

7th grade SC Ready Checklist

This document contains a list of 7th 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.

Rational Numbers

___ Understand the meaning of the additive inverse (7.NS.1a)

___ Understand that the sum of a number and its additive inverse is zero (7.NS.1a)

___ Understand that $p + q$ means that we start at p on the numbers and move q spaces left or right based on the sign of q (7.NS.1b)

___ Translate $p - q = p + (-q)$; understand that subtraction is “add the opposite” (7.NS.1c)

___ Understand that the distance between two rational numbers on a number line is the absolute value of their difference (7.NS.1d)

___ Use the mathematical properties to add rational numbers (7.NS.1e)

___ Use the mathematical properties to subtract rational numbers (7.NS.1e)

___ Understand the meaning of the multiplicative inverse (7.NS.2a)

___ Understand that the product of a number and its reciprocal is equal to one (7.NS.2a)

___ Understand the sign rules for multiplying rational numbers (7.NS.2b)

___ Understand the sign rules for dividing rational numbers (7.NS.2c)

___ Understand that a quotient of integers with a non – zero divisor is a rational number (7.NS.2c)

___ Use mathematical properties to multiply rational numbers (7.NS.2d)

___ Use mathematical properties to divide rational numbers (7.NS.2d)

___ Understand that some rational numbers can be written as integers (7.NS.2e)

___ Understand that all rational numbers can be written as a decimal or fraction that terminates or repeats (7.NS.2e)

___ Solve real world problems and mathematical problems involving all four operations (7.NS.3)

___ Use $<$, $>$, \leq , \geq or $=$ to interpret statements related to the position of rational numbers on a number line (7.NS.4a)

___ Use an equation to write and to explain real world and mathematical situations (7.NS.4b)

___ Use an inequality to write and to explain real world and mathematical situations (7.NS.4b)

___ Translate among fractions, decimals and percents; exclude conversion of repeating decimals to fractions (7.NS.5)

Ratios and Proportional Relationships

___ Compute unit rates (7.RP.1)

- Involving complex fractions
- Involving like units
- Involving different units

___ Determine when two quantities are in a proportional relationship (7.RP.2a)

- Table
- Graph
- Equation
- Diagram
- Verbal description
- Real world situations

Ratios and Proportional Relationships continued

___ Recognize and compute the constant of proportionality (7.RP.2b)

- Table
- Graph
- Equation
- Diagram
- Verbal description
- Real world situations

___ Understand that the constant of proportionality is the unit rate (7.RP.2c)

___ Use equations to model proportional relationships (7.RP.2d)

___ Investigate the graph of a proportional relationship and explain the meaning of specific points such as the origin and unit rate in the context of the situation (7.RP.2e)

___ Solve real world and mathematical problems involving ratios and percentages using proportional reasoning (7.RP.3) For example,

- Multi – step dimensional analysis
- Percent increase
- Percent decrease
- Tax

Expressions, Equations and Inequalities

___ Simplify linear algebraic expressions with rational coefficients (7.EE.1)

___ Factor linear algebraic expressions with rational coefficients (7.EE.1)

___ Understand equivalent expressions can have many different forms (7.EE.2)

___ Determine an appropriate equivalent form for a given situation (7.EE.2)

___ Use the Order of Operations to solve multi – step real world and mathematical problems; include fractions bars as a grouping symbols (7.EE.3)

___ Write linear equations in the form $ax + b = c$ and $a(x + b) = c$ to represent real world and mathematical situations; a , b and c are rational numbers (7.EE.4a)

___ Fluently solve linear equations in the form $ax + b = c$ and $a(x + b) = c$ to represent real world and mathematical situations; a , b and c are rational numbers (7.EE.4a)

___ Write multi – step linear equations involving (7.EE.4b)

- Distributive property
 - Combining like terms
- *Exclude problems with variables on both sides

___ Solve multi – step linear equations involving (7.EE.4b)

- Distributive property
 - Combining like terms
- *Exclude problems with variables on both sides

___ Write a two – step linear inequality (7.EE.4c)

___ Solve a two – step linear inequality (7.EE.4c)

___ Graph the solution set to a linear inequality on a number line and interpret its meaning (7.EE.4c)

___ Identify and justify the steps for solving multi – step linear equations (7.EE.4d)

___ Identify and justify the steps for solving a two – step linear inequality (7.EE.4d)

___ Apply the laws of exponents to simplify expressions involving whole number exponents

- Product rule
- Quotient rule
- Power to a power rule
- Product to a power
- Quotient to a power
- Zero Power property

Geometry and Measurement

___ Determine the scale factor (7.GM.1)

___ Translate between a scale model and actual measurements using proportional reasoning (7.GM.1)

___ Construct triangles given all measurement of the angles and sides (7.GM.2a)

Geometry and measurement continued

___ Decide if the given measurements determine (7.GM.2b)

- A unique triangle
- More than one triangle
- No triangle

___ Construct special quadrilaterals given specific parameters about the angles and sides (7.GM.2c)

- Kite
- Trapezoid
- Isosceles trapezoid
- Rhombus
- Parallelogram
- Rectangle

___ Determine the two dimensional cross section of a right rectangular prism (7.GM.3)

___ Determine the two dimensional cross section of a right rectangular pyramid (7.GM.3)

___ Understand the proportional relationship between the diameter, radius and circumference of a circle (7.GM.4a)

___ Understand that π is the constant of proportionality between the circumference and diameter; $C = 3.14 d$ is a linear equation so π is the slope (7.GM.4b)

___ Understand how the circumference of a circle can be used to find the area of a circle (7.GM.4c)

___ Use the circumference formula to solve real world and mathematical problems (7.GM.4d)

___ Use the area formula of a circle to solve real world and mathematical problems (7.GM.4d)

___ Write equations to solve problems involving the angles formed by two intersecting lines (7.GM.5)

- Supplementary
- Complementary
- Vertical
- Adjacent

___ Understand that area applied to two dimensional shapes such as triangles, quadrilaterals and polygons (7.GM.6a)

___ Understand that volume applies to three dimensional shapes such as cubes, right rectangular prisms and right triangular prisms (7.GM.6b)

___ Decompose cubes, right rectangular prisms and right triangular prisms to derive the formulas for volume and surface area (7.GM.6c)

___ Solve real world and mathematical problems using (7.GM.6d)

- Area
- Volume
- Surface area

Data Analysis, Statistics and Probability

___ Understand that a sampling is a subset of a population and both must possess the same characteristics (7.DSP.1a)

___ Differentiate between a random sampling and non – random sampling (7.DSP.1b)

___ Understand that generalizations about a sample are only valid if the sample is a representative of the population (7.DSP1c)

___ Understand that random sampling is used to gather a representative sample and supports valid inferences about the population (7.DSP.1d)

___ Draw inferences from multiple random samples of the same size that investigate a characteristic of interest (7.DSP.2)

___ Create the following displays for data (7.DSP.3)

- Dot plot
- Histogram
- Box plot

* I think that students need to make these before they can interpret and compare them ☺

___ Visually compare the following measures for two sets of data that are displayed graphically as either a dot plot, histogram or box plot; graphed on the same scale; draw inferences about the population (7.DSP.3)

- Mean
- Median
- Mode

Data Analysis, Statistics and Probability cont'd

- d. Range
- e. Interquartile range
- f. Mean absolute deviation
- g. Overlap

___ Compare the following measures for two sets of data that are displayed in numerical form; draw inferences about population (7.DSP.4)

- a. Mean
- b. Median
- c. Mode
- d. Range
- e. Interquartile range
- f. Mean absolute deviation
- g. Overlap

___ Determine the probability of simple events (7.DSP.5a)

___ Understand that probability is the likelihood of an event occurring (7.DSP.5b)

___ Understand that the probability of an event is between 0 and 1 (7.DSP.5c)

___ Understand that if the probability of an event is close to 1 then it is a likely event (7.DSP.5d)

___ Understand that if the probability of an event is close to $\frac{1}{2}$ then the event is neither likely nor unlikely (7.DSP.5e)

___ Understand that if the probability of an event is close to 0 then the event is unlikely (7.DSP.5f)

___ Determine approximate outcomes using theoretical probability (7.DSP.6a)

___ Perform experiments that model theoretical probability; interpret data from theoretical experiments (7.DSP.6b)

___ Compare theoretical and experimental probability (7.DSP.6c)

___ Differentiate between uniform and non – uniform probability models (7.DSP.7a)

___ Develop uniform probability models (7.DSP.7b)

___ Develop non – uniform probability models (7.DSP.7b)

___ Perform experiment to test the validity of probability models (7.DSP.7c)

___ Understand that the probability of a compound event is between 0 and 1 (7.DSP.8a)

___ Identify the outcomes of a compound event that is presented as a (7.DSP.8b)

- a. Organized list
- b. Table
- c. Tree diagram

___ Determine probabilities of compound event that is presented as a (7.DSP.8c)

- a. Organized list
- b. Table
- c. Tree diagram

___ Design and use a simulation to collect data and determine probabilities (7.DSP.8d)

___ Compare the theoretical and experimental probability for compound events (7.DSP.8e)