

MATHEMATICALLY READY FOR FOURTH GRADE

This form lists the skills your child should have already mastered, and the skills your child will be assessed on in the beginning of the next grade level. These skills are assessed with the DIBELS assessment in October and April. Please keep in mind the students may not have learned all the skills they are assessed on by the time DIBELS takes place, depending on when it is taught in the classroom. This is an opportunity to “jumpstart” these skills this summer, before taking the next DIBELS assessment. We highly recommend the IXL program, which can be accessed through computers and iPads, to assist your child in mastering these skills. IXL is a research-based, user-friendly program to master mathematical skills, and is divided and organized by grade level.

*At the end of **third grade**, your child was assessed on:*

Computation:

- Add two two-digit numbers, without carrying, resulting in an answer of 100 or less
- Add two two-digit numbers, with carrying, resulting in an answer of 100 or less
- Subtract a one- or two-digit number, without borrowing
- Subtract a two-digit number from a two-digit number of 20 or more, with borrowing
- Add two two- or three-digit numbers, without carrying, resulting in an answer of 1000 or less
- Add two two- or three-digit numbers, with carrying, resulting in an answer of 1000 or less
- Multiply a one-digit number by a one-digit number, resulting in an answer of 20 or less
- Multiply a one-digit number by a one-digit number, resulting in an answer of between 21 and 50
- Multiply a one-digit number by a one-digit, resulting in an answer of 51 or more
- Multiply a one-digit number by itself
- Multiply a one-digit number by 0 or 1
- Divide a one-digit number by a one-digit number, resulting in a one-digit answer, and no remainder
- Divide a two-digit number by a one-digit number, resulting in a one-digit number, and no remainder
- Subtract a two- or three-digit number from a three-digit number, without borrowing
- Subtract a two- or three-digit number from a three-digit number, with borrowing
- Multiply a one-digit number by a two-digit multiple of 10
- Multiply a one-digit number by a two-digit number, without carrying, resulting in an answer of less than 100
- Multiply a one-digit number by a two-digit number, with carrying, resulting in an answer of less than 100

Concepts and Applications:

- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects
- Reason with shapes and their attributes
- Use place value understanding and properties of operations to perform multi-digit arithmetic
- Represent and solve problems involving multiplication and division
- Develop understanding of fractions as numbers
- Represent and Interpret Data
- Solve problems involving the four operations, and identify and explain patterns in arithmetic
- Geometric measurement: Understand concepts of area and relate area to multiplication and to addition
- Understand properties of multiplication and the relationship between multiplication and division
- Geometric measurement: Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures

In October of fourth grade, your child will be assessed on:

Computation:

- Add two two- or three-digit numbers, without carrying, resulting in a sum of 1000 or less
- Multiply a one-digit number by a one-digit number, resulting in an answer of 51 or more
- Divide a two-digit number by a one-digit number, resulting in a one-digit answer, with no remainder
- Subtract a two- or three-digit number from a three-digit number, without a remainder
- Add two four-digit numbers, with carrying.
- Subtract a three-digit number from a four-digit number, with borrowing.
- Add or subtract two fractions with common denominators
- Add or subtract two mixed numbers with common denominators
- Divide a three-digit number by a one-digit number, resulting in an answer, with a remainder
- Multiply a one-digit number by a three-digit number, with carrying.
- Multiply a two-digit number by a two-digit number, without carrying
- Multiply a two-digit number by a two-digit number

Concepts and Applications:

- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers
- Draw and identify lines and angles, and classify shapes by properties of their lines and angles
- Extend understanding of fraction equivalence and ordering
- Gain familiarity with factors and multiples
- Generalize place value understanding for multi-digit whole numbers
- Represent and interpret data
- Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit
- Understand decimal notation for fractions, and compare decimal fractions
- Use the four operations with whole numbers to solve problems

Math Dictionary Terms for Grades 4-5:

A

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

B

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*

C

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

Center - middle point

Centimeter - a metric measure which takes 10 millimeters to make

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

Coins - metal money

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

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 -

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

D

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

E

Each - every one of a group

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

Endpoint - the end of a line segment

Equal - having the same value as

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

Equation - a math sentence showing two parts as equal

Equivalent - having the same value

Estimate - an approximate answer

Even - a number that is a multiple of 2. It has a 0, 1, 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

F

Face - a side on a three-dimensional shape

Face Value - the amount something is worth as shown

Fact - something proven to be true

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

G

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)

H

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

I

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

J

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

K

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)

L

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

Longitude - the distance east and west of the equator

M

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

N

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

Numberline - 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

O

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

Obtuse Angle - an angle greater than 90°

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

Ounce - a standard measure of weight/mass

Outcome - one of the possibilities in a probability experiment

Oval - a curved shape like an egg

P

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

Pictograph - a visual display of data which uses pictures to represent amounts

Pi - the comparison of the diameter of a circle to its circumference (about 3.14)

Pint - standard unit of liquid measure equaling two cups

Place Value - the value of each digit in a number

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

Possible - has a chance of happening

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 meet at a common vertex

Q

Quadrant - one of the four sections of a coordinate grid
Quadrilateral - four-sided polygon
Qualify - to describe the characteristics of something
Quantity - an amount
Quart - a standard unit of liquid measure that is equal to 4 cups
Quarter - 1) a coin with a value of \$.25, 2) one-fourth of something
Quotient - the answer to a division problem

R

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
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

S

Second - 1) number two in order, or 2) a measure of time equal to $1/60^{\text{th}}$ of a minute
Scale - a measuring tool used to determine weight
Scalene - a triangle with three sides, each a different length
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
Simplify - to reduce a fraction to lowest terms
Similar - having the same shape, but not the same size
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
Sphere - a perfectly round three-dimensional geometric solid
Square - a parallelogram with four congruent sides and four right angles
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)

T

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

Tessellate - to arrange an area in a repeating geometric pattern

Tetrahedron - a three-dimensional shape with four triangular faces

Tile - *see tessellate*

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

U

Undecagon - an 11-sided polygon

Uneven - not even

Uniform - the same

Unit - a fixed amount in measurement

V

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

W

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

x-axis - the horizontal axis on a coordinate grid

Y

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

Z

Zenith - the highest or greatest point

Zero - a number with no value

Zillion - a large number equal to a thousand millions