course aims to foster enjoyment in mental math and other intellectual activities.

---

## Microbe-Microbe and Microbe-Plant Interactions

Did you know that microbes are everywhere, including all over plants? In fact, just like in humans, certain microbes can help plants grow faster and healthier. One group of microbes that loves living on plants is the methylophils, and interestingly these bacteria can use Rare Earth Elements (REEs) to grow. REEs are precious metals that have been used in some countries for decades as chemical fertilizers to increase crop production. During our workshop we will solve the following questions: If methylophils can make plants grow better, and REEs can as well, how will the two interact together with plants? And how do REEs affect the methylophilic community? We also aim to investigate the intriguing possibility that methylophilic bacteria can use REEs to enhance plant growth. Our future microbiologists will learn about microbe-microbe and plant-microbe interactions, metabolism, and the role of REEs in biology, all while conducting and designing their own research experiment. They will learn fundamental scientific concepts such as: hypothesis generation and testing, data generation and analysis, and data presentation.

---

## Fascinating Physics

What do fidget spinners, lasers, and radioactivity have in common? They can all be understood with physics! Our everyday experience includes a bewildering number of gadgets and natural phenomena. In this course, students will study four areas of physics: mechanics (linear and rotational motion), electricity (voltage vs current), waves (sound and light), and radioactivity. Students will be challenged in these areas of physics that will go beyond the science standards for high school students.

While learning about these topics, students will have the opportunity to observe and participate in numerous interesting demonstrations from the extensive stock of lecture demos used in MSU physics classes. In the lab portion of the class, students will use some of the same high-tech equipment that undergraduate students use to conduct a variety of experiments.

Throughout the course students will develop team-building and leadership skills as they work together in labs and lectures. Students will also learn how physicists apply math and use computers to help them

explain and better understand the world around them. Along the way, students will realize that the more they learn, the more questions they can raise about technology and nature. Students will learn that many of their questions can be answered by concepts learned in the fascinating field of physics.

---

## **Molecular Biology**

Do bacteria think? Bacteria certainly do not have a brain like you and I, but they are capable of remarkable behaviors. Bacteria respond to changes in their surroundings, talk to each other, and organize in complex communities. Some bacteria can swim and, using the equivalent of a nose, find their way to their favorite food. This behavior, called “chemotaxis,” is widespread in the bacterial world and plays an important role in collective migration, colonizing plant roots, or infecting our bodies. By studying how chemotaxis works, students will discover the simple molecular mechanisms that form the building blocks of sophisticated signaling networks. Using computer simulations, we will explore how signaling networks controls bacterial behaviors in complex environments.

---

## **Robotic Technologies**

Robots are being used in many different ways from helping us reach deep outer space all the way down to the helping save the coral reefs in the ocean. Robots are the next technical revolution and when programmed, can carry out a complex series of actions. Robotic technologies is the development of processes to create new intelligent robotic systems. Students will understand how robots are built, operated and maintained through an understanding of computer science and mechanical engineering.

Students will learn to code, use sensors, along with a microcontroller to build an autonomous robot.

---

## **Motion Design and Animation**

### **From Ideation to Creation**

All of the visual effects we see in films and video games have their basis in math and programming. Everything from glowing abstract fractals in a music video to a stormy ocean in a blockbuster film have been created by teams of programmers who convert real-world concepts into lines of code.

These tools create a unique partnership between man and

machine. We provide the basic rules and computers work intelligently and autonomously to create a finished product. Often times the results are completely unexpected and would be impossible to achieve solely by humans.

Students will use tools such as Cinema4D, Mograph, X-Particles and simple programming languages to generate animations and images ranging from realistic to completely abstract.

Students will also pitch ideas and have the option to collaborate with fellow students to create larger, more advanced projects.

At the end of the class students will have a broad understanding of how procedural animation tools work and will have produced several animations and digital compositions based on their ideas.

---

## ***MSTL Workshops***

---

### **Becoming a Leader through Community Engagement**

Do you enjoy working within your community? Do you like helping people?

In today's global economy, there is a growing need for well-informed leaders to

recognize and solve complex problems; establish and maintain flourishing relationships; produce innovative and effective products and services; identify conflicts and bring them to a resolution; and cultivate diversity, inclusion, and equity. For these reasons, the activities presented in this class will assist students with developing an understanding and familiarity with various personal and leadership development strategies intended to strengthen skills in civic engagement, deep reflection, active listening, co-creative and transformative learning, capacity building, forming partnerships and networks, and program/project planning and outreach. More specifically, the program focuses on providing students with an understanding of ethical leadership, effective communication, relationship building, grassroots organizing, advocacy, and conflict resolution strategies.

---

### **Leveraging Digital Rhetoric as a Leader**

In this leadership class, students will review rhetorical frameworks and will investigate the "screens" with which we interact with a two-fold shared purpose: to learn how to analyze the world around them more rhetorically and to create a digital composition of their own.

In this journey, students will engage in activities to examine and to discuss the digitized world through various rhetorical lenses. Resulting projects will include websites and videos to practice (a)synchronous digital artifacts for selected audience and purposes.

---

## **Entrepreneurial Leadership**

This introductory business course covers the basics of planning and launching your own successful business. Whether students want to start their own moneymaking business or create a nonprofit to help others, this course helps students develop the core skills they need to be successful. Students will learn strategies for brainstorming new business ideas, attracting investors, marketing their business, and managing expenses. Students will discuss inspirational stories of teen and adult entrepreneurs who have turned their ideas into reality, and gain insight from these case studies before beginning their own business plan.

Through covering these areas and exploring the personal skills and other factors that contribute to small business success and failure, students will be well on their way to developing their own entrepreneurial ideas into a business.

---

## **Leadership in Public Speaking and Policy Analysis**

Debate allows students to become more proficient in speaking as well as researching, comprehension, writing, and reasoning skills. Fact-filled and passionate debates provide the incentive for students of all academic and socioeconomic levels to express their opinions assertively in a respectful manner on a relevant issue or topic. Using the high school policy debate topic, students will be introduced to skills fundamental to understanding argumentation, debate, and public speaking. Debate has been shown to facilitate a number of beneficial skills, including promoting rigorous and critical thinking, more effective communication skills, and improving academic, occupational, and civic achievement.

MST's Debate workshop will cover more complex debate theories such as debate mechanics, reasoning, clash, research, and presentation. Students will also learn about flowing and evidence credibility as well as the Toulmin model of argument (data, claim, warrants, qualifiers, rebuttals, and backing). Hands-on experiences will include debate preparation and practice on 2-person teams, debate "games," and participating in judged debates.





## Ingham ISD

Ingham ISD is a regional educational service-agency that offers programs and services to 12 public school districts, 10 public school academies, and over 44,000 students. It reaches into seven counties. Our continuum of programs and services includes summer camps to challenge young minds.

🎓 Grades 4-10

For dates, more information, or to apply visit:

**[inghamisd.org](http://inghamisd.org)**

---

### ***Summer 2019 Programs***

#### **STEAM Geekend Camp**

📅 **Spring 2019** • 🎓 For students in grades 5-7

This camp is held on a Saturday for students in grades 5-7 who are interested in learning more about science, technology, engineering, arts, and mathematics (STEAM). Students have an opportunity to experience multiple programs throughout the day in areas such as robotics, cyber security, artistic photography, and more. Registration will be available in February.



---

## Wilson Talent Center Summer Camps

### Summer 2019

The Wilson Talent Center will be hosting several summer camps in areas such as Engineering, Culinary Arts, New Media, and more. Registration will be available in April.

---

## Kids' College

### July 8 – 19, 2019 • For students in grades 4 or 5

Kids' College is a two-week learning experience for students who are identified as having high abilities or interest in science and engineering. Students focus on inquiry-based experiences with hands-on and applied learning.

#### **Cost: \$290**

(partial/full scholarships may be available based on need).

---

## Mathematics Analytic Series: Cultivating Optimum Teamwork (MASCOT)

### July 8 – 19, 2019 • For students who have completed grades 6 or 7

MASCOT is a two-week program designed to serve students who are identified as having high abilities or interest in mathematics. This program challenges students to develop a better understanding of mathematics through the use of problem solving applications, mathematical reasoning and collaboration.

#### **Cost: \$290**

(partial/full scholarships may be available based on need).

# UN RAV ELING THE MYST ERIES

MICHIGAN STATE UNIVERSITY

**SCIENCE  
FESTIVAL**

APRIL 5-20, 2019

[sciencefestival.msu.edu](http://sciencefestival.msu.edu)





# Spartan Youth Programs

Camps, Courses, Places to Visit,  
Programs, and Other Activities  
for Kids of All Ages

(Pre-K through 12th Graders)

## What is SYP?

A website that displays a wide range of **exciting opportunities** for **pre-K through 12<sup>th</sup> graders** to improve their knowledge and skills in specific subject areas. Pre-college programs are an excellent way for students to explore majors or careers while being introduced to the college environment.

With **over 200 listings** covering topics in agriculture, art, business, computers, engineering, math, music, science, sports, and writing, **MSU is sure to have a program for every student!**

You can search the SYP website for:

- summer and school year programs
- opportunities to earn college credit
- residential experiences on the MSU campus
- financial assistance
- study abroad possibilities

For more information visit  
**[spartanyouth.msu.edu](http://spartanyouth.msu.edu)**

**MICHIGAN STATE**  
**U N I V E R S I T Y**

Gifted and Talented Education  
University Outreach and Engagement

Kellogg Center  
219 S. Harrison Rd., Rm 8  
East Lansing, MI 48824

For more information on any of our programs, please visit

**GIFTED.MSU.EDU**