5th Grade Math Vocabulary Resources

www.k-5mathteachingresources.com
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5th Grade Math Vocabulary Resources contains two resources to promote student independence, develop math vocabulary, and support reading and writing in mathematics. All vocabulary is aligned with the Common Core State Standards.

My Math Vocabulary Book contains over 200 essential math words for 5th Grade, math writing prompts, math talk stems, a multiplication grid, and space on each page for students to write in extra math vocabulary if needed. Print a copy for each student in your class (7 double sided pages) and watch their math writing skills improve.

Also included in this file is a set of 188 Math Vocabulary Cards for your Math Word Wall (see the following page for a list of vocabulary). Each card contains a key term in large font with a visual or example. Cards in each domain are color coded.

Printing Instructions:

Pages 7-20 of this file contain the template for My Math Vocabulary book. Before printing the book set your printer to print on both sides of the paper and to flip on the short edge (otherwise the pages will be upside down on the back). Print and fold the stack of pages. Open and staple along the fold with a long arm stapler. If making a class set print one master copy and use your school photocopier to make additional copies. For added durability you may want to consider printing the cover page on cardstock.

Be sure to return your printer settings to print on one side before printing the 5th Grade Math Vocabulary Cards. For long term use print the vocabulary cards on white cardstock and/or laminate them. Blank cards are included for additional words you may need to add to the set. You may also want to print extra copies of the blank cards and have students take responsibility for writing a definition to be displayed alongside each word on the word wall.
The following vocabulary is included on the 5th Grade Math Word Wall Cards:

<table>
<thead>
<tr>
<th>Operations &amp; Algebraic Thinking</th>
<th>Number &amp; Op. in Base Ten</th>
<th>Number &amp; Op: Fractions</th>
<th>Measurement &amp; Data</th>
<th>Geometry</th>
</tr>
</thead>
<tbody>
<tr>
<td>addition, addend, sum, minuend, subtrahend, difference, subtraction, unknown quantity, inverse operation, equation, fact family, estimate, column, row, array, multiplication, factor, product, operation, divisible, multiple, division, order of operations, compatible numbers, dividend, divisor, quotient, prime number, compatible number, expression, factor pair, strategy, pattern, rule, sequence, term, increasing, decreasing, parentheses, brackets, braces, power of ten, exponent, exponential notation</td>
<td>greater than, less than, place value, midpoint, digit, round, standard form, expanded form, word form</td>
<td>fraction, decimal, fraction model, whole, one half, one third, one fourth, one sixth, one eighth, numerator, denominator, unit fraction, tenth, hundredth, thousandth, decimal point, equivalent number, equivalent decimal, like denominator, like numerator, mixed number, equivalent fractions, compare, equal parts</td>
<td>elapsed time, hour, minute, second, protractor, conversion table, height, length, width, perimeter, metric unit, customary unit, centimeter (cm), meter (m), kilometer (km), inch (in.), foot (ft), yard (yd), mile (mi), half inch, quarter inch, area, formula, square unit, square inch, square foot, square centimeter, square meter, liquid volume, quart (qt), pint (pt), gallon (gal), milliliter (mL), liter (L), mass, ounce (oz), pound (lb) gram (g), kilogram (kg), line plot, minimum, maximum, tally chart, picture graph, bar graph, scale, key, frequency table, volume, cubic unit, rectangular prism</td>
<td>isosceles triangle, scalene triangle, equilateral triangle, right triangle, acute triangle, obtuse triangle, kite, rhombus, trapezoid, octagon, quadrilateral, pentagon, hexagon, parallelogram, decagon, side, vertex/vertices, angle, right angle, acute angle, obtuse angle, counter clockwise, clockwise, horizontal, line segment, point, ray, perpendicular, parallel, intersecting, closed figure, open figure, endpoint, regular polygon, irregular polygon, vertical, 2-dimensional, base, attributes, line of symmetry, congruent, similar, coordinate plane, first quadrant, quadrants, x-axis, y-axis, origin, x-coordinate, y-coordinate, ordered pair</td>
</tr>
</tbody>
</table>

Properties of Operations: Commutative Property of Addition, Commutative Property of Multiplication, Associative Property of Addition, Associative Property of Multiplication, Additive Identity Property of 0, Zero Property of Multiplication, Multiplicative Identity Property of 1, Distributive Property of Multiplication
Developing Student Knowledge of Math Vocabulary

Knowledge of math vocabulary is an essential component of learning mathematics. In order to communicate math thinking clearly and coherently, students need to learn and use appropriate math vocabulary. If we want students to use the language of mathematics precisely, it is important that we model appropriate language in context, both verbally and visually. Resources such as **math word walls** and **math vocabulary books** can provide scaffolds to bridge the gap between informal math language and the formal terminology of mathematics as students engage in mathematical explorations and experiences.

**Math Word Walls**

Math word walls have become a common feature in many classrooms. However, they are often underutilized and serve as little more than a decorative display. When used well the word wall can be a powerful tool that promotes independence, develops math vocabulary, and supports reading and writing in mathematics. Providing students with an individual Math Vocabulary Book ensures that all students have access to the language they need to develop their math writing skills. If your classroom Math word wall cannot be easily seen from all students’ tables consider introducing a Math Vocabulary Book as an added support.

Following are some suggestions to promote effective use of math vocabulary:

**Introduce vocabulary to students**

Introduce new math vocabulary, as appropriate, during lessons. Post new vocabulary on the word wall as it is introduced, rather than putting it all up at the beginning of a unit. As each word is placed on the word wall, discuss and agree upon a class definition and have a student write it on a blank card to be displayed alongside the word.

**Model how to use the word wall**

The more you use the word wall, the more your students will do the same. Putting the words up at the beginning of the year and telling students to use it without showing them how is setting your word wall up for failure. Refer to the word wall often so that students get in the habit of doing the same and model how to use it during math writing sessions.

**Make the word wall interactive**

Make your wall interactive by posting math vocabulary cards in a pocket chart. This allows students to go to the wall, remove a word, use it at their desk, and return it. It also makes it easier for you to dismantle the wall at the end of each unit which will save you time and make it more likely that you will update it regularly.
Less is more
Only put up math vocabulary for the current unit of study, otherwise the wall gets too crowded and becomes more difficult to use. Take down words once a unit is completed and retire them to the math center. Students can use cards from previous units to play the memory game Concentration where they match the word to the definition, Go Fish (“Do you have “a six sided figure?” “Yes, I have a hexagon.”), or any other games that will provide opportunities to review vocabulary.

Set Expectations
Let students know early in the year that you expect to see vocabulary from the word wall in students' math writing and that it should be spelled correctly. To begin with you may have to prompt students to make use of this resource: "Try to use at least 3 words from the math word wall in your math writing today".

Make word wall activities a regular part of the classroom routine
When used as a regular, predictable part of classroom routines word wall activities can play an important role in the development of students' math vocabulary. Setting aside 10 minutes on a regular, ongoing basis for word wall activities will make students more aware of the posted vocabulary and therefore more likely to independently use the wall as a tool during math writing activities. Possible activities include:

Tic-Tac-Toe: Draw a large grid on chart paper and tape a vocabulary card in each square. Divide students into teams. Teams take turns choosing a word and defining it. If the team defines the word correctly, remove the card and place an X or an O in the square. Leave the card on the board if the team answers incorrectly. Continue play until a team has three in a row.

The Word Wall Game: The objective of this game is for students to find words on the word wall using clues given by the teacher, or another student. Clues may consist of a definition or description of a word. Once the clue is completed students may raise their hand to announce that the know where the word is found on the word wall or write the word on their slate. The teacher calls on a student to go to the wall, identify the word using a pointer, and say it. A clue is then given for another word.

Sample clues for a 5th Grade Word Wall word wall: "I am thinking of a word that..."

- names the point that divides a line segment into halves. (midpoint)
- is another word for the result when two numbers are multiplied. (product)
- describes the measure of the amount of space inside a solid figure. (volume)

You can use the word wall game when you have a spare few minutes between lessons, or grab a stack of vocabulary cards as you are lining up to walk to or from lunch. You will be pleasantly surprised at how quickly students begin to incorporate these words into their math writing.
Cloze Activities: Write 2-3 sentences and leave blank spaces for students to fill in with appropriate math vocabulary from the word wall. Alternatively, call out a word from the math wall and have students write a sentence that expresses a relationship or connection between the term and another math term, concept, situation, or real-world application. These are both good warm up activities for the start of a lesson.

Math Doodles: Call out a math word and have the students sketch or doodle a picture of the word for 15-20 seconds, until the next word is called. Students connect each of their doodles with a line, making a simple link. After you’ve called out 5 words have students label their doodles without looking at the math word wall. Next, ask students to call out the words in their chain before checking the spelling of their words against the math word wall to make sure they are accurate.

Math Vocabulary Books

My Math Vocabulary book can be used alongside the class math word wall to promote independence and support math writing. Similar to a personal dictionary, this book allows for differentiation as students can add the words they need to their book and have them readily available at all times to build precise use of math vocabulary. Students can also add definitions and/or examples.
## Multiplication Table

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</table>

## My Math Vocabulary

**5th Grade**
Math Writing Prompts

My math goal is ……To reach this goal I will ……

Today/This week in Math I …

The most difficult part of this work was …

Something new I learned in Math today was …

Something I did well in this unit was …

Something I still need to work on is …

I chose this piece of work to publish because …

I can improve this work by …

I know that … I need to find out …

To solve this problem I …

I think this problem is similar to …

I think the answer is … because …

Another possible solution is …

Another possible strategy would be …

My preferred strategy is … because …

I think the most efficient strategy is … because …

To model the problem I …

I know my answer is reasonable because …

To check my work I …
Properties of Operations

Commutative Property of Addition
Changing the order of the addends does not change the sum. Example: $3 + 5 = 5 + 3$

Commutative Property of Multiplication
Changing the order of the factors does not change the product. Example: $3 \times 2 = 2 \times 3$

Associative Property of Addition
Changing the grouping of 3 or more addends does not change the sum. Example: $(2 + 8) + 4 = 2 + (8 + 4)$

Associative Property of Multiplication
Changing the grouping of 3 or more factors does not change the product. Example: $(2 \times 3) \times 4 = 2 \times (3 \times 4)$

Additive Identity Property of 0
The sum of any number and zero equals the number. Example: $7 + 0 = 0 + 7 = 7$

Zero Property of Multiplication
The product of any number and zero is zero. Example: $8 \times 0 = 0 \times 8 = 0$

Multiplicative Identity Property of 1
The product of any number and one equals the number. Example: $7 \times 1 = 1 \times 7 = 7$

Distributive Property of Multiplication
Multiplying a sum by a given number is the same as multiplying each addend by the number and then adding the products. Example: $6 \times 8 = 48$

$$6 \times (5 + 3) = (6 \times 5) + (6 \times 3) = 30 + 18 = 48$$
Place Value

digit
ones place
tens place
hundreds place
thousands place
ten thousands place
hundred thousands place
millions place
greater than
less than
equal to =
not equal to ≠

<table>
<thead>
<tr>
<th>Place Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5, 6, 4, 9, 7, 2, 8</td>
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</table>

coordinates system
coordinate plane
first quadrant
ordered pair
origin
x-axis
y-axis
x-coordinate
y-coordinate
horizontal
vertical
intersection
3-Dimensional Figures

- face
- edge
- vertex/vertices
- base
- cube
- cone
- sphere
- cylinder
- pyramid
- prism
- flat surface
- curved surface

Volume

- dimensions
- cubic units
- cubic centimeter
- cubic inch
- cubic feet
- cubic yard
- cubic meter
- formula
- length
- width
- height
- base
- right rectangular prism
To solve this problem I …

The factor pairs for 12 are 1 x 12, 2 x 6, and 3 x 4.
pattern
1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25

rule

<table>
<thead>
<tr>
<th>Hours</th>
<th>$ earned</th>
</tr>
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<tbody>
<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>18</td>
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<td>4</td>
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</tbody>
</table>

4, 8, 12, 16 …
Rule +4

5, 10, 15, 20, 25, 30, ….

sequence
3, 6, 9, 12, 15, 18, ….
power of ten

$5^3 = 5 \times 5 \times 5 = 125$

exponent

$3^2 = 3 \times 3 = 9$

exponential notation

$1000 = 10 \times 10 \times 10 = 10^3$
$100 = 10 \times 10 = 10^2$
$10 = 10^1$
$1 = 10^0$
Round 482 to the nearest ten. 482 falls between 450 and 500 on the number line. It is closer to 500 so it would be rounded to 500.
standard form
2500

word form
79 = seventy nine
256 = two hundred fifty six

expanded form
324.5 = 300 + 20 + 4 + 0.5
324.5 = (3 x 100) + (2 x 10) + (4 x 1) + (5 x 0.1)
the count of the number of equal parts

numerator

the number of equal parts
denominator

unit fraction
0.1 \( \frac{1}{10} \) tenth

0.01 \( \frac{1}{100} \) hundredth

0.001 \( \frac{1}{1000} \) thousandth
Area = 12 square units

area

Area = b \times h
Perimeter = 2 \times (b + h)

formula

1 square unit

square unit
line plot

minimum

least

maximum

most
volume

V = L x W x H
or  V = B x H

cm³  m³  in³  ft³

cubic unit

rectangular prism
isosceles triangle

scalene triangle

equilaterial triangle
right triangle

acute triangle

obtuse triangle
quadrilateral
pentagon
hexagon
right angle
acute angle
obtuse angle
perpendicular

parallel

intersecting
coordinate plane

first quadrant

quadrants
- **x-axis**

- **y-axis**

- **vertical**

- **horizontal**

- **origin** $(0,0)$
Commutative Property of Addition
Changing the order of the addends does not change the sum.

Example: $3 + 5 = 5 + 3$

Commutative Property of Multiplication
Changing the order of the factors does not change the product.

Example: $3 \times 2 = 2 \times 3$
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Changing the grouping of 3 or more addends does not change the sum.

Example: \((2 + 8) + 4 = 2 + (8 + 4)\)

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Example: \((2 \times 3) \times 4 = 2 \times (3 \times 4)\)
Additive Identity Property of 0

The sum of any number and zero equals the number.

Example: \( 7 + 0 = 0 + 7 = 7 \)

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The product of any number and zero is zero.

Example: \( 8 \times 0 = 0 \times 8 = 0 \)
Multiplicative Identity Property of 1

The product of any number and one equals the number.

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Distributive Property of Multiplication

Multiplying a sum by a given number is the same as multiplying each addend by the number and then adding the products.

Example: \(6 \times 8 = 48\)

\(6 \times (5 + 3) = (6 \times 5) + (6 \times 3)\)
\[= 30 + 18 = 48\]