

Practices

MP5 Use appropriate tools strategically.

Fifth graders consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use unit cubes to fill a rectangular prism and then use a ruler to measure the dimensions. They use graph paper to accurately create graphs and solve problems or make predictions from real world data.

MP6 Attend to precision.

Students continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students use appropriate terminology when referring to expressions, fractions, geometric figures, and coordinate grids. They are careful about specifying units of measure and state the meaning of the symbols they choose. For instance, when figuring out the volume of a rectangular prism they record their answers in cubic units.

MP7 Look for and make use of structure.

In fifth grade, students look closely to discover a pattern or structure. For instance, students use properties of operations as strategies to add, subtract, multiply and divide with whole numbers, fractions, and decimals. They examine numerical patterns and relate them to a rule or a graphical representation.

MP8 Look for and express regularity in repeated reasoning.

Fifth graders use repeated reasoning to understand algorithms and make generalizations about patterns. Students connect place value and their prior work with operations to understand algorithms to fluently multiply multi-digit numbers and perform all operations with decimals to hundredths. Students explore operations with fractions with visual models and begin to formulate generalizations.

www.aMathsDictionaryforKids.com

An animated, interactive dictionary for students which explains over 600 common mathematical terms in simple language.



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Source Documents:

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Adapted from North Dakota Content Standards: "I Can" Statements

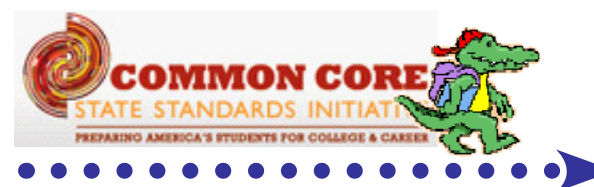
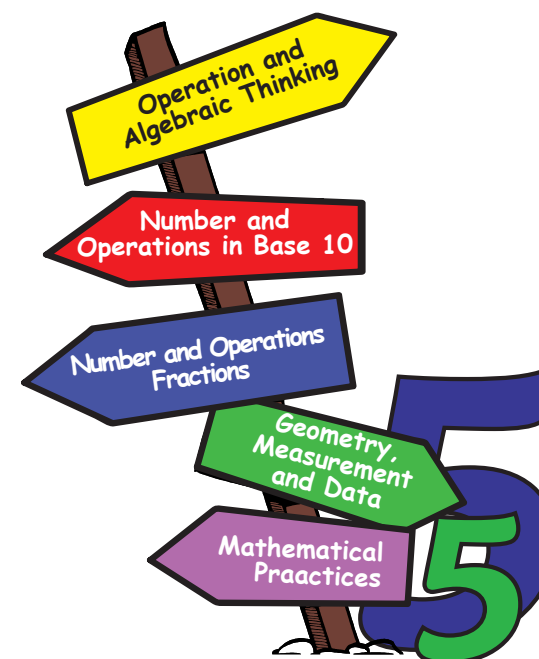
Adapted from Arizona Department of Education Mathematics Standards, 2010

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Grade 5

CCSS Math Expectations Checklist



Mathematical

MP1 Make sense of problems and persevere in solving them.

Students solve problems by applying their understanding of operations with whole numbers, decimals, and fractions including mixed numbers. They solve problems related to volume and measurement conversions. Students seek the meaning of a problem and look for efficient ways to represent and solve it. They may check their thinking by asking themselves, "What is the most efficient way to solve the problem?", "Does this make sense?", and "Can I solve the problem in a different way?"

MP2 Reason abstractly and quantitatively.

Fifth graders should recognize that a number represents a specific quantity. They connect quantities to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities. They extend this understanding from whole numbers to their work with fractions and decimals. Students write simple expressions that record calculations with numbers and represent or round numbers using place value concepts.

MP3 Construct viable arguments and critique the reasoning of others.

In fifth grade, students may construct arguments using concrete referents, such as objects, pictures, and drawings. They explain calculations based upon models and properties of operations and rules that generate patterns. They demonstrate and explain the relationship between volume and multiplication. They refine their mathematical communication skills as they participate in mathematical discussions involving questions like "How did you get that?" and "Why is that true?" They explain their thinking to others and respond to others' thinking.

MP4 Model with mathematics.

Students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, making a chart, list, or graph, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. Fifth graders should evaluate their results in the context of the situation and whether the results make sense. They also evaluate the utility of models to determine which models are most useful and efficient to solve problems.



My checklist of what I can do in 5th grade math

I understand that it is important to apply the mathematical practices (identified on the inside cover) on a regular basis.

Operations & Algebraic Thinking

Write and interpret numerical expressions: (5.OA.1, 5.OA.2)

- I can use algebraic expressions and evaluate using symbols.
- I can write/explain simple numerical expressions without finding the answer. _____ write _____ explain

Analyze patterns and relationships: (5.OA.3)

- I can create a function table (input/output).
- I can explain the rule.
- I can graph the ordered pairs.
- I can explain my graph.

Number & Operations in Base 10

Understand the place value system: (5.NBT.1, 5.NBT.2, 5.NBT.3, 5.NBT.4)

- I can determine that a digit represents ten times what it would be in the place to its right and one-tenth to its left.
- I can explain the powers of ten.
- I can explain the pattern in placement of a decimal point using a power of ten.
- I can read/write decimals to thousandths using numerals, number names, and expanded form. _____ read _____ write
- I can compare two decimals to thousandths using $<$, $>$, $=$.
- I can round decimals to any place.

Perform operations with multi-digit whole numbers and with decimals to hundredths: (5.NBT.5, 5.NBT.6, 5.NBT.7)

- I can multiply multi-digit of whole numbers.
- I can divide four-digit whole numbers by two-digit whole numbers.
- I can show/explain the results of division using equations, arrays, or area models. _____ show _____ explain

- I can add, subtract, multiply, and divide decimals to the hundredths using various methods. _____ add _____ subtract _____ multiply _____ divide _____ explain how I found the answer

Number & Operations – Fractions

Use equivalent fractions as a strategy to add and subtract fractions: (5.NF.1, 5.NF.2)

- I can use equivalent fractions to add/subtract fractions with unlike denominators. _____ add _____ subtract
- I can solve word problems involving addition and subtraction of fractions including unlike denominators.
- I can use benchmark fractions and number sense to estimate.
- I can check for the reasonableness of my answers.

Apply and extend previous understandings of multiplication and division to multiply and divide fractions: (5.NF.3, 5.NF.4, 5.NF.5, 5.NF.6, 5.NF.7)

- I can explain a fraction as division of the numerator by the denominator.
- I can solve word problems involving division and write the remainder as a fraction.
- I can explain the product of a whole number and a fraction using a visual fraction model.
- I can explain the product of two fractions using a visual fraction model.
- I can create a story to describe the equations.
- I can find the area of a rectangle with fractional sides by tiling.
- I can show the area is the same as would be found through multiplication.
- I can multiply fractional side lengths to find the area of rectangles.

- I can show fraction products as rectangular areas.
- I can compare the size of a product to the size of one factor based on the size of the other factor without multiplying.
- I can explain why multiplying a number by a fraction greater than 1 results in a product greater than the number.
- I can explain why multiplying a number by a fraction less than 1 results in a product smaller than the number.
- I can solve real-world problems involving multiplication of fractions and mixed numbers using visual fraction models.
- I can explain division of a unit fraction by a whole number.
- I can find the quotient of a division problem for a unit fraction and whole number.
- I can explain division of a whole number by unit fraction
- I can find the quotient of a division problem for a whole number and a unit fraction.
- I can solve real world problems involving division of unit fractions by whole numbers.
- I can solve real world problems involving division of whole numbers by unit fractions.

Geometry

Graph points on the coordinate plane to solve real-world and mathematical problems: (5.G.1, 5.G.2)

- I can identify the parts of a coordinate plane.
- I can plot a given point on the plane using ordered pairs.
- I can represent and interpret real world and math problems by graphing points on the coordinate plane.

Classify two-dimensional figures into categories based on their properties: (5.G.3, 5.G.4)

- I can identify attributes and categories of two-dimensional figures.
- I can classify two-dimensional figures in a hierarchy according to their attributes.

Measurement and Data

Convert like measurement units within a given measurement system: (5.MD.1)

- I can do measurement conversions within the same system.
- I can use these conversions to solve multi-step, real world problems.

Represent and interpret data: (5.MD.2)

- I can make a line plot to display a set of measurements in fractions of a unit ($1/2$, $1/4$, $1/8$).
- I can solve problems with the information on the line plot.

Geometric measurement – understand concepts of volume and relate volume to multiplication and to addition: (5.MD.3, 5.MD.4, 5.MD.5)

- I can use a unit cube to measure volume.
- I can identify the volume of a solid figure in cubic units.
- I can measure volume by counting unit cubes.
- I can find the volume of a right rectangular prism using unit cubes
- I can show volume of a right rectangular prism by multiplying the edge lengths.
- I can show volume of a right rectangular prism by multiplying the height by the area of the base.
- I can use $l \times w \times h$ and $b \times h$ to find volume for right rectangular prisms in real world problems.
- I can find the volume of a solid figure made of two non-overlapping parts by adding the volumes of the two right rectangular prisms in real world problems

How to use checklist:

- Show the date of when you were able to do the math expectation.
- Show an example of what you did in a journal.