We strongly encourage all of our students in fifth through eighth grades to spend a little time over the summer considering their role in creating a path to success in the next math course. Whether this is done through skills worksheets centered on recommended topics or through practice using the online math sites list below, the purpose is to refresh the understanding of concepts that are important in the next course.

The MICDS math program uses a mastery based approach that requires strong foundational knowledge of certain topics for success at each grade level. The concepts build over time, and it is important for a student to enter a course with a high level of understanding of particular topics. We have listed the most important concepts for success in the first few months of school by grade level below and have included links to online tutorials for these topics. These tutorials provide a general overview of the concept and a few practice problems. They are meant to demonstrate the level of problems that should have already been mastered before entering the next course and to help guide you in your search for additional problems if needed. It is also important to note that the topics listed do not encompass all required material for that grade level. The topics listed should be viewed as critical for success in all subsequent grade levels. For example, an entering 7th grader should be well versed in all topics leading up to 7th grade. If the student feels additional practice on a 6th grade topic would be helpful, he or she should absolutely review this material as well.

If you have any questions about summer options, please contact Amy Scheer, at ascheer@micds.org

5th Grade

- Basic facts (timed); operations include addition, subtraction, multiplication and division
- Long division; a multi-digit number divided by a one-digit number and including problems with zeros in the quotient   (for example, 3450 ÷ 8)
- Basic fractions
- Basic decimals
- Multiplication; a multi-digit number by a two-digit number

Practice sites:

www.coolmath4kids.com
https://www.khanacademy.org/math/cc-fourth-grade-math/cc-4th-fact-mult-topic
https://www.khanacademy.org/math/cc-fourth-grade-math/cc-4th-mult-div-topic
https://www.khanacademy.org/math/cc-fourth-grade-math/cc-4th-fractions-topic
https://www.khanacademy.org/math/cc-fourth-grade-math/cc-4th-place-value-rounding
https://www.khanacademy.org/math/arithmetic/decimals

6th Grade

- All 4 operations with whole positive numbers

https://www.khanacademy.org/math/arithmetic/addition-subtraction

https://www.khanacademy.org/math/arithmetic/multiplication-division

- Add, subtract, and multiply positive fractions

https://www.khanacademy.org/math/arithmetic/fractions

- Add and subtract positive decimals

https://www.khanacademy.org/math/pre-algebra/decimals-pre-alg

- Long division

https://www.khanacademy.org/math/arithmetic/multiplication-division/long_division/v/introduction-to-remainders

https://www.khanacademy.org/math/arithmetic/multiplication-division/long_division/v/long-division-with-remainder-example

https://www.khanacademy.org/math/arithmetic/multiplication-division/long_division/v/dividing-by-a-two-digit-number

- Find factors and multiples

https://www.khanacademy.org/math/cc-fourth-grade-math/cc-4th-fact-mult-topic/cc-4th-factors-multiples/v/finding-factors-of-a-number

- Simplify basic numeric expressions using the order of operations

https://www.khanacademy.org/math/algebra-basics/core-algebra-foundations/algebra-foundations-order-of-operations

7th Grade

- Add, subtract, multiply, and divide whole numbers
- Place value, comparing quantities, placing numbers on a number line

https://www.khanacademy.org/math/cc-fifth-grade-math/cc-5th-place-value-decimals-top
https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-negative-number-topic

- Represent a quantity in fraction, mixed number, decimal, and/or whole number forms
- Add, subtract, multiply, and divide fractions and mixed numbers
- Add, subtract, multiply, and divide decimals

https://www.khanacademy.org/math/pre-algebra/decimals-pre-alg/decimal-to-fraction-pre-alg
https://www.khanacademy.org/math/pre-algebra/fractions-pre-alg
https://www.khanacademy.org/math/pre-algebra/decimals-pre-alg

- Use ratios and rates to solve problems

https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-ratios-prop-topic

- Find area and perimeter of two-dimensional shapes

https://www.khanacademy.org/math/cc-third-grade-math/cc-third-grade-measurement
https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-geometry-topic (not volume)

- Classify and measure angles

https://www.khanacademy.org/math/cc-fourth-grade-math/cc-4th-geometry-topic

8th Grade

- Simplify expressions using order of operations
- Simplify expressions and utilize operations with signed numbers
- Simplify expressions and utilize operations with rational expressions (no variables)
- Simplify expressions using the distributive property
- Evaluate expressions involving substitution of values for variables
- Solve an equation in a single step

https://www.khanacademy.org/math/algebra-basics/core-algebra-foundations/algebra-foundations-order-of-operations

https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers-add-and-subtract/cc-7th-add-and-sub-integers/v/adding-negative-numbers

https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers-multiply-and-divide/cc-7th-mult-div-negatives/v/multiplying-positive-and-negative-numbers

https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-negative-numbers-multiply-and-divide/cc-7th-convert-decimals-fractions/v/examples-of-dividing-negative-fractions

https://www.khanacademy.org/math/pre-algebra/pre-algebra-arith-prop/pre-algebra-ditributive-property/a/distributive-intro