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WE PUT THE M IN STEM

2020 Elements of Mathematics, Summer Planning Packet

Welcome to Project MEGSSS' Elements of Mathematics! Students must qualify to enter the program. Qualifying exams are held March 28, April 4 and April 15. We encourage parents to register students for the summer introduction to the Elements program prior to testing. (If a student does not qualify for the Elements program, tuition will be refunded or may be applied to summer classes in MathJam20, which runs concurrently).

The following summer options are offered to qualified Elements students:

- **Session 1:** June 8-19 at St. John Vianney High School, Kirkwood, 1311 S. Kirkwood Road, Kirkwood from 8:30 a.m. to 4 p.m. Half day options are available, from 8:30 a.m. to noon or 12:30 to 4 p.m.
- **Session 2:** July 6-17 at DeSmet Jesuit High School, 233 N. New Ballas Road, Creve Coeur: from 8:30 a.m. to 4 p.m. Half-day options are available, 8:30 a.m. to noon or 12:30 to 4:00 p.m.
- **Logic Bootcamp:** Logic Bootcamp (ages 11-13), offered July 28-31, mornings only, provided minimum enrollment requirements are met. This session includes an intensive introduction to formal logic. Location: BRDG. Students must qualify by testing for the Elements program. This course is available to qualified students who are unable to attend the Elements summer program.

*Please note, **no exceptions will be made to the following policy:** students who complete only the Logic Bootcamp and decide to enroll in our after-school Elements of Mathematics program in the fall will need to first successfully complete an additional online course entitled Operational Systems (available at <http://www.elementsofmathematics.com>; a fee applies). For more details, please contact nomination@megsss.org.*

For Sessions 1 and 2, before care begins at 7:30 a.m., and after care ends at 5:30 p.m. No before or after care will be available for Session 3.

What is the day like?

Elements students typically register for the full-day program that includes Elements material (Operational Systems & Logic) and After Math, a mix of challenging math work, making new friends, and an afternoon of hands on, activity-based enrichment that will connect math ideas with science, literature, and art. Alternatively, for those who prefer a more academic schedule, students may register for Elements material in the afternoon and take morning schedule with students from #MathJam20.

Students will take an Elements exams during the last Thursday of their session (Day 9). Students who do not sit for the exam at that time will receive an incomplete and must arrange completion with the Director.

The last Friday of each session (Day 10) will be reserved for an optional day of fun activities and guest speakers. If your student intends to participate, he/she should plan for a full day of attendance.

Course Descriptions

Elements of Mathematics Sessions (required for those considering after-school or advanced summer courses). This is a half-day course offered both in the mornings and afternoons.

All material covered is part of the Elements of Mathematics curriculum.

Operational Systems, Book 0-1

This book covers operational systems and their properties. It begins with finite modular number systems in traditional arithmetic operations and expands to natural and whole numbers. It also includes some non-numerical systems involving permutations and geometry mappings. Each system is analyzed carefully for the properties: commutative, associative, neutral element (identity element) and invertibility. Equations are solved in every system.

Logic, Book 1, Chapter 1

The propositional calculus is introduced. The language includes propositional variables representing sentences with discernible truth values and connectives representing “not”, “and”, “or” (inclusive), “implies”, and the biconditional. The truth values of formulas built using variables and connectives are discerned through the use of truth tables. Students are introduced to the ideas of contradiction, tautology, and substitution. They also learn to recognize complex instances of simple tautologies as tautologies, without the use of truth tables.

Formal coursework is planned for four days each week, with time reserved on Wednesday of the first week for review and tutoring, followed by supervised games and other special activities.

A half-hour will be allowed at the end of each 3-hour class session to start the evening’s homework. Plan for some homework each evening and on the weekend. There will be a final, graded exam on the second Thursday of the session.

MathJam courses available full-day options are listed below. Full course descriptions can be found in the MathJam19 registration packet, available online late February.

Mornings (register for Intro to Elements in the afternoon):

- Puzzles & Programming (both sessions)
- Math Contest Preparation and Discrete Math (Session 1),
- Geometry and Discrete Math (Session 2)

Afternoon courses (register for Intro to Elements in the morning):

- After Math: A Mash-Up of Science, Art, Literature, & Math, ages 11 - 14

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Registration and Payment

When should I register?

Registration must be completed by May 18, 2020. A \$15 late fee will apply after that date.

We recommend early registration to hold your seat, especially if you prefer the half-day option. Early registration payments will be refunded if a student does not qualify for the Elements program, or they may be applied to #MathJam20 summer classes, held concurrently with the Elements program. Unless you have applied for financial aid, your seat can only be held once full payment is received. It will be refunded if the accommodations offered are insufficient to meet your needs. *For more information on financial aid, see below.*

All other payments are non-refundable unless the course is cancelled, which is rare. Please do not ask us to make an exception.

Payment may be made via PayPal during registration. Late registration fees apply after Monday, May 13. If a session is not large enough to justify a class, we will contact you to reschedule.

Summer 2020 Elements Tuition

Session 1 or 2, Full Day (8:30 AM – 4:00 PM)	\$610
Half Day	\$355
Logic Bootcamp	\$255

Additional Items:

- Late registrations, \$15 (after May 13)
- Before Care (7:30 – 8:30 AM), \$80 for 10 days or \$10 per day
- After Care (4:00 – 5:30 PM), \$140 for 10 days or \$15 per day
- Both Before and After Care, \$200 total for 10 days

Financial Aid Options

We offer two financial aid programs, and we encourage applications before the deadline of April 30, 2020. Decisions will be made prior to May 18. All applicants must have registered for courses, or the application will be denied.

1. Families who are eligible for federal lunch programs are eligible for our educator-directed scholarship that streamlines the application process. In 2020, students in districts where all receive federal lunch programs must also meet an income test and provide income verification. Please inquire at nomination@megsss.org
2. For all others, financial aid applications are accepted online. Submission of the most recent federal tax return is required for this process.

Discounts (choose one; does not apply to financial aid recipients):

Early Registration discount, \$30 on full day registration—before March 31.

2020 Key Dates & Deadlines

Information Contact: nomination@megsss.org

Website: www.MEGSSS.org

Informational Meetings: Online reservations requested for parent informational meetings; students are encouraged to attend too. Last minute meeting cancellations due to weather conditions will be announced on the Project MEGSSS Facebook page and Twitter account by 2:00 pm the day of the event. We will also be available at select summer opportunity fairs; see the list on page two.

- *Tuesday, February 25, 7:00 pm* St. John Vianney High School, 1311 S. Kirkwood Road, Kirkwood
- *Wednesday, February 26, 7:00 pm*, DeSmet Jesuit High School, 233 N. New Ballas, Creve Coeur
- *Monday, March 2, 7:00 pm*, St. Charles County Library Spencer Branch Room 243 in the Community Commons, St. Charles
- *Wednesday, March 18, 7:00 pm*, online via web conference – registration required
- *Saturday, March 28, 9:00 am*, Simon Hall, Room 112 and 113, Olin School of Business, Washington University
- *Saturday, April 4, 9:00 am*, Simon Hall, Room 112 and 113, Olin School of Business, Washington University

Testing Dates & Deadlines: Test fee is \$65 unless otherwise noted. Test results to be sent approximately 14 days after test completion.

- *Saturday, March 28, 8:30 am to 12:15 pm* (test begins at 9:00 am sharp).
Registration deadline is Sun., March 15 (\$15 late fee after this date)
Test will be held at Simon Hall, Room TBD, Olin School of Business, Washington University.
- *Saturday, April 4, 8:30 am to 12:15 pm* (test begins at 9:00 am sharp)
Registration deadline is Sun., March 22 (\$15 late fee after this date)
Test will be held at Simon Hall, Room TBD, Olin School Business, Washington University.
- **Alternate testing date: TBD**
Please note: the fee for this test event is \$80, unless the student is doing so for religious observance reasons, in which case the \$65 fee applies.

Final Deadline for Testing Fee Waiver Applications: Apply online by March 15; late applications will be accepted until testing registration is closed for the year.

*For more information or to register for a program, visit
www.MEGSSS.org/registration*

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Key Dates & Deadlines

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Summer Program

Summer Program Registration & Financial Aid Deadlines (register early; subject to space available)

Summer Registration begins mid-February-students place in Elements or MathJam20, depending on test results.

Apply for Summer Financial Aid: *Apply online by Thursday, April 30, decisions by Monday, May 18.*

Summer Registration Deadline (\$15 late fee applies after this date): *Monday, May 18.*

Registration Options:*

Session 1 Monday-Fridays (St. John Vianney High School), *June 8 through June 19, 8:30 am to 4:00 pm*

Session 2 Monday-Fridays (DeSmet), *July 6 through July 17, 8:30 am to 4:00 pm*

Logic Bootcamp 1** Logic Bootcamp: Tuesday-Friday, *July 28 through July 31, 8:30 am to 11:30 am*

*Before and after-care available for Session 1 & 2 for an extra fee. If these choices do not fit your student's summer schedule, please speak with staff about half-day or other options available.

**Students must complete online Operational Systems course in order to enroll in the Elements after school program

Updated
February 13, 2020