

Questions

Questions for your child's teacher:

- ◆ What do I need to do to help my child with class work, test, homework etc.
- ◆ How will my child be graded/assessed in your class?
- ◆ Are there any resource materials in addition to the textbook that will help me to better assist my child?
- ◆ How can I interpret the assignment to my child or to other students?
- ◆ What clues, and buzz words should I use with my child to enhance their understanding of the subject?
- ◆ When is it enough studying, practicing, etc. at the home setting to not discourage the children?

Activities for Home

What can I do to help my child

- ◆ Access online activities to help your teen practice mathematical problems, visit the Cleveland Public Library.
- ◆ Have your teen compute what percentage their expenses add to the household budget.
- ◆ Encourage your child to participate in the CMSD OGT math sessions as they prepare for the OGT exam in March each year.
- ◆ Investigate the post secondary option program for your high school student. Visit with your child's school counselor for more information.

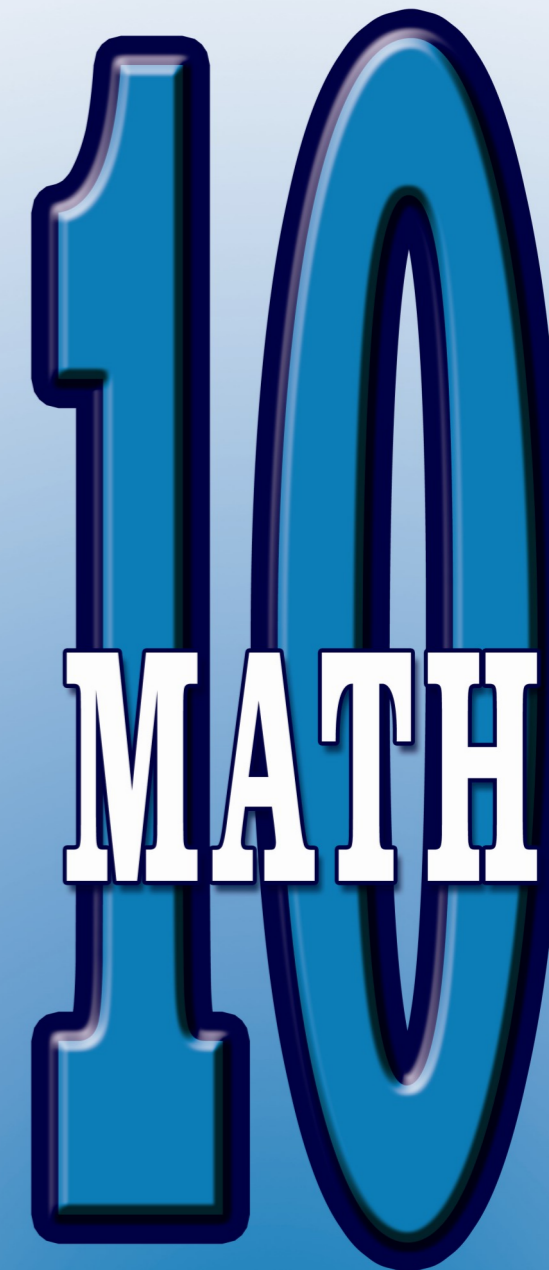
A Message from the CMSD

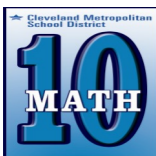
~School Parent Organization~

Dear parents,

This information was created by CMSD families for CMSD families. It is intended to create home and school partnerships to enhance the academic skills of all 10th grade students.

NOTES:





What should my tenth grader learn about Math?

Number, Number Sense and Operations

- ◆ Use scientific notation to express large numbers and numbers less than one.
- ◆ Identify subsets of the real number system.
- ◆ Apply properties of operations and the real number system, and justify when they hold for a set of numbers.
- ◆ Connect physical, verbal and symbolic representations of integers, rational numbers and irrational numbers.
- ◆ Compare, order and determine equivalent forms of real numbers.
- ◆ Explain the effects of operations on the magnitude of quantities.
- ◆ Estimate, compute and solve problems involving real numbers, including ratio, proportion and percent, and explain solutions.
- ◆ Find the square root of perfect squares, and approximate the square root of non-perfect squares.
- ◆ Estimate, compute and solve problems involving scientific notation, square roots and numbers with integer exponents.

Measurement

- ◆ Solve increasingly complex non-routine measurement problems and check for reasonableness of results.
- ◆ Use formulas to find surface area and volume for specified three-dimensional objects accurate to a specified level of precision.
- ◆ Apply indirect measurement techniques, tools and formulas, as appropriate, to find perimeter, circumference and area of circles, triangles, quadrilaterals and composite shapes, and to find volume of prisms, cylinders, and pyramids.

- ◆ Use proportional reasoning and apply indirect measurement techniques, including right triangle trigonometry and properties of similar triangles, to solve problems involving measurements and rates.
- ◆ Estimate and compute various attributes, including length, angle measure, area, surface area and volume, to a specified level of precision.
- ◆ Write and solve real-world, multi-step problems involving money, elapsed time and temperature, and verify reasonableness of solutions.

Geometry and Spatial Sense

- ◆ Formally define geometric figures.
- ◆ Describe and apply the properties of similar and congruent figures; and justify conjectures involving similarity and congruence.
- ◆ Recognize and apply angle relationships in situations involving intersecting lines, perpendicular lines and parallel lines.
- ◆ Use coordinate geometry to represent and examine the properties of geometric figures.
- ◆ Draw and construct representations of two and three-dimensional geometric objects using a variety of tools, such as straightedge, compass and technology.
- ◆ Represent and model transformations in a coordinate plane and describe the results.
- ◆ Prove or disprove conjectures and solve problems involving two and three-dimensional objects represented within a coordinate system.
- ◆ Establish the validity of conjectures about geometric objects, their properties and relationships by counter-example, inductive and deductive reasoning, and critiquing arguments made by others.
- ◆ Use right triangle trigonometric relationships to determine lengths and angle measures.

Patterns, Functions and Algebra

- ◆ Generalize and explain patterns and sequences in order to find the next term and the n th term.
- ◆ Identify and classify functions as linear or nonlinear, and contrast their properties using tables, graphs or equations.
- ◆ Translate information from one representation (words, table, graph or equation) to another representation of a relation or function.
- ◆ Use algebraic representations, such as tables, graphs, expressions, functions and inequalities, to model and solve problem situations.
- ◆ Analyze and compare functions and their graphs using attributes, such as rates of change, intercepts and zeros.
- ◆ Solve and graph linear equations and inequalities.
- ◆ Solve quadratic equations with real roots by graphing, formula and factoring.
- ◆ Solve systems of linear equations involving two variables graphically and symbolically.
- ◆ Model and solve problem situations involving direct and inverse variation.
- ◆ Describe and interpret rates of change from graphical and numerical data.

Data Analysis and Probability

- ◆ Create, interpret and use graphical displays and statistical measures to describe data; e.g., box-and-whisker plots, histograms, scatter plots, measures of center and variability.
- ◆ Evaluate different graphical representations of the same data to determine which is the most appropriate representation for an identified purpose.
- ◆ Compare the characteristics of the mean, median and mode for a given set of data, and explain which measure of center best represents the data.
- ◆ Find, use and interpret measures of center and spread, such as mean and quartiles, and use those measures to compare and draw conclusions about sets of data.
- ◆ Evaluate the validity of claims and predictions that are based on data by examining the appropriateness of the data collection and analysis.

- ◆ Construct convincing arguments based on analysis of data and interpretation of graphs.
- ◆ Describe sampling methods and analyze the effects of method chosen on how well the resulting sample represents the population.
- ◆ Use counting techniques, such as permutations and combinations, to determine the total number of options and possible outcomes.
- ◆ Design an experiment to test a theoretical probability, and record and explain results.
- ◆ Compute probabilities of compound events, independent events, and simple dependent events.
- ◆ Make predictions based on theoretical probabilities and experimental results.

Mathematical Processes

- ◆ Formulate a problem or mathematical model in response to a specific need or situation, determine information required to solve the problem; choose method for obtaining this information, and set limits for acceptable solution.
- ◆ Apply mathematical knowledge and skills routinely in other content areas and practical situations.
- ◆ Recognize and use connections between equivalent representations and related procedures for a mathematical concept.
- ◆ Apply reasoning processes and skills to construct logical verifications or counter-examples to test conjectures and to justify and defend algorithms and solutions.
- ◆ Use a variety of mathematical representations flexibly and appropriately to organize, record and communicate mathematical ideas.
- ◆ Use precise mathematical language and notations to represent problem situations and mathematical ideas.
- ◆ Write clearly and coherently about mathematical thinking and ideas.
- ◆ Locate and interpret mathematical information accurately, and communicate ideas, processes and solutions in a complete and easily understood manner.