

# Questions

## Questions for your child's teacher:

- ◆ How are students grouped or put together so they reach mastery?
- ◆ What is your grading scale?
- ◆ How do you challenge students who are advanced?
- ◆ How do you relate math to real life events and activities?
- ◆ Are students with a disability graded on the same grading scale?
- ◆ Do you allow for extra credit?
- ◆ What resources are available for me to utilize at home?
- ◆ Do you have after school time to meet with students who need extra help?

# Activities for Home

## What can I do to help my child

- ◆ Cook and convert recipes at home.
- ◆ Calculate gasoline mileage or bus fare.
- ◆ Compute sport percentages
- ◆ Help your child solve math problems by determining information required to solve; select math operations for solving; and set limits for realistic solutions.
- ◆ Compute math problems using calculators and brain power to compare answers.
- ◆ Contact the Cleveland Public Library's Homework Help Line to obtain additional resources to support your child's learning.
- ◆ Schedule a meeting with your child's teacher to learn about the math standards.
- ◆ Check your child's homework assignment of completions vs. correct answers.

## A Message from the CMSD

### ~School Parent Organization~

Dear Families,

This information was created by CMSD families for CMSD families. It is intended to encourage and develop a relationship among parent, child and teacher.

NOTES:

★ Cleveland Metropolitan  
School District



MATH



# What should my eighth grader learn about Math?

## Number, Number Sense and Operations

- ◆ Use scientific notation to express large numbers and numbers less than one.
- ◆ Identify groups of numbers that other numbers fit into.
- ◆ Apply rules that must be followed when working with different families of numbers to perform the four operations: addition, subtraction, multiplication, and division. Use greater than (>), less than (<), or equal to (=) to put in order by smallest to largest.
- ◆ Addition and multiplication gets bigger subtraction and division create smaller numbers.
- ◆ Explain, by steps or in writing, how to estimate or solve a problem.
- ◆ The number you multiply limits itself to get a perfect square. On the decimal number you multiply by itself to get a non perfect square.
- ◆ Explain, by steps or in writing, how to estimate or solve a problem using different kinds of numbers.

## Measurement

- ◆ Solve increasingly complex non routine measurement problems and check for reasonableness of results.
- ◆ Use formulas to find surface area and volume for specific three dimensional objects accurate to a specific level of precision.
- ◆ Use simpler methods to solve more complicated problems.
- ◆ Using similar shapes find the size of objects that cannot be measured directly.
- ◆ Approximate the length, degree measure, or area to the nearest whole unit.
- ◆ Explain the steps of how to solve problems involving numbers, money, time, and temperature.

## Geometry and Spatial Sense

- ◆ Explain the different characteristics of shapes.
- ◆ Describe and show that similar is the same shape, that congruent is the same slope and same size. Use examples of figures to explain these concepts.
- ◆ Defining the relationship agrees with when lines intersect.
- ◆ Plotting slopes or a graph to find the characteristics of the slopes.
- ◆ Using rulers, compasses, or computers to show models of flat shapes and slopes that can be seen from different points of view.
- ◆ Moving shapes on a grid and being able to being able to predict the new location by ordered pairs.
- ◆ Using a grid to infer characteristics of two and three dimensional objects.
- ◆ To have evidence to prove the correctness of an opinion which was formed.
- ◆ Using Pythagorean Theorem,  $A^2+B^2=C^2$

## 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

- ◆ Make and be able to read and use the different types of graphs and statistical measure to describe data (e.g. Give example...)
- ◆ Determine which graph is a better fit to use with the data the problem presents you with.
- ◆ Be able to define mean median, mode and show your understanding by selecting which of the three is a better measurement when given a problem.
- ◆ Identify and use the central measures of center and spread (e.g. mean, quartile). Be able to use these to help you make conclusions about data.
- ◆ Test to see if claims and predictions of a math problem give the desired result by checking for correct data collection and analysis.
- ◆ Make a convincing argument based on analysis of data and ready graphs.
- ◆ Describe sampling methods (how objects are selected for a study) know the differences and know its appropriate use.
- ◆ Use counting technique Permutation- count number by the ways things can be arranged in order and Combination- how many things are arranged not concerned with order.
- ◆ Create way to test your theory and probability (chance of flipping a coin and getting heads or tails) and take notes and effectively communicate results.

- ◆ Find the probability of two or more events either independently- each other, or simple dependent events.
- ◆ Use theoretical probability and experimental probability to make informed statement. Example: He always scores a B on his test. On his next test, he'll probably score a B.

## Mathematical Processes

- ◆ Use what information is given and use it to make a main equation using manipulative or paper and pencil.
- ◆ Use math in other subjects and in everyday life.
- ◆ Point out and use connections between equal representations and relate steps for a math concept (e.g. zero of a function).
- ◆ Use reasoning and skills to come up with a valid reason a problem or math hypothesis is correct or show how it cannot ever be correct: when doing math solutions or algorithms. Example:  $A^2 + B^2 = C^2$ , and test logical opinions of a math problem.
- ◆ Use math language, symbols, and tools correctly when...
  - You organize e.g. use a table to list numbers.
  - To record and abbreviate using scientific notation.
  - To communicate- use math vocabulary when speaking and writing using correct operation sign.
- ◆ Use math language proficiently along with symbols to show ideas and when working out a problem.
- ◆ Explain math so that a younger student can learn and understand it.
- ◆ Find math information correctly and speak and write ideas: how you do math answers in a complete and easy to understand manner.