

6th grade SC Ready Checklist

This document contains a list of 6th grade objectives arranged by big topics. The standard is referenced beside each objective. Remember that the SC Ready assessment will also incorporate the SC Mathematical Process Standards; therefore, it is important to also review these topics through processes such as problem solving.

Please double check for accuracy and correct any possible errors.

Fractions

___ Represent division of positive fractions using (6.NS.1)

- Visual models
- Equations
- Real world situations

___ Compute the quotient of positive fractions using (6.NS.1)

- Visual models
- Equations
- Real world situations

___ Translate among fractions, decimals and percents (Denominators of 2, 3, 4, 5, 8, 10, 100) (6.NS.9)

Whole numbers

___ Fluently divide whole numbers (6.NS.2)

___ Compute the greatest common factor for two number less than or equal to 100 (6.NS.4a)

___ Compute the least common multiple for two numbers less than or equal to 12 (6.NS.4b)

___ Use the distributive property to factor out a common factor from two whole numbers that are each less than or equal to 100 (6.NS.4c)

Decimals

___ Fluently add decimals (6.NS.3)

___ Fluently subtract decimals (6.NS.3)

___ Fluently multiply decimals (6.NS.3)

___ Fluently divide decimals (6.NS.3)

Integers

___ Understand that positive and negative numbers are opposites (6.NS.5)

___ Represent real world situations with integers and explain the meaning of zero (6.NS.5)

Coordinate Plane

___ Understand the parts of the coordinate grid (6.NS.6a)

___ Understand the opposite numbers and zero and their location on the number line (6.NS.6a)

___ Know the signs of the of the quadrants (6.NS.6b)

___ Indicate the quadrant in which a point is located (6.NS.6b)

___ Use the signs of the quadrants to recognize reflections of a points (6.NS.6c)

- Across the x axis
- Across the y axis
- Across the origin

___ Plot rational numbers on a number line (6.NS.6d)

___ Plot ordered pairs (containing rational numbers) on the coordinate grid (6.NS.6d)

___ Solve coordinate grid problems by plotting points in all four quadrants to represent the problem (6.NS.8a)

___ Use the coordinate grid to find the distance between two points that have the same x coordinate (6.NS.8b)

___ Use the coordinate grid to find the distance between two points that have the same y coordinate (6.NS.8b)

___ Understand that finding the distance between two points is the same as the absolute value (6.NS.8c)

Rational numbers

___ Interpret statements with rational numbers using equal to (=) and not equal to (\neq) (6.NS.7a)

___ Interpret locations of rational numbers on a number line using $<$, $>$ or $=$ (6.NS.7b)

___ Write an equation or inequality involving rational numbers for a real world situation (6.NS.7c)

Rational numbers continued

___ Explain a real world situation involving rational numbers using an equation or inequality (6.NS.7c)

___ Understand the meaning of absolute value (6.NS.7d)

___ Represent a real world situation with the absolute value of a rational number (6.NS.7d)

___ Understand that comparing absolute value is different from comparing rational numbers (6.NS.7e)

___ Understand that the absolute value of a negative rational number increases (6.NS.7e)

Ratios and Proportions

___ Interpret a ratio as a part to part ratio (6.RP.1)

___ Interpret a ratio as a part to whole ratio (6.RP.1)

___ Translate between multiple representations of ratios (6.RP.2a)

- a. Visual models
- b. $a : b$
- c. a to b
- d. $\frac{a}{b}$

___ Recognize that a rate is a ratio involving two different units (6.RP.2b)

___ Convert rates to unit rates (6.RP.2c)

___ Create an equivalent ratio table then plot the results on a coordinate plane (6.RP.3a)

___ Find a missing value involving equivalent ratios when given one of the following (6.RP.3b)

- a. Tape diagram
- b. Tables
- c. Double number line
- d. Equations

___ Use two tables to compare related ratios (6.RP.3c)

___ Solve unit rate problems (6.RP.3d)

- a. Unit pricing
- b. Constant speed

___ Solve percent problems (6.RP.3e)

- a. Find the whole
- b. Find the part
- c. Find the percent

___ Solve one step ratio and unit rate problems. For example, dimensional analysis (6.RP.3f)

Equations, Expressions and Inequalities

___ Write a numerical expression involving whole number exponents and positive rational bases using the Order of Operations (6.EE.1)

___ Evaluate a numerical expression involving whole number exponents and positive rational bases using the Order of Operations (6.EE.1)

___ Translate between algebraic expressions and verbal phrases that include variables and positive rational numbers (6.EE.2a)

___ Investigate and identify parts of an algebraic expressions involving positive rational numbers (6.EE.2b)

- a. Term
- b. Coefficient
- c. Constant
- d. Factor

___ Use the Order of Operations to evaluate algebraic expressions involving rational numbers and whole number exponents; grouping symbols are limited to $()$, $\{$, $]$ (6.EE.2c)

___ Generate equivalent expressions using (6.EE.3)

- a. Commutative property
- b. Associative property
- c. Distributive property

___ Justify that two expressions are equivalent using (6.EE.4)

- a. Commutative property
- b. Associative property
- c. Distributive property

___ Understand that a solution, if it exists, must make the equation or inequality true (6.EE.5)

___ Understand the meaning of the variable in a real world situation (6.EE.6)

___ Write expressions using variable to represent real world and mathematical situations (6.EE.6)

Equations, expressions and inequalities cont'd

___ Write a one – step linear equation in one variable involving nonnegative rational numbers that represents a real world or mathematical situation (6.EE1.7)

___ Solve a one – step linear equation in one variable involving nonnegative rational numbers that represents a real world or mathematical situation (6.EE1.7)

___ Write an inequality in the form $x < c$ or $x > c$ to represent a real world or mathematical situation (6.EE1.8a)

___ Graph the solution set to an inequality on a number line (6.EE1.8a)

___ Recognize that inequalities have infinitely many solutions (6.EE1.8b)

___ Write an equation that models a relationship between an independent and dependent variable (6.EE1.9a)

___ Use a graph to analyze the relationship between independent and dependent variables (6.EE1.9b)

___ Use a table to analyze the relationship between independent and dependent variables (6.EE1.9b)

___ Translate among graphs, tables and equations (6.EE1.9c)

Geometry and Measurement

___ Find the area of figures by composing into rectangles or decomposing into triangles and other shapes; apply to real world situations (6.GM.1)

- a. Triangles
- b. Special quadrilaterals
- c. Polygons

___ Apply the volume formulas $V = lwh$ or $V = Bh$ to solve real world and mathematical problems involving whole number or fractional edge lengths (6.GM.2)

___ Given coordinates of the vertices, draw a polygon in the coordinate plane (6.GM.3a)

___ Find the length of an edge if the vertices have the same x coordinates or the same y coordinates (6.GM.3b)

___ Use two dimensional nets to find the surface area of three dimensional figures in real world and mathematical problems (6.GM.4)

Data Analysis and Statistics

___ Differentiate between statistical and non – statistical questions (6.DS.1)

___ Use the following to describe the distribution of a set of data (6.DS.2)

- a. Mean
- b. Median
- c. Mode
- d. Range
- e. Interquartile range
- f. Mean absolute deviation
- g. Symmetrical
- h. Skewed left
- i. Skewed right

___ Recognize that the measure of center for a data set summarizes all of its values with a single number (6.DS.3)

___ Recognize that the measure of variation describes how its values vary with a single number (6.DS.3)

___ Select and create an appropriate display for a numerical data set (6.DS.4)

- a. Dot plot
- b. Histogram
- c. Box plot

___ Describe numerical data sets in relation to their real world context (6.DS.5)

- a. State the sample size
- b. Describe qualitative aspects such as how it was measured and units of measure
- c. Give the measures of center (median and mean)
- d. Find the measures of variability using a number line (interquartile range and mean absolute deviation)
- e. Describe overall shape of the distribution
- f. Justify choices for measure of center and variability based on the shape of the distribution
- g. Describe the impact of inserting or deleting a data point on the measure of center (median and mode)