

6th Grade Math
PISD Curriculum: Year at a Glance

Bundle	Title	
	Big Ideas/Enduring Understandings	Guiding Questions
1	Statistics	
	Information can be analyzed and interpreted from different forms to make informed decisions.	<ol style="list-style-type: none"> How do you select an appropriate graph for a given set of data? How are the measures of central tendencies impacted by changes to a given set of data?
2	Statistics Continued, and Numbers and Operations	
	Number sense can be strengthened through the study of properties of whole numbers such as prime factorizations and factors and multiples.	<ol style="list-style-type: none"> How do prime and composite numbers relate to factors and multiples? How can properties of whole numbers, such as greatest common factors, be used to develop strategies that give you a distinct advantage in real life situations?
3	Prime Numbers, Order of Ops, GCF, LCM	
	Number sense can be strengthened through the study of properties of whole numbers such as prime factorizations and factors and multiples.	<ol style="list-style-type: none"> How can any whole number be expressed as the product of prime numbers? How can factors and multiples be used to solve problems in everyday life? How can a conjecture strengthen conversation and understanding about mathematical ideas?
	The result of a series of operations is impacted by the order in which the operations are performed. There is a conventional order of operations that produces a standard outcome for a given expression.	<ol style="list-style-type: none"> Why do we need a conventional order of operations? What is a good way to remember our convention for order of operations?
4	Fraction Concepts	
	The value of a fraction is dependent upon the size of the whole.	<ol style="list-style-type: none"> What are the different ways to model a fraction in relation to a real life situation? Describe the properties of a fraction and how they relate to a given situation. (money, food, sports, etc) How can equivalent forms of a fractional value be generated?
	Benchmark fractions provide opportunities to estimate size, determine value, and compare and order fractions.	<ol style="list-style-type: none"> How can benchmarks be used to compare values of given fractions? What does the relationship between the numerator and denominator tell you about the value of a fraction in comparison to a benchmark fraction?
5	Fractions and Decimals, and Percents	
	Part-whole relationships can be expressed in equivalent fraction, decimal, and percent forms.	<ol style="list-style-type: none"> Describe how area (tenths, hundredths, thousandths, etc.) and number line models can be used to express decimal values. How can fractional benchmarks be used to determine the approximate value of a decimal or a percent? How does decimal place value (tenths, hundredths, etc...) connect to equivalent fractions and percents? Describe the ways in which you can express values greater than 1 whole. How do you decide which form of a rational number is best to use in a situation?
	Numerical data in the form of rational numbers can be graphed on a number line and/or on a coordinate plane.	<ol style="list-style-type: none"> How is graphing an ordered pair of rational numbers similar or different than graphing an ordered pair of whole numbers? How does the size of the unit on the scale of a graph help to determine placement of data points?
6	Ratios, Proportions, and Probability	
	Various forms of ratios can describe part to part and part to whole relationships.	<ol style="list-style-type: none"> Describe a situation in which equivalent ratios can be used to express a proportional relationship. Describe how a ratio can be used to make predictions. (probability).

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6	Theoretical probability is found by analyzing a situation and predicting outcomes and experimental probability is found as the result of an experiment.	<ol style="list-style-type: none"> Are experimental and theoretical probabilities always equivalent? How are theoretical and experimental probabilities alike and different?
	Theoretical probabilities can be analyzed by constructing sample spaces and experimental probabilities can be analyzed by collecting experimental data.	<ol style="list-style-type: none"> How can you determine all possible outcomes of an event? How do you determine the probability of an event and its complement?
<i>Adding and Subtracting Fractions</i>		
7	Combining fractions requires that each addend be broken into the same size pieces, which is indicated by common denominators.	<ol style="list-style-type: none"> What role does renaming fractions play in adding and subtracting? Justify these changes.
	Combining fractions can always be modeled visually, but an algorithm may be a more efficient tool.	<ol style="list-style-type: none"> Give an example of a situation, where you would prefer to us a model rather than an algorithm? and vice versa? $\frac{1}{4} + \frac{1}{2}$ does not equal $\frac{2}{6}$. Justify using a model, algorithm, or verbal description.
<i>Addition and Subtraction with Decimals and Fractions and Geometry</i>		
8	Strategies for adding and subtracting decimals are related to adding and subtracting fractions with powers of ten in the denominator.	<ol style="list-style-type: none"> The following is a student's response to an addition problem: $13 + .64 = .77$ What error was made by the student? Describe the thinking that occurred and what steps could be taken to correct it?
	Geometric figures are classified by their attributes.	<ol style="list-style-type: none"> In what ways can a triangle be classified based on the combination of the sides and angles? What is a set of possible angle measures for an obtuse-isosceles triangle? What is a set of possible angle measures for a parallelogram that is not a rectangle?
<i>Measurement</i>		
9	Perimeter is the number of linear units needed to surround a two-dimensional shape, and area is the number of square units needed to cover a two dimensional surface/shape.	<ol style="list-style-type: none"> Suppose you're remodeling a room and need to purchase carpeting, molding, and paint. How will perimeter and area help to determine the amount of carpet, molding and paint needed?
	Formulas can be used to calculate perimeter, circumference, and area of two-dimensional shapes.	<ol style="list-style-type: none"> Given a rectangle with an area of 48 square units, what are all possible whole number dimensions? What is the corresponding perimeter for each rectangle? Given a rectangle with a perimeter of 48 units, what are the possible dimensions along with its corresponding area.
	Pi represents the constant relationship between the circumference and the diameter of all circles.	<ol style="list-style-type: none"> If you know the distance a tire travels in one revolution, how can you find the radius of the tire?
<i>Algebraic Reasoning and Integers</i>		
10	In an algebraic relationship one quantity changes in relation to another and can be described using words, symbols, numbers, tables, and graphs.	<ol style="list-style-type: none"> Given a rule, generate a table for five corresponding input and output values, and vice versa. Given any metric or customary unit conversion, generate a table of values and graph the data.
<i>TAKS Review, TAKS, Multiplying Fractions</i>		
11	Multiplication does not always result in a larger quantity.	<ol style="list-style-type: none"> Does multiplication always result in a product larger than either factor? Explain. How can an area model be used to show the product of two fractions?
<i>Multiply and Divide Fractions and Decimals</i>		
12	Multiplication does not always result in a larger quantity and division does not always result in a smaller quantity.	<ol style="list-style-type: none"> Does multiplication always result in a product larger than either factor? Explain. Does division always result in a quotient that is smaller than the dividend and divisor? Explain.