

**7<sup>th</sup> Grade Mathematics**  
**Poudre School District**  
**Pacing Overview**

**Chapter 1: Integers**

19 Days

7.NS.A.1, 7.NS.A.1a, 7.NS.A.1b, 7.NS.A.1c, 7.NS.A.1d, 7.NS.A.2, 7.NS.A.2a, 7.NS.A.2b,  
7.NS.A.2c, 7.NS.A.3

**Chapter 2: Rational Numbers**

20 Days

7.NS.A.1a, 7.NS.A.1b, 7.NS.A.1c, 7.NS.A.1d\*,  
7.NS.A.2a, 7.NS.A.2b, 7.NS.A.2c\*, 7.NS.A.2d, 7.NS.A.3\*

**Chapter 3: Expressions and Equations**

22 Days

7.EE.A.1\*, 7.EE.A.2\*, 7.EE.B.4a

**Chapter 4: Inequalities**

14 Days

7.EE.B.4b\*

**Chapter 5: Ratios and Proportions**

17 Days

7.RP.A.1\*, 7.RP.A.2a, 7.RP.A.2b, 7.RP.A.2c, 7.RP.A.2d\*, 7.RP.A.3

**Chapter 6: Percents**

20 Days

7.RP.A.3\*, 7.EE.B.3\*

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## Poudre School District

### Chapter 8: Circles and Area

14 Days

7.G.B.4, 7.G.B.6

### Chapter 7: Constructions and Scale Drawings

19 Days

7.G.A.1\*, 7.G.A.2\*, 7.G.B.5\*

### Chapter 9: Surface Area and Volume

15 Days




7.G.A.3\*, 7.G.B.4\*, 7.G.B.6\*

### Chapter 10: Probability and Statistics

17 Days

7.SP.A.1\*, 7.SP.A.2\*, 7.SP.B.3\*, 7.SP.B.4\*, 7.SP.C.5\*, 7.SP.C.6\*,  
7.SP.C.7a, 7.SP.C.7b\*, 7.SP.C.8a, 7.SP.C.8b, 7.SP.C.8c\*

\* Teaching is complete. Standard can be assessed.

-  Major Work of the Grade.
-  Supporting Work of the Grade.
-  Additional Work of the Grade.

# 7<sup>th</sup> Grade Mathematics

## Poudre School District

Chapter 1: Integers	
20 Days	
7.NS.A.1, 7.NS.A.1a, 7.NS.A.1b, 7.NS.A.1c, 7.NS.A.1d, 7.NS.A.2, 7.NS.A.2a, 7.NS.A.2b, 7.NS.A.2c, 7.NS.A.3	

Chapter Summary					
Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Scavenger Hunt/ Chapter Opener			1 day	1 day
1.1	Activity 1.1			1 day	1 day
	Integers and Absolute Value	Preparing for	7.NS.A.1, 7.NS.A.2, 7.NS.A.3	1 day	
1.2	Activity 1.2			1 day	1 day
	Adding Integers	Learning	7.NS.A.1a, 7.NS.A.1b, 7.NS.A.1d, 7.NS.A.3	1 day	
1.3	Activity 1.3			1 day	1 day
	Subtracting Integers	Learning	7.NS.A.1c, 7.NS.A.1d, 7.NS.A.3	1 day	
1.4	Activity 1.4			1 day	1 day
	Multiplying Integers	Learning	7.NS.A.2a, 7.NS.A.2c, 7.NS.A.3	1 day	
1.5	Activity 1.5			1 day	1 day
	Dividing Integers	Learning	7.NS.A.2b, 7.NS.A.3	1 day	

Total: 11 days

*Note: Additional days reserved for review and assessment.*

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Additional Activities/Resources	
Name	Location

Vocabulary		
absolute value	additive inverse	additive inverse property
integers	opposites	

Standards	
<b>7.NS.A.1</b>	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
<b>7.NS.A.1a</b>	Describe situations in which opposite quantities combine to make 0. <i>For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</i>
<b>7.NS.A.1b</b>	Understand $p + q$ as the number located a distance $ q $ from $p$ , in the positive or negative direction depending on whether $q$ is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
<b>7.NS.A.1c</b>	Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$ . Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
<b>7.NS.A.1d</b>	Apply properties of operations as strategies to add and subtract rational numbers.
<b>7.NS.A.2</b>	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
<b>7.NS.A.2a</b>	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
<b>7.NS.A.2b</b>	Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If $p$ and $q$ are integers, then $-(p/q) = (-p)/q = p/(-q)$ . Interpret quotients of rational numbers by describing real-world contexts.
<b>7.NS.A.2c</b>	Apply properties of operations as strategies to multiply and divide rational numbers.
<b>7.NS.A.3</b>	Solve real-world and mathematical problems involving the four operations with rational numbers.

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### Chapter 2: Rational Numbers

20 Days

7.NS.A.1a, 7.NS.A.1b, 7.NS.A.1c, 7.NS.A.1d\*,  
7.NS.A.2a, 7.NS.A.2b, 7.NS.A.2c\*, 7.NS.A.2d, 7.NS.A.3\*

#### Chapter Summary

Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Chapter Opening			1 day	
2.1	Activity 2.1			1 day	1 day
	Rational Numbers	Learning	7.NS.A.2b, 7.NS.A.2d	1 day	
2.2	Activity 2.2			1 day	2 days
	Adding Rational Numbers	Learning	7.NS.A.1a, 7.NS.A.1b, 7.NS.A.1d, 7.NS.A.3	3 days	
2.3	Activity 2.3			1 day	1 day
	Subtracting Rational Numbers	Learning	7.NS.A.1c, 7.NS.A.1d*, 7.NS.A.3	2 days	
2.4	Activity 2.4			1 day	2 days
	Multiplying and Dividing Rational Numbers	Learning	7.NS.A.2a, 7.NS.A.2b, 7.NS.A.2c*, 7.NS.A.3*	3 days	

Total: 14 days

*Note: Additional days reserved for review and assessment.*

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Additional Activities/Resources	
Name	Location

Vocabulary		
rational number	repeating decimals	terminating decimal

Standards	
7.NS.A.1a	Describe situations in which opposite quantities combine to make 0. <i>For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</i>
7.NS.A.1b	Understand $p + q$ as the number located a distance $ q $ from $p$ , in the positive or negative direction depending on whether $q$ is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
7.NS.A.1c	Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$ . Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
7.NS.A.1d*	Apply properties of operations as strategies to add and subtract rational numbers.
7.NS.A.2a	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
7.NS.A.2b	Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If $p$ and $q$ are integers, then $-(p/q) = (-p)/q = p/(-q)$ . Interpret quotients of rational numbers by describing real-world contexts.
7.NS.A.2c*	Apply properties of operations as strategies to multiply and divide rational numbers.
7.NS.A.2d	Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
7.NS.A.3*	Solve real-world and mathematical problems involving the four operations with rational numbers.

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## Poudre School District

<b>Chapter 3: Expressions and Equations</b>
22 Days
7.EE.A.1*, 7.EE.A.2*, 7.EE.B.4a

Chapter Summary					
Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Chapter Opening			1 day	
3.1	Activity 3.1			1 day	1 day
	Algebraic Expressions	Learning	7.EE.A.1, 7.EE.A.2	2 days	
3.2	Activity 3.2			1 day	1 day
	Adding and Subtracting Linear Expressions	Learning	7.EE.A.1*, 7.EE.A.2*	1 day	
	Extension 3.2			1 day	
3.3	Activity 3.3			1 day	1 day
	Solving Equations Using Addition or Subtraction	Learning	7.EE.B.4a	2 days	
3.4	Activity 3.4			1 day	2 days
	Solving Equations Using Multiplication or Division	Learning	7.EE.B.4a	2 days	
3.5	Activity 3.5			1 day	3 days
	Solving Two-Step Equations	Learning	7.EE.B.4a	4 days	

Total: 18 days

*Note: Additional days reserved for review and assessment.*

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Additional Activities/Resources	
Name	Location

Vocabulary		
addition property of equality	division property of equality	equivalent equations
factoring an expression	like terms	linear expression
multiplication property of equality	simplest form (of an algebraic expression)	subtraction property of equality

Standards	
7.EE.A.1*	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
7.EE.A.2*	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. <i>For example, <math>a + 0.05a = 1.05a</math> means that "increase by 5%" is the same as "multiply by 1.05."</i>
7.EE.B.4a	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. <i>For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</i>



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<b>Chapter 4: Inequalities</b>
14 Days 7.EE.B.4b*

Chapter Summary					
Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Chapter Opening			1 day	
4.1	Activity 4.1			1 day	1 day
	Writing and Graphing Inequalities	Preparing for	7.EE.B.4b	2 days	
4.2	Activity 4.2			1 day	1 day
	Solving Inequalities Using Addition or Subtraction	Learning	7.EE.B.4b	1 day	
4.3	Activity 4.3			1 day	1 day
	Solving Inequalities Using Multiplication or Division	Learning	7.EE.B.4b	2 days	
4.4	Activity 4.4			1 day	2 days
	Solving Two-Step Inequalities	Learning	7.EE.B.4b*	2 days	

Total: 12 days

*Note: Additional days reserved for review and assessment.*

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Additional Activities/Resources	
Name	Location

Vocabulary		
addition property of inequality	division property of inequality	graph of an inequality
inequality	multiplication property of inequality	solution of an inequality
solution set	subtraction property of inequality	

Standards	
7.EE.B.4b*	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. <i>For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</i>

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### Chapter 5: Ratios and Proportions

17 Days

7.RP.A.1\*, 7.RP.A.2a, 7.RP.A.2b, 7.RP.A.2c, 7.RP.A.2d\*, 7.RP.A.3

#### Chapter Summary

Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Chapter Opening			1 day	
5.1	Activity 5.1			1 day	1 day
	Ratios and Rates	Learning	7.RP.A.1*, 7.RP.A.3	1 day	
5.2	Activity 5.2			1 day	1 day
	Proportions	Learning	7.RP.A.2a, 7.RP.A.2b, 7.RP.A.2d	1 day	
5.3	Activity 5.3			1 day	1 day
	Writing Proportions	Learning	7.RP.A.2c, 7.RP.A.3	1 day	
5.4	Activity 5.4			1 day	1 day
	Solving Proportions	Learning	7.RP.A.2b, 7.RP.A.2c	1 day	
<i>End Quarter 2</i>					
5.2	Extension 5.2			1 day	1 day
5.5	Activity 5.5			1 day	1 day
	Slope	Learning	7.RP.A.2b	1 day	
5.6	Activity 5.6			1 day	1 day
	Direct Variation	Learning	7.RP.A.2a, 7.RP.A.2b, 7.RP.A.2c, 7.RP.A.2d*	1 day	

Total: 14 days

*Note: Additional days reserved for review and assessment.*

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Additional Activities/Resources	
Name	Location

Vocabulary		
complex fraction	constant of proportionality	cross products
cross products property	direct variation	proportion
Proportional	rate	ratio
slope	unit rate	

Standards	
<b>7.RP.A.1*</b>	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. <i>For example, if a person walks <math>\frac{1}{2}</math> mile in each <math>\frac{1}{4}</math> hour, compute the unit rate as the complex fraction <math>\frac{1/2}{1/4}</math> miles per hour, equivalently 2 miles per hour.</i>
<b>7.RP.A.2a</b>	Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
<b>7.RP.A.2b</b>	Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
<b>7.RP.A.2c</b>	Represent proportional relationships by equations. <i>For example, if total cost <math>t</math> is proportional to the number <math>n</math> of items purchased at a constant price <math>p</math>, the relationship between the total cost and the number of items can be expressed as <math>t = pn</math>.</i>
<b>7.RP.A.2d*</b>	Explain what a point $(x, y)$ on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where $r$ is the unit rate.
<b>7.RP.A.3</b>	Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

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<b>Chapter 6: Percents</b>
20 Days 7.RP.A.3*, 7.EE.B.3*

Chapter Summary					
Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Chapter Opening			1 day	
6.1	Activity 6.1			1 day	
	Percents and Decimals	Learning	7.EE.B.3	1 day	
6.2	Activity 6.2			1 day	1 day
	Comparing and Ordering Fractions, Decimals and Percents	Learning	7.EE.B.3	1 day	
6.3	Activity 6.3			1 day	1 day
	The Percent Proportion	Learning	7.RP.A.3	1 day	
6.4	Activity 6.4			1 day	1 day
	The Percent Equation	Learning	7.RP.A.3, 7.EE.B.3*	1 day	
6.5	Activity 6.5			1 day	2 days
	Percents of Increase and Decrease	Learning	7.RP.A.3	1 day	
6.6	Activity 6.6			1 day	1 day
	Discounts and Markups	Learning	7.RP.A.3	1 day	
6.7	Activity 6.7			1 day	1 day
	Simple Interest	Learning	7.RP.A.3*	1 day	

Total: 15 days

*Note: Additional days reserved for review and assessment.*

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Additional Activities/Resources	
Name	Location

Vocabulary		
discount	interest	markup
percent of change	percent of decrease	percent error
percent increase	principal	simple interest

Standards	
7.RP.A.3*	Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.
7.EE.B.3*	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. <i>For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</i>

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<b>Chapter 8: Circles and Area</b>
14 Days
7.G.B.4, 7.G.B.6

Chapter Summary					
Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Chapter Opening			1 day	
8.1	Activity 8.1			1 day	1 day
	Circles and Circumference	Learning	7.G.B.4	1 day	
8.2	Activity 8.2			1 day	1 day
	Perimeters of Composite Figures	Applying	7.G.B.4	1 day	
8.3	Activity 8.3			1 day	1 day
	Area of Circles	Learning	7.G.B.4	1 day	
8.4	Activity 8.4			1 day	2 days
	Areas of Composite Figures	Learning	7.G.B.6	2 days	

Total: 10 days

*Note: Additional days reserved for review and assessment.*

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Additional Activities/Resources	
Name	Location

Vocabulary		
center (of a circle)	circle	circumference
composite figure	diameter (of a circle)	pi
radius (of a circle)	semicircle	

Standards	
<b>7.G.B.4</b>	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
<b>7.G.B.6</b>	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 prisms.



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### Chapter 7: Constructions and Scale Drawings

19 Days

7.G.A.1\*, 7.G.A.2\*, 7.G.B.5\*

#### Chapter Summary

Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Chapter Opening			1 day	
7.1	Activity 7.1			1 day	1 day
	Adjacent and Vertical Angles	Learning	7.G.B.5	1 day	
7.2	Activity 7.2			1 day	1 day
	Complementary and Supplementary Angles	Learning	7.G.B.5	1 day	
7.3	Activity 7.3			2 days	2 days
	Triangles	Learning	7.G.A.2, 7.G.B.5*	1 day	
	Extension 7.3			1 day	1 day
7.4	Activity 7.4			2 days	2 days
	Quadrilaterals	Learning	7.G.A.2*	1 day	
7.5	Activity 7.5			1 day	1 day
	Scale Drawings	Learning	7.G.A.1*	1 day	

Total: 14 days

*Note: Additional days reserved for review and assessment.*

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Additional Activities/Resources	
Name	Location

Vocabulary		
adjacent angles	complementary angles	congruent angles
congruent sides	kite	scale
scale drawing	scale factor (of a scale drawing)	scale model
supplementary angles	vertical angles	

Standards	
<b>7.G.A.1*</b>	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
<b>7.G.A.2*</b>	Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus 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.
<b>7.G.B.5*</b>	Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

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## Poudre School District

### Chapter 9: Surface Area and Volume

15 Days

7.G.A.3\*, 7.G.B.4\*, 7.G.B.6\*

#### Chapter Summary

Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Chapter Opening			1 day	
9.1	Activity 9.1			1 day	1 day
	Surface Area of Prisms	Learning	7.G.B.6	1 day	
9.2	Activity 9.2			2 days	1 day
	Surface Area of Pyramids	Learning	7.G.B.6	1 day	
9.3	Activity 9.3			1 day	1 day
	Surface Area of Cylinders	Applying	7.G.B.4*	1 day	
9.4	Activity 9.4			1 day	1 day
	Volumes of Prisms	Learning	7.G.B.6	1 day	
9.5	Activity 9.5			1 day	1 day
	Volumes of Pyramids	Learning	7.G.A.3*, 7.G.B.6*	1 day	
	Extension 9.5			1 day	1 day

Total: 13 days

*Note: Additional days reserved for review and assessment.*

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Additional Activities/Resources	
Name	Location

Vocabulary		
cross section	lateral surface area (of a prism)	regular pyramid
slant height (of a pyramid)		

Standards	
<b>7.G.A.3*</b>	Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
<b>7.G.B.4*</b>	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
<b>7.G.B.6*</b>	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 prisms.

## 7<sup>th</sup> Grade Mathematics Poudre School District

### Chapter 10: Probability and Statistics

17 Days

7.SP.A.1\*, 7.SP.A.2\*, 7.SP.B.3\*, 7.SP.B.4\*, 7.SP.C.5\*, 7.SP.C.6\*,  
7.SP.C.7a, 7.SP.C.7b\*, 7.SP.C.8a, 7.SP.C.8b, 7.SP.C.8c\*

Chapter Summary					
Section	Title	Level of Learning	Standard(s)	Pacing (every/every other)	
	Chapter Opening			1 day	
10.1	Activity 10.1			1 day	1 day
	Outcomes and Events	Preparing for	7.SP.C.5		
10.2	Activity 10.2			2 days	
	Probability	Learning	7.SP.C.5, 7.SP.C.7a		
10.3	Activity 10.3			3 days	2 days
	Experimental and Theoretical Probability	Learning	7.SP.C.5*, 7.SP.C.6*, 7.SP.C.7a, 7.SP.C.7b*		
10.4	Activity 10.4			1 day	
	Compound Events	Learning	7.SP.C.8a, 7.SP.C.8b		
10.5	Activity 10.5			1 day	1 day
	Independent and Dependent Events	Learning	7.SP.C.8a, 7.SP.C.8b, 7.SP.C.8c*		
	Extension 10.5				
10.6	Activity 10.6			2 days	2 days
	Samples and Populations	Learning	7.SP.A.1*, 7.SP.A.2*		
	Extension 10.6				
10.7	Activity 10.7			2 days	
	Comparing Populations	Learning	7.SP.B.3*, 7.SP.B.4*		

Total: 13 days

*Note: Additional days reserved for review and assessment.*

## 7<sup>th</sup> Grade Mathematics Poudre School District

Additional Activities/Resources	
Name	Location

Vocabulary		
biased sample	compound event	dependent events
event	experiment	experimental probability
favorable outcomes	Fundamental Counting Principle	independent events
outcomes	population	probability
relative frequency	sample	sample space
simulation	theoretical probability	unbiased sample

Standards	
7.SP.A.1*	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
7.SP.A.2*	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. <i>For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.</i>
7.SP.B.3*	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. <i>For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.</i>
7.SP.B.4*	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. <i>For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.</i>

**7<sup>th</sup> Grade Mathematics**  
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**Standards (continued)**

7.SP.C.5*	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
7.SP.C.6*	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. <i>For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.</i>
7.SP.C.7a	Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. <i>For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.</i>
7.SP.C.7b*	Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. <i>For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?</i>
7.SP.C.8a	Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
7.SP.C.8b	Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.
7.SP.C.8c*	Design and use a simulation to generate frequencies for compound events. <i>For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?</i>