Math at home.
How to Support Children's mathematical thinking?

Use these <u>Questioning Strategies</u> and "I can" statements.
They reflect the new Common Core Standards for Mathematics.

Find math games:

Monterey Bay Area Math Projec at UCSC

http://mbamp.ucsc.edu/

Introduction

PARENT INVOLVEMENT AND STUDENT ACHIEVEMENT

The research is overwhelmingly clear: When parents play a positive role in their children's education, children do better in school.

Parents must assure their children that mistakes are perfect opportunities for growth. What counts is that parents help their children gain the confidence that they can learn.

Major benefits of parent involvement include increased mathematical understanding, positive attitudes and behavior, more successful academic programs and more effective schools.

HELPING AT HOME

Parents ask how they can help their children with mathematics at home.

You can help by asking questions that guide your children without telling them what to do. Good questions will help build your children's confidence and encourage mathematical thinking and communication.

Here are some you might try; notice that none of them can be answered with a simple "yes" or "no."

Getting Started

What do you know?
What do you need to find out?
How might you begin?   What do you think you should do first?

While Working

How can you organize your information?
Can you make a drawing (model) to explain your thinking?
What would happen if<<?
What do you need to do next?
Do you see any patterns?....Relationships?
Can you predict what the answer might be?
Does this remind you of any other problem you have done before?

Reflecting about the Solution

Is your solution (conclusion) reasonable?
How did you arrive at your answer?
Can you convince me your solution makes sense?
What did you try that didn't work?

Responding

Your response is as important as you initial questions. Continue discussing even after your children have the correct answer. This will give your children a chance to clarify their thinking:
How do you know the answer makes sense?
Do you know another way to solve it?

HOW PARENTS CAN HELP

Listed below are some activities that parents can do over and over again with children of all ages.

Children learn what they live…

Let your children in on your thinking. It will help your children explain their own thinking as they see and hear you do math when it comes up during the day. *(Example: count out loud when digging in a pocket for change at the cash register.)*

Look for mathematical experiences in your children's real world (geometry, measurement, number, patterns, statistics, probability, algebra).

Share an enjoyment of math. Do not pass on any negative attitude to your children. Avoid talking about math in a negative way or letting them know if you did poorly in math. It simply won't help**.** Instead, **show an attitude of curiosity toward the math your child is learning.**

Involve your child in doing math. If you enjoy the closeness of cuddling up and reading with your children, imagine the same sort of closeness with doing math.

Play strategy games.

Be patient with your children. Mathematical understanding develops over time. Watch for and enjoy your children's progress.

Try to use these questions to help students "think" about their math.

1. How would you describe the problem in your own words? What Information do you have?
2. What do you need to find out?
3. Can you explain what you have done so far? What else is there to do?
4. Why is that true?
5. How did you reach that conclusion? Does that make sense?
6. How would you prove that?
7. Can you convince the rest of us that your answer makes sense? Do you see a pattern? Can you explain the pattern?
8. Can you guess and check?
9. What would happen if... What if not?
10.   What tools will help you? ...a hundreds chart? ...blocks?
11.   Would it help to create a diagram? Make a table? Draw a picture?
12.   Tell me how you got your answer?

Kindergarten

What I Need to Know by the End of Kindergarten

1. I can count out loud to 100, by 1's and 10's
2. I can continue counting from any number.
3. I can count up to 30 objects.
4. I can match a number symbol to the number
   i. of objects (**X X** = 2).
5. I can look at groups of objects and tell: Which has more?
   i. Which has less? Are they equal?
6. I can write numbers from 0 to 30.
7. I can identify numbers from 0 to 30 even if they are out of order.
8. I can add numbers in a story problem, with objects, to 12.
9. I can subtract numbers in a story problem, with objects, from 12.
10. I can name squares, circles, rectangles, triangles, cubes, spheres, and cones.
11. I can make larger shapes using smaller shapes.
12. I can sort and explain how objects are similar or different.

How Parents Can Help

I can practice counting out loud with my child.

I can say a number and my child can keep counting.

I can sing counting songs and chant number rhymes to help my child learn counting.

I can practice counting objects (such as clothing, foods, buttons, mail) with my child.

I can compare the sizes of objects with my child.

I can play dice or domino games with my child.

I can cut up old calendars or lunch menus and let my child arrange the numbers 1 to 30 in order.

I can talk about page numbers in books with my child.

I can play math games such as "Guess My Number" with my child.

I can talk about our day with my child and ask what we will do first, second, third, fourth, and last.

I can make up stories with my child (example: there are 4 forks on the table. One falls on the floor. How many forks are left on the table?)

I can talk about all the numbers and math in my daily routine with my child.

13. I can compare objects and tell: Which holds more? Which is heavier or lighter? Which is shorter or taller?
14. I can create or extend a simple pattern.
15. I can solve a problem and explain how I know it is correct.

I can go on a "shape hunt" in the house or neighborhood with my child.

I can draw basic shapes for my child to cut out and put together into different shapes.

I can play "I Spy…" with my child.

I can sort other familiar household items with my child.

I can sort all the shoes in the closet by type of closure (buckle, Velcro, tie, slip-on) or by color.

I can cook with my child and discuss measurement.

I can help my child notice where the sun and moo is when we talk about time of day.

I can use mathematical vocabulary with my child.

I can point to days of the week on my calendar.

I can clap or tap patterns together with my child.

I can play board games that involve counting spaces or identifying shapes and patterns (such as "Chutes and Ladders") with my child.

I can think out loud with my child as I do things during my day to show my thinking process.

I can give my child a pile of objects to sort.

I can tell my child I have confidence in his or her ability to accomplish math skills by saying "I know you can do this…"

First Grade

What I Need to Know by the End of First Grade

1. I can count, read and write my numbers 1 to 120, starting with any number less than 120..
2. I know how to use =, < and >.
3. I can read and write numbers between 1 and 120.
4. I can match a number symbol to the number of objects (🍎 🍎 = 2).
5. I can compare and order 2 digit numbers to 100.
6. I can add numbers to 20.
7. I can subtract numbers from 20.
8. I can tell you one more than or one less than any number.
9. I can tell you 10 more than or 10 less than any number.
10. I can count by 10's to 100.
11. I can add three numbers together.
12. I can add and subtract numbers in my head to 20.
13. I can use number sentences to match a problem.
14. I know how to use +, -, and =.
15. I can compare the lengths of different objects.
16. I can tell time by the hour and half hour.

How Parents Can Help

I practice counting forward and backward with my child to 120.

I can keep a monthly calendar and discuss the day, week, month, yesterday, today and tomorrow with my child.

I can show my child how I keep track of family events on a calendar. I ask my child questions such as "How many days until…?"

I can roll two or three dice and add the numbers together with my child.

I can roll two dice and subtract the numbers with my child.

I can gather ten different shoes and put them together in order from smallest to largest with my child.

I can measure shoes and other objects to the nearest inch with my child.

I can look for geometric shapes in the world with my child.

17. I can name squares, circles, rectangles, triangles.
18. I can create and extend shape or number patterns.
19. I can organize information on a graph.
20. I can solve a problem and explain how I know it is correct.
21. I can use the words *halves, fourths, and quarters* and the phrases *half of, fourth of,* and *quarter of.*

I can demonstrate probability by placing 5 white socks and 1 black sock in a bag. My child will predict and then record what colors are drawn in 10 tries (replace sock after each draw).

I can talk about our day with my child and ask what we will do first, second, third, fourth, and last.

I can use mathematical vocabulary with my child.

I can think out loud with my child as I do things during my day to show my thinking process and encourage my child to do the same.

I can tell my child I have confidence in his or her ability to accomplish math skills by saying, "I know you can do this.

Second Grade

What I Need to Know by the End of Second Grade

1. I can add and subtract to solve word problems.
2. I can fluently add and subtract within 20 in my head.
3. I can recall basic math facts from memory.
4. I can select appropriate tools for measuring length.
5. I can measure the length of an object.
6. I can measure the length of objects using different length units.
7. I can describe the relationship of different length units.
8. I can estimate lengths using inches and feet.
9. I can estimate lengths using centimeters and meters.
10. I can find the difference in length of two objects.
11. I can add to solve word problems that involve length.
12. I can subtract to solve word problems that involve length.
13. I can add using a number line.
14. I can subtract using a number line.

How Parents Can Help

I can play "Mental Math Strings" with my child. (example: Start with 2. Add 5. Subtract 3. Add 4.)

I can play games to help my child memorize addition and subtraction facts. (example: dice games, card games, dominoes, jacks, etc.)

I can practice math facts with my child in short bursts (no longer than 5 – 10 minutes).

I can collect and record data with my child. (example: plant seeds and record growth of plants).

I can weigh fruits and vegetables (and compare the weights) in the grocery store with my child.

I can have my child help measure amounts of food when we are cooking.

I can I can talk about our day with my child and ask what we will do first, second, third, fourth, and last.

I can look for geometric shapes in buildings, magazines, and stores with my child.

I can use geometric vocabulary to tell how shapes are alike and different with my child.

15. I can tell time to the nearest five minutes.
16. I can solve word problems involving money.
17. I can use the $ and ¢ symbols.
18. I can collect data by measuring lengths.
19. I can make a line plot to show data.
20. I can draw a picture graph.
21. I can draw a bar graph.
22. I can solve problems using a bar graph.
23. I can identify shapes based on their attributes.
24. I can draw shapes based on their attributes.
25. I can partition a rectangle into rows and columns of same-size squares and count the total number.
26. I can divide circles and rectangles into equal parts.
27. I can describe equal parts as part of a whole
28. I can recognize equal shares of identical shapes do not have to be the same shape.

I can sort and classify stuffed animals, books, money and household items with my child.

I can ask my child to describe the sorting rule (size, shape, function, etc.) we used to sort items.

I can talk about fractions by cutting up food into equal units.

I can talk with my child about the events and situations as being likely or unlikely to occur.

I can provide an analog, as well as a digital clock, and talk about time with my child.

I can measure objects in the house with my child.

I can talk about our day with my child and ask what we will do first, second, third, fourth, and last.

I can play "License Plate Math" with my child.

I can use mathematical vocabulary with my child.

I can think out loud with my child as I do things during my day to show my thinking process and encourage my child to do the same.

I can tell my child I have confidence in his or her ability to accomplish math skills by saying,
"I know you can do this…

Third Grade

What I Need to Know by the End of Third Grade

1. I can multiply using single digit numbers
2. I can divide two and three digit numbers by a single divisor (number)
3. Solve word problems using four operations (+, -, x and ÷)
4. I can find patterns with numbers
5. I can tell the difference between ones place, tens place, hundreds place and thousands place and use this information to help me round to nearest 10 or 100.
6. I can understand that a fraction is a part of a whole
7. I can compare fractions on a number line
8. I can identify, create and compare equivalent fractions
9. I can tell time on a clock to the nearest minute
10. I can know ways to measure liquids
11. I can draw a picture graph and a bar graph to represent data
12. I can find the Area and Perimeter of various polygons
13. I can name different kinds of shapes and describe what's the same and what's different

How Parents Can Help

1. I can practice mental math and math facts with my child (without paper, pencil or calculator) Example: If there were three nests and three eggs in each nest, how many eggs? There are twenty kids. There are 60 candies. How many candies would each kid get?
2. I can create word problems for kids to solve using vocabulary like more, less, fewer, How many more __ than __? How many less __ than __?
3. I can skip count with my kids to reinforce number patterns
4. We can estimate prices at the store by rounding up to the nearest dime or nearest dollar
5. I can practice fractions with food
6. I can ask my child what time it is
7. Have child help cook by adding accurate measure of liquids

Third Grade Math
Important Mathematics Vocabulary

Multiply, multiples, base 10

Data

Patterns

Divide, divisor, equal groups

Volume

Numerator

Denominator

Triangle (scalene, isosceles, equilateral)

Quadrilateral (rhombus, square, parallelogram, rectangle)

Angle (acute, obtuse, right)

Sides

Adjacent

Sum, total, all together

Difference, less than

Greater than

Equal to

Fourth Grade

What I Need to Know by the End of Fourth Grade

1. I can read, write, estimate, and round whole numbers up to one million, 1,000,000.
2. I can multiply using double digit multipliers.
3. I can divide numbers and use single digit divisors in long division problems.
4. I can add and subtract whole numbers up to one million, 1,000,000.
5. I can factor all the numbers from 1 to 100.
6. I can find all the prime numbers from 1 to 100.
7. I can read write, estimate, and round whole numbers up to the hundredths place – 0.01
8. I can order and compare decimal numbers.
9. I can place decimal numbers on a number line.
10. I can add, subtract, decimal numbers.
11. I can read and write fractions.
12. I can understand that fractions are numbers seen as part of a whole or part of a set.
13. I can order and compare fractions.
14. I can place fractions on a number line.
15. I can compare fractions and decimals using a money system.

How Parents Can Help

I can provide opportunities for my child to manage money (example: budget an allowance, discuss use of checkbooks, ATM recording).

I can provide opportunities for my child to use measurements (carpentry, sewing, exact time, cooking).

I can grocery shop with my child and estimate the total cost of all groceries prior to checkout.

I can ask my child mathematical questions and look for reasonable answers (examples: How many miles is it from our house to the mall? How long will it take us to travel from our house to the grocery store?).

I can practice mental mathematics and mathematical facts (without paper, pencil, calculators or materials) with my child. Example: How many eggs are in 3-dozen?

I can find the perimeter and area of the outside of my house using appropriate units of measure with my child.

16. I can see a relationship between fractions, decimals, and percents (example ½ = .50 = 50%).
17. I can recognize that rectangles with the same area can have a different perimeter.
18. I can use formulas to determine area and perimeter.
19. I know the different types of angles.
20. I know the definition of different quadrilaterals.
21. I can apply the order of operations to evaluate numerical expressions.
22. I can decide when and how to break a problem into smaller parts.
23. I can use estimation to prove if an answer is reasonable.
24. I can use strategies from simple problems to help solve more difficult problems.
25. I can explain my math thinking in different ways (numbers, symbols, graphs, etc.).
26. I can calculate carefully and check my answers.
27. I can recognize a line of symmetry
28. I can draw points, lines, line segments, rays, angles, perpendicular lines, and parallel lines.
29. I can classify triangles.

I can estimate with my child the amount of time spent on a family event daily, weekly and monthly (watching TV, eating dinner, sleeping). We can then record the actual amount of time and compare the results.

I can read and interpret graphs in the newspaper with my child.

I can encourage my child to play games involving mathematics.

I can provide an analog, as well as a digital clock, and talk about time lapsed with my child.

I can use mathematical vocabulary in discussions with my child.

I can think out loud with my child as I do things during my day to show my thinking process and encourage my child to do the same.

I can tell my child I have confidence in his or her ability to accomplish math skills by saying, "I know you can do this…

Fifth Grade

What I Need to Know by the End of Fifth Grade

1. I can interpret percents as part of a hundred (using fractions and decimals).
2. I can visualize, describe and represent geometric solids
3. I can determine prime factors for numbers through 50.
4. I can read a number line.
5. I can add, subtract, multiply and divide with decimals.
6. I can find the sum of like and unlike fractions and mixed numbers.
7. I can find the difference of like and unlike fractions and mixed numbers.
8. I can substitute given numbers for variables (letters or symbols).
9. I can identify and graph ordered pairs of numbers in quadrants.
10. I can understand place value and round to any place.
11. I understand the concept of volume and use appropriate units.

How Parents Can Help

I can budget money for allowance, clothing and entertainment with my child.

I can find examples of fractions, decimals, and percents in everyday life and explain to my child what they mean (such as buying gas, newspaper ads, shopping, sports).

I can draw or build a model of one room in my home with my child. We can plan a room addition and be very exact with out measurements to include windows, doors, carpet, etc.

I can build a structure with 4 to 6 blocks with my child. We can draw the top, side and front views and then find out if someone else in the family can rebuild the structure from the drawings.

I can play mathematical board and computer games with my child.

I can create estimation problems for every day events to ask my child.

I can practice mental math and math facts with my child

12. I can find and use the formula for the area of a triangle and parallelogram as compared to a rectangle.
13. I can compute the surface area of rectangular boxes and cubes.
14. I can measure, identify, and draw angles, perpendicular/parallel lines, and triangles.
15. I know that the sum of angles of a triangle is 180°and the sum of quadrilateral angles is 360°.
16. I can identify ordered pairs of data from a graph and interpret the meaning of the data.
17. I know how to write ordered pairs correctly using four quadrants.
18. I can apply the order of operations to evaluate numerical expressions.
19. I can decide when and how to break a problem into smaller parts.
20. I can use estimation to prove if an answer is reasonable.
21. I can use strategies from simple problems to help solve more difficult problems.
22. I can use a variety of methods such as words, numbers, symbols, charts, graphs tables, diagrams, and models to explain my mathematical thinking.
23. I can calculate carefully and check my answers.

I can use the newspaper to gather data for decisions (example: compare car loan rates).

I can chart a daily event for two weeks (such as the length of time it takes the family to eat dinner) and determine the family's averages. We can calculate the mean, median, and mode and discuss the differences.

I can look for examples of tessellations, regular and irregular three-dimensional shapes in the environment.

I can do "Today's Date" Activities with my child.

I can use mathematical vocabulary in discussions with my child.

I can think out loud with my child as I do things during my day to show my thinking process and encourage my child to do the same.

I can tell my child I have confidence in his or her ability to accomplish math skills by saying, "I know you can do this…"

Sixth Grade

What I Need to Know by the End of Sixth Grade

1. I can compare and order positive and negative fractions, decimals, and mixed numbers and put them on a number line.
2. I can interpret and use ratios in different contexts to show relative sizes, using appropriate notations.
3. I can use proportions to solve problems.
4. I can use cross-multiplication as a method for solving problems.
5. I can calculate given percentages of quantities and solve real-life problems.
6. I can solve addition, subtraction, multiplication and division problems using decimals.
7. I can solve addition, subtraction, multiplication and division problems using positive and negative numbers and combining operations.
8. I can determine the least common multiple and greatest common divisor of whole numbers.
9. I can write and solve one-step linear equations.
10. I can solve problems involving rates and proportions.
11. I can solve division problems using fractions and multi-digits numbers.
12. I can recognize statistical questions, analyze a set of data, and give quantitative measures of center and variability

How Parents Can Help

I can budget money for allowance, clothing and entertainment with my child.

I can find examples of fractions, decimals, and percents in everyday life and explain to my child what they mean (such as buying gas, newspaper ads, shopping, sports, etc.).

I can draw or build a model of one room in my home with my child. We can plan a room addition and be very exact with out measurements to include windows, doors, carpet, etc.

I can build a structure with 4 to 6 blocks with my child. We can draw the top, side and front views and then find out if someone else in the family can rebuild the structure from the drawings.

I can play mathematical board and computer games with my child.

I can create estimation problems for every day events to ask my child.

I can practice mental math and math facts with my child.

13. I can use appropriate mathematical notation and vocabulary.
14. I can use strategies from simple problems to help solve more difficult problems.
15. I can use a variety of methods such as words, numbers, symbols, charts, graphs tables, diagrams, and models to explain my mathematical thinking.
16. I can calculate carefully and check my answers.
17. I can use variables to write expressions and solve mathematical expressions
18. I can apply the properties of operations to create equivalent expressions
19. I can find the area of different shapes by decomposing them into other shapes
20. I can find the volume and surface area of rectangular prisms and other shapes
21. I can plot coordinates on a coordinate grid (x/y coordinate graph)

I can use the newspaper with my child to gather data for decisions (example: compare car loan rates or house prices).

I can chart a daily event for two weeks (such as the length of time it takes the family to eat dinner) and determine the family's averages.

We can calculate the mean, median, and mode and discuss the differences.

I can look for examples of tessellations, regular and irregular three-dimensional shapes in the environment.

I can do "Sports Statistics" activities with my child.

I can use mathematical vocabulary in discussions with my child.

I can think out loud with my child as I do things during my day to show my thinking process and encourage my child to do the same.

I can tell my child I have confidence in his or her ability to accomplish math skills by saying, "I know you can do this…"

Fourth, Fifth, & Sixth Grade
Important Mathematics Vocabulary

Acute - an angle less than 90°

Addend - one of the numbers being added in an addition problem

Addition - combining quantities

Algebra - a strand of mathematics in which variables are used to express rules about numbers and relationships

Algorithm - a step-by-step procedure for math operations

Altitude - the height of a shape

And - 1) combine, 2) shared attributes, 3) represents decimal point when a number is in words

Angle - two line segments that meet at a point

Apparent Outlier - a piece of data that is way out at the end of the range

Area - the size of a two-dimensional figure in square units

Array - a rectangular arrangement of objects with equal amounts in each row

Associative Property - the sum or product of a set of numbers is the same, no matter how the numbers are grouped

Attribute - a characteristic of a shape or set of data

Average - a number that best describes a set of data

Axis - one of the reference lines on a coordinate graph

Balance - 1) a scale uses to figure out approximate weight, or 2) to be equal or to make equal

Bar Graph - a way of organizing data in horizontal or vertical bars

Base - the face on which a three-dimensional object sits

Beneath - in a lower place

Between - in a position that separates two other things

Bi - prefix meaning two

Binary - a number system which used only the digits of 0 and 1

Bisect - to divide into two equal parts

Bisymmetrical - a line that divides a two-dimensional shape in two congruent parts that are mirror images of each other

Borrowing - see subtraction

Calculate - to perform a mathematical operation (+, -, x, divide sign)

Calendar - a tool to keep track of the date

Capacity - how much an object can hold

Cartesian plane - coordinate grid

Centimeter - a metric measure which takes 10 millimeters to make

Center - middle point

Century - 100 years

Chord - a line segment which joins two points on a circle

Circle - a perfectly round shape that has all points equally as far from the center

Circumference - the perimeter of a circle

Clockwise - turning in the direction a clock turns - to the right

Coin - metal money

Column - a vertical list

Commutative Property - the sum or product stays the same when the order of addends/factors changes

Composite Number - a number that has more than two factors

Compute - to figure out an answer

Cone - a three-dimensional shape with a circle base and one vertex

Congruent - having exactly the same shape and size

Consecutive - in order

Connect - to join together

Coordinates - an ordered pair of numbers that gives the location of a point on a coordinate grid

Corner - where two sides or two lines come together (vertex)

Count - to say numbers one by one in order

Counterclockwise - turning in the opposite direction a clock turns - to the left

Cube - a three-dimensional shape with six square faces

Curve - a line that is not straight, but does not have a corner (vertex)

Cylinder - a three-dimensional shape with parallel circular bases

Data - information

Decagon - ten-sided polygon

Decimal - a fractional number less than one whole written with a decimal point

Decimeter - one-tenth of a meter, equal to 10 centimeters

Denominator - the bottom number in a fraction which tells the number of pieces making up a whole

Diagonal - a line segment that connects one vertex to another on a polygon, but is not on the perimeter of the polygon

Diameter - a line segment that goes through the center of a circle

Difference - the amount that remains when one quantity is subtracted from another

Digit - any one of the symbols used in making numbers
(0, 1, 2, 3, 4, 5, 6, 7, 8, 9)

Digital Root - adding digits in a number until only one digit remains

Dimension - the number of measures needed to describe a geometric figure

Distance - a measure of length giving how far things are apart

Distributive Property - when one factor is written as a sum, multiplying each addend before adding produces the same product

Division - the operation which makes equal groups

Divisor - the amount by which another quantity is to be divided

Dodecagon - twelve-sided polygon

Double - twice as much

Edge - a line that connects two faces on a three-dimensional shape

Each - every one of a group

Endpoint - the end of a line segment

Equal - having the same value as

Equation - a math sentence showing two parts as equal

Equilateral Triangle - a triangle with all sides having the same length

Equivalent - having the same value

Estimate - an approximate answer

Even - a number that is a multiple of 2. It has a 0, 2, 4, 6, or 8 in the one's place

Expanded Form - a number that is stretched out to show all the place value parts

Exponent - a number that shows how many times a number is to be multiplied by itself

Face - a side on a three-dimensional shape

Fact Families - a group of addition/subtraction or multiplication/division facts that use the same set of numbers in various combinations

Factor - a number that is multiplied by another number

Fewer - less than

Flip - reflection rotation

Foot - 12 inches in standard measurement

Formula - an equation or rule that shows a relationship between two or more numbers

Fraction - a number showing part of a whole

Frequency - how often something happens in a set of data or within a certain time

Function - gives one output value for each input value

Gallon - a standard measure of liquid equal to 128 ounces or 4 quarts

Geometry - a strand of mathematics dealing with figures and their parts

Googal - a number which has a 1 followed by 100 zeros

Gram - a metric measure of weight/mass smaller in weight than an ounce

Graph - a visual display of data

Greater Than - more than

Grid - a set of horizontal and vertical lines which form squares

Growth Pattern - a type of pattern made by following a certain rule (formula)

Half - one of two equal parts

Height - the distance from the base to the top of something

Hemi - half
Hemisphere - half of the earth
Heptagon - seven-sided polygon
Hexagon - six-sided polygon
Horizontal - a line parallel to the horizon
Hour - a measure of time equaling 60 minutes
Hypotenuse - the longest side of a right triangle which is opposite the right angle

Imperial Measure - standard form of measurement including inches, pounds, etc.
Improper Fraction - a fraction greater than one whole that is not written as a mixed number
Inch - a standard measure of length, one-twelfth of a foot
Infinity - never ending
Integer - whole numbers and their negative partners (1 and -1)
Intersection - the elements that belong to both sets in overlapping sets
Isosceles Triangle - a triangle with two sides that are the same length

Junction - any place where two or more things join to meet

Kilo - one thousand
Kilogram - a metric measure of weight/mass equal to 1,000 grams (just over 2 pounds)
Kilometer - a metric measure of length equal to 1,000 meters (over 3200 feet)

Lateral - side part
Latitude - the distance north and south of the equator
Least - smallest
Length - the distance along a line or figure from one point to another
Less Than - fewer than
Light Year - the distance light travels through space in one year (about 5.8 trillion miles)
Line - a straight path that extends forever in both directions
Line of symmetry - a line that divides a shape into two halves that are a mirror image of each other
Line Segment - a straight path from one point to another
Linear - having to do with lines
Liter - a metric measure of volume/capacity almost equal to a quart

Mass - how much matter is in an object
Maximum - greatest amount
Mean - a way to average a group without extremes in the data in which all data is
added and equally divided up
Measure - the length, quantity, dimensions, or capacity of something
Median - a way to average counts or measures when they are extremes in the data. The middle point of the ordered group of data is found
Metric - a system of measurement based on tens
Midpoint - the point on a line segment that divides the segment into two equal parts
Mile - a standard measure of length equal to 5280 feet
Million - a large number equal to one thousand 1,000s
Minimum - least amount
Minute - a measure of time equal to 60 seconds
Mixed Fraction - a number with a whole number and a fraction part
Mode - a way to average data when there are many identical data points. The mode is the data that occurs most often
Money - coins and paper bills used for buying and selling
More Than - greater than
Multiple - the product of any two whole numbers
Multiplication - the operation of adding the same number over and over or groups shown in an array

Negative Numbers - numbers less than zero
Net - a two-dimensional figure that can be folded to make a three-dimensional model
Network - connection between points or line segments
Nonagon - nine-sided polygon
None - not even one
Number - symbols used for counting and measuring
Number line - a picture (diagram) showing numbers as points on a line
Numeral - digits used to make up numbers
Numerator - the top number in a fraction which tells the number of parts selected

Oblong - a shape that is greater in length than in width

Longitude - the distance east and west of the equator

Octagon - eight-sided polygon
Odd - a number that is not a multiple of 2. It has a 1, 3,5, 7, or 9 in the one's place
Ordinal - numbers which tell what position something has (first, second, third<<)
Ounce - a standard measure of weight/mass
Outcome - one of the possibilities in a probability experiment
Oval - a curved shape like an egg

Parallel - straight lines that always stay the same distance away from each other
Parallelogram - a four-sided polygon with two sets of parallel sides
Patterns - a repeating sequence of number or shapes
Pentagon - five-sided polygon
Percent - a number compared to part of 100 using a % sign
Perimeter - distance around the outside edge of a closed figure
Perpendicular- two lines that form a right angle where they intersect
Pi - the comparison of the diameter of a circle to its circumference (about 3.14)
Pictograph - a visual display of data which uses pictures to represent amounts
Pint - standard unit of liquid measure equaling two cups
Place Value - the value of each digit in a number
Plus - see addition
Point - a location (dot) that has no length, width or height
Polygon - a closed two-dimensional figure made with straight line segments which join only at endpoints
Position - the place something holds in space
Prime Number - a number with only two factors: 1 and itself
Prism - a three-dimensional shape with two congruent bases
Probability - the strand of math looking at the chance of events occurring
Product - the answer to a multiplication problem
Proportion - a number sentence showing two equal ratios
Protractor - a math tool for measuring and drawing angles
Pyramid - a three-dimensional figure with a polygon base and all other faces are triangles which met at a common vertex

Quadrant - one of the four sections of a coordinate grid
Quadrilateral - four-sided polygon
Qualify - to describe the characteristics of something

Obtuse Angle - an angle greater than 90°

Quarter - 1) a coin with a value of $.25   2) one-fourth of something
Quotient - the answer to a division problem

Radius - a line segment from the center of a circle to the edge
Random - by chance
Range - the least to greatest value in a set of data
Ratio - comparing two numbers using division
Rectangle - a parallelogram with four right angles
Reflection - creating a mirror image of a shape by flipping it over
Remainder - the amount left over when you have divided as far as possible. Must be smaller than the divisor
Reoccurring - happening repeatedly
Rhombus - a parallelogram with all sides equal in length
Right Angle - a 90° angle
Rotate - turning a shape around on a vertex
Rotation - turning a shape around on a vertex
Rounding - determining an approximate value of a number to a given place value
Row - a horizontal list
Rule - words that describe a relationship between numbers or objects
Ruler - a measuring tool used to determine length

Scale - a measuring tool used to determine weight
Scalene - a triangle with three sides, each a different length
Second - 1) number two in order, or 2) a measure of time equal to 1/60th of a minute
Semicircle - half of a circle
Septagon - seven-sided polygon
Set - a collection of data with something in common
Shape - something having a specific form
Side - a line segment that forms part of a polygon
Similar - having the same shape, but not the same size
Simplify - to reduce a fraction to lowest terms
Slope - the rise of a line
Solid figure - a geometric shape with three dimensions
Sort - to put together things that are in some way alike

Quantity - an amount
Quart - a standard unit of liquid measure that is equal to 4 cups

Square Number - numbers that can be shown in a square array
Straight - unbending
Subtraction - the operation of finding the difference between two numbers or taking away
Sum - the answer in an addition problem
Surface - the outside part
Surface area - the area of all the faces on a three-dimensional shape
Symbol - something that stands for something else
Symmetry - showing an exact duplicate of a shape on an opposite side of a line (line of symmetry) or around a central point (point symmetry)

Table - an orderly arrangement of data
Take Away - see subtraction
Tally - marks used to keep track of an amount
Temperature - amount of heat or cold, measured by a thermometer
Tesselate - to arrange an area in a repeating geometric pattern
Tetrahedron - a three-dimensional shape with four triangular faces
Tile - see tesselate
Time - the way we measure years, days, minutes
Total - the whole amount
Translation - sliding a geometric shape a certain distance in the same direction
Trapezoid - a quadrilateral with only one set of parallel sides
Triangle - a three-sided polygon
Triangular Numbers - a sequence of numbers that can be shown with dots making up a triangle shape

Undecagon - an 11-sided polygon
Uneven - not even
Uniform - the same
Unit - a fixed amount in measurement

Sphere - a perfectly round three-dimensional geometric solid
Square - a parallelogram with four congruent sides and four right angles

Value - how much something is worth
Variable - a letter or symbol that stands for another number
Venn Diagram - a drawing with circles that shows relationships between sets of data
Vertex - the place where two or more line segments come together
Vertical - a line that is perpendicular to the horizon
Volume - the number of cubic units it takes to fill a three-dimensional shape

Week - a set of seven consecutive days
Weight - a measure of the heaviness of an object
Whole Number - all counting numbers including zero
Width - a measure of the distance of an object from side to side

x-axis - the horizontal axis on a coordinate grid

Yard - a standard unit of measure equal to 3 feet
y-axis - the vertical axis on a coordinate grid
Year - a length of time equal to 365 days

Zenith - the highest or greatest point
Zero - a number with no value
Zillion - a large number equal to a thousand million