2023-2024
Jackson County Schools
7th Grade Mathematics Pacing Guide

1st Quarter

Number Systems & Operations

*Focus Standard 7.4 - Add/Subtract Integers Using the Number Line [Proficiency Scale](#)

[7.NS.1.]Apply and extend knowledge of operations of whole numbers, fractions, and decimals to add, subtract, multiply, and divide rational numbers including integers, signed fractions, and decimals.

> **Standard 7.4a - Additive Inverses**
> Identify and explain situations where the sum of opposite quantities is 0 and opposite quantities are defined as additive inverses. [7.NS.1.a]
> **Standard 7.4b - Number line**
> Interpret the sum of two or more rational numbers, by using a number line and in real-world contexts. [7.NS.1.b]
> **Standard 7.4c - Additive Inverses**
> Explain subtraction of rational numbers as addition of additive inverses. [7.NS.1.c]

*Focus Standard 7.4 - Multiply/Divide Integers [Proficiency Scale](#)

> **Standard 7.4e.**
> Extend strategies of multiplication to rational numbers to develop rules for multiplying signed numbers, showing that the properties of the operations are preserved.
> **Standard 7.4f.**
> Divide integers and explain that division by zero is undefined. Interpret the quotient of integers (with a nonzero divisor) as a rational number.
> **Standard 7.4g**.
> Convert a rational number to a decimal using long division, explaining that the decimal form of a rational number terminates or eventually repeats.

*Focus Standard 7.5 - Real World Applications [Proficiency Scale](#)

Solve real-world and mathematical problems involving the four operations of rational numbers, including complex fractions. Apply properties of operations as strategies where applicable. [7.NS.3]

2nd Quarter

Expressions/Algebra & Functions

*Focus Standard 7.6 - Combining Like Terms, Distributive Property, and Factoring

Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.[7.EE.1]

*Focus Standard 7.7 - Rewriting Expressions [Proficiency Scale (6/7)](#)

Generate expressions in equivalent forms based on context and explain how the quantities are related. [7.EE.2]

*Focus Standard 7.8 - Assessing Reasonableness of Answers

Solve multi-step real-world and mathematical problems involving rational numbers (integers, signed fractions and decimals), converting between forms as needed. Assess the reasonableness of answers using mental computation and estimation strategies. [7.EE.3]

*Focus Standard 7.9 - Writing Equations/Inequalities

Use variables to represent quantities in real-world or mathematical problems and construct algebraic expressions, equations, and inequalities to solve problems by reasoning about the quantities. [7.EE.4]

> **Standard 7.9a - Solving Equations [Proficiency Scale (8/9.a)](#)**
> Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. [7.EE.4.a]
> **Standard 7.9b - Solving Inequalities**

Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality, and interpret it in the context of the problem. [7.EE. 4.b.]

3rd Quarter

Proportional Reasoning

*Focus Standard 7.1 - Unit Rates [Proficiency Scale](#)
Calculate unit rates of length, area, and other quantities measured in like or different units that include ratios or fractions. [7.RP.1]

*Focus Standard 7.2 - Proportional Relationships with Percents [Proficiency Scale](#)
Represent a relationship between two quantities and determine whether the two quantities are related proportionally. [7.RP.2]
> **Standard 7.2a - Identifying Proportional Relationships**
> Use equivalent ratios displayed in a table or in a graph of the relationship in the coordinate plane to determine whether a relationship between two quantities is proportional [7.RP.2.a]
> **Standard 7.2b - Identifying Unit Rates/Constants of Proportionality**
> Identify the constant of proportionality (unit rate) and express the proportional relationship using multiple representations including tables, graphs, equations, diagrams, and verbal descriptions. [7.RP.2.b]
> **Standard 7.2c - Describing Coordinate Points**
> Explain in context the meaning of a point (x,y) on the graph of a proportional relationship, with special attention to the points (0,0) and (1, r) where r is the unit rate. [7.RP.2.d]

*Focus Standard 7.3 - Proportional Relationships with Percents [Proficiency Scale](#)
Solve multi-step percent problems in context using proportional reasoning, including simple interest, tax, gratuities, commissions, fees, markups and markdowns, percent increase, and percent decrease. [7-RP3]

Geometry (before ACAP)

Standard 7.18 - Constructing Triangles [Proficiency Scale](#)
Construct geometric shapes (freehand, using a ruler and a protractor, and using technology), given a written description or measurement constraints with an emphasis on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. [7.G.2]

Standard 7.21 - Angles [Proficiency Scale](#)
Use facts about supplementary, complementary, vertical, and adjacent angles in multi-step problems to write and solve simple equations for an unknown angle in a figure. [7-G5]

Standard 7. 17 - Scale Drawings [Proficiency Scale](#)
Solve problems involving scale drawings of geometric figures, including computation of actual lengths and areas from a scale drawing and reproduction of a scale drawing at a different scale. [7.G.1]

4th Quarter

Probability

Standard 7.13 - Likelihood of events [Proficiency Scale](#)
Use a number from 0 to 1 to represent the probability of a chance event occurring, explaining that larger numbers indicate greater likelihood of the event occurring, while a number near zero indicates an unlikely event. [7-SP5]

Standard 7.14 - Making predictions
Define and develop a probability model, including models that may or may not be uniform, where uniform models assign equal probability to all outcomes and non-uniform models involve events that are not equally likely.
> **Standard 7.14a**
> Collect and use data to predict probabilities of events.
> **Standard 7.14b**
> Compare probabilities from a model to observed frequencies, explaining possible sources of discrepancy. [7-SP6]

Standard 7.15 - Theoretical/Experimental Probability [Proficiency Scale (14/15)](#)
Approximate the probability of an event using data generated by a simulation (experimental probability) and compare it to the theoretical probability. [7-SP7]

Standard 7.15a - Uniform Probability Models

Observe the relative frequency of an event over the long run, using simulation or technology, and use those results to predict approximate relative frequency [7-SP7a]

Standard 7.16 - Compound Events [Proficiency Scale](#)

Find probabilities of simple and compound events through experimentation or simulation and by analyzing the sample space, representing the probabilities as percents, decimals, or fractions.[7-SP8]

Standard 7.16a - Probability Using Sample Space

Represent sample spaces for compound events using methods such as organized lists, tables, and tree diagrams, and determine the probability of an event by finding the fraction of outcomes in the sample space for which the compound event occurred.[7-SP8a]

Standard 7.16b - Simulations

Design and use a simulation to generate frequencies for compound events [7-SP8b]

Standard 7.16c - Identifying Sample Space

Represent events described in everyday language in terms of outcomes in the sample space which composed the event. [7-SP8c]

Geometry (after ACAP)

Standard 7.22 - Volume/ Surface Area [Proficiency Scale](#)

Solve real-world and mathematical problems involving area, volume, and surface area of two- and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right rectangular prisms.[7-G6]

Standard 7.19 - Cross Sections [Proficiency Scale](#)

Describe the two-dimensional figures created by slicing three-dimensional figures into plane sections. [7-G.3]

Standard 7.20 - Circles [Proficiency Scale](#)

Explain the relationships among circumference, diameter, area, and radius of a circle to demonstrate understanding of formulas for the area and circumference of a circle. [7-G4]

Standard 7.20a

Informally derive the formula for area of a circle.

Standard 7.20b

Solve area and circumference problems in real-world and mathematical situations involving circles.

Data

Standard 7.10 - Population and Samples [Proficiency Scale](#)

Examine a sample of a population to generalize information about the population. [7-SP1]

Standard 7.10a

Differentiate between a sample and a population.

Standard 7.10b

Compare sampling techniques to determine whether a sample is random and thus representative of a population, explaining that random sampling tends to produce representative samples and support valid inferences.

Standard 7.10c - Conclusions

Determine whether conclusions and generalizations can be made about a population based on a sample.

Standard 7.10d

Use data from a random sample to draw inferences about a population with an unknown characteristic of interest, generating multiple samples to gauge variation and making predictions or conclusions about the population.

Standard 7.10e

Informally explain situations in which statistical bias may exist.

Standard 7.11 - Comparing Centers [Proficiency Scale](#)

Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability[7-SP3]

Standard 7.12 - Comparing Measures of Centers and Variations [Proficiency Scale](#)

Make informal comparative inferences about two populations using measures of center and variability and/or mean absolute deviation in context.[7-SP4]