Creve Coeur School District 76   Mathematics

Grade 3

Mathematical Practices

Students will be able to demonstrate the following practices at the cognitive level of this grade:

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and express regularity in repeated reasoning.*

Operations and Algebraic Thinking

Content	District Code	Essential Skill	Instructional Mastery 1	2	3	4
Basic Operations Multiplication and Division ILS10 3.OA.1 ILS10 3.OA.2 ILS10 3.OA.3 ILS10 3.OA.4	3.OA.1	Find the product of multiple groups of objects.		M		
	3.OA.2	Interpret products of whole numbers as a total number of objects in a number of groups.		M		
	3.OA.3	Explain what the numbers in a division problem represent.		M		
	3.OA.4	Explain what division means and how it relates to equal shares.		M		
	3.OA.5	Interpret quotients as the number of shares or the number of groups when a set of objects is divided equally.		M		
	3.OA.6	Multiply and divide within 100.		I		M
	3.OA.7	Solve word problems in situations involving equal groups, arrays, and measurement quantities.		I	M	
	3.OA.8	Represent a word problem using a picture, an equation with a symbol for the unknown number, or in other ways.	I		M	
	3.OA.9	Determine which operation (multiplication or division) is needed to determine the unknown whole number.			M	
	3.OA.10	Solve to find the unknown whole number in a multiplication or division equation.			M	
	3.OA.11	Explain how the properties of operations work.	I		M	
	3.OA.12	Apply properties of operations as strategies to multiply and divide.			M	
	3.OA.13	Identify the multiplication problem related to the division problem.		M		
	3.OA.14	Identify the unknown factor in the related multiplication problem.		I	M	
	3.OA.15	Use multiplication to solve division problems.		I	M	
	3.OA.16	Recognize multiplication and division as related operations and explain how they are related.		M		
Multiplication and Division (within 100) ILS10 3.OA.7	3.OA.17	Recall from memory all products of two one-digit numbers.		I	M	
	3.OA.18	Analyze a multiplication or division problem in order to choose an appropriate strategy to fluently multiply or divide within 100.			M	
Word Problems Four Operations ILS10 3.OA.8	3.OA.19	Recall the order of operations			M	
	3.OA.20	Explain strategies for estimating.			M	
	3.OA.21	Construct an equation with a letter standing for the unknown quantity.			M	
	3.OA.22	Solve two-step word problems using the four operations.			M	
	3.OA.23	Justify your answer using various estimation strategies.			M	
	3.OA.24	Identify arithmetic patterns (such as even and odd numbers, patterns in an addition table, patterns in a multiplication table, patterns regarding multiples and sums).			M	
	3.OA.25	Explain rules for a pattern using properties of operations.			M	
	3.OA.26	Explain relationships between the numbers in a pattern.			M	
Place Value and Properties of Operations ILS10 3.NBT.1 ILS10 3.NBT.2 ILS10 3.NBT.3	3.NBT.1	Define "round or rounding" in relation to place value.	M			
	3.NBT.2	Round a whole number to the nearest ten within 1000.	M			
	3.NBT.3	Round a whole number to the nearest 100 within 1000.	M			
	3.NBT.4	Relate strategies and algorithms for adding and subtracting within 1000.	M			
	3.NBT.5	Fluently add and subtract within 1000.	M			
	3.NBT.6	Use strategies to multiply one-digit numbers by multiples of ten (up to ninety).		M		

Note: Instructional Mastery indicates the quarter in which students are expected to have mastered the skill.

Content	District Code	Essential Skills	Instructional Mastery			
			1	2	3	4
	3.NBT.7	Apply knowledge of place value to multiply one-digit whole numbers by multiples of ten in the range 10-90.		M		
Fractions Quantity ILS10 3.NF.1	3.NF.1	Recognize a unit fraction such as 1/4 as the quantity formed when the whole is partitioned into four equal parts.			M	
	3.NF.2	Identify a fraction such as 2/3 and explain that the quantity formed is two equal parts of the whole partitioned into three equal parts (1/3 and 1/3 of the whole 3/3).			M	
	3.NF.3	Express a fraction as the number of unit fractions.			M	
	3.NF.4	Use accumulated unit fractions to represent numbers equal to, less than and greater than one (1/3 and 1/3 is 2/3; 1/3, 1/3, 1/3, and 1/3 is 4/3).			M	
Fractions Number Line ILS10 3.NF.2	3.NF.5	Define the interval from zero to one on a number line as the whole.			M	
	3.NF.6	Divide a whole on a number line into equal parts.			M	
	3.NF.7	Recognize that the equal parts between zero and one have a fractional representation.			M	
	3.NF.8	Represent each equal part on a number line with a fraction.			M	
	3.NF.9	Explain that the end of each equal part is represented by a fraction (1/the number of equal parts).			M	
	3.NF.10	Explain that the endpoint of each equal part represents the total number of equal parts.			M	
Fractions Equivalence ILS10 3.NF.3	3.NF.11	Describe equivalent fractions.			M	
	3.NF.12	Recognize simple equivalent fractions.			M	
	3.NF.13	Compare fractions by reasoning about their size to determine equivalence.			M	
	3.NF.14	Use number lines, size, visual fraction models, etc. to find equivalent fractions.			M	
	3.NF.15	Recognize whole numbers written in fractional parts on a number line.			M	
	3.NF.16	Recognize the difference in a whole number and a fraction.			M	
	3.NF.17	Explain how a fraction is equivalent to a whole number.			M	
	3.NF.18	Explain what the numerator in a fraction represents and its location.			M	
	3.NF.19	Explain what the denominator in a fraction represents and its location.			M	
	3.NF.20	Recognize whether fractions refer to the same whole.			M	
	3.NF.21	Determine if comparisons of fractions can be made (if the refer to the same whole).			M	
	3.NF.22	Compare two fractions with the same numerator by reasoning their size.			M	
	3.NF.23	Compare two fractions with the same denominator by reasoning their size.			M	
	3.NF.24	Record the results of comparisons using symbols >, =, or <.			M	
	3.NF.25	Justify conclusions about the equivalence of fractions.			M	
Problem Solving Time ILS10 3.MD.1	3.MD.1	Recognize minute marks on analog clock face and minute position on digital clock face.				M
	3.MD.2	Write time to the minute.				M
	3.MD.3	Tell time to the minute.				M
	3.MD.4	Compare an analog clock face with a number line diagram.				M
	3.MD.5	Use a number line diagram to add and subtract time intervals in minutes.				M
	3.MD.6	Solve word problems involving addition and subtraction of time intervals in minutes.				M
Problem Solving Liquid Volumes and Masses ILS10 3.MD.2	3.MD.7	Explain how to measure liquid volume in liters.				M
	3.MD.8	Explain how to measure mass in grams and kilograms.				M
	3.MD.9	Add, subtract, multiply and divide units of liters, grams, and kilograms.				M
	3.MD.10	Identify various strategies to represent a word problem involving liquid volume or mass.				M
	3.MD.11	Solve one step word problems involving masses given in the same units.				M
	3.MD.12	Solve one step word problems involving liquid volume given in the same units.				M
	3.MD.13	Measure liquid volumes using standard units of liters.				M
	3.MD.14	Measure mass objects using standard units of grams (g), and kilograms (kg).				M
Scaled Bar Graphs ILS10 3.MD.3	3.MD.15	Explain the scale of a graph with a scale greater than one.	M			
	3.MD.16	Identify the scale of a graph with a scale greater than one.	M			
	3.MD.17	Analyze a graph with a scale greater than one.	M			

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	3.MD.18	Choose a proper scale for a bar graph or picture graph.	M			
	3.MD.19	Interpret a bar/picture graph to solve one or two step problems asking "how many more" and "how many less".	M			
	3.MD.20	Create a scaled picture graph to show data.	M			
	3.MD.21	Create a scaled bar graph to show data.	M			
Measurement Data Line Plot *ILS10 3.MD.4*	3.MD.22	Define horizontal axis.	I	M		
	3.MD.23	Identify each plot on the line as data or a number of objects.	I	M		
	3.MD.24	Analyze data from a line plot.	I	M		
	3.MD.25	Determine appropriate unit of measurement.	I	M		
	3.MD.26	Determine appropriate scale for line plot.	I	M		
	3.MD.27	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.	I			M
	3.MD.28	Create a line plot where the horizontal scale is marked off in appropriate units- whole numbers, halves, or quarters.	I			M
Geometric Measurement Area *ILS10 3.MD.5* *ILS10 3.MD.6* *ILS10 3.MD.7*	3.MD.29	Define "unit square".		M		
	3.MD.30	Define "area".		M		
	3.MD.31	Relate the number (n) of unit squares to the area of a plane figure.		M		
	3.MD.32	Cover the area of a plane figure wit unit squares without gaps or overlaps.		M		
	3.MD.33	Measure areas by counting unit squares.		M		
	3.MD.34	Use unit squares of cm, m, in, ft, and other sizes of unit squares to measure area.		M		
	3.MD.35	Find the area of a rectangle by tiling it in unit squares.		M		
	3.MD.36	Find the side lengths of a rectangle in units.		M		
	3.MD.37	Compare the area found by tiling a rectangle to the area found by multiplying the side lengths.		M		
	3.MD.38	Multiply side lengths to find areas of rectangles.		M		
	3.MD.39	Solve real world and mathematical area problems by multiplying side lengths of rectangles.		M		
	3.MD.40	Use rectangular arrays to represent whole-number products in multiplication problems.		M		
	3.MD.41	Multiply using an area model (array).		M		
	3.MD.42	Relate area of a rectangle to multiplication and addition by modeling the distributive property.		M		
	3.MD.43	Area of rectangle 3 x (5+2) = 3 x 5 + 3 x 2.		M		
	3.MD.44	Find areas of rectangles.		M		
	3.MD.45	Add areas of rectangles.		M		
	3.MD.46	Recognize that areas of each rectangle in a rectilinear (straight line) figure can be added together to find the area of the figure.			M	
	3.MD.47	Use the technique of decomposing rectilinear figures to find the area of each rectangle to solve real world problems.			M	
	3.MD.48	Decompose rectilinear figures into non-overlapping rectangles.			M	
Geometric Measurement Perimeter. *ILS10 3.MD.8*	3.MD.49	Define polygon.	I		M	
	3.MD.50	Define perimeter.	I		M	
	3.MD.51	Find the perimeter when given the length of sides.	I		M	
	3.MD.52	Find the perimeter when there is an unknown side length.	I	M		
	3.MD.53	Exhibit (design, create, draw, model, etc.) rectangles with the same perimeter and different areas.			M	
	3.MD.54	Exhibit rectangles with the same area.			M	
Shapes and Their Attributes *ILS10 3.G.1*	3.G.1	Identify and define rhombuses, rectangles, and squares as examples of quadrilaterals based on their attributes.			M	
	3.G.2	Describe, analyze, and compare properties of two-dimensional shapes.			M	
	3.G.3	Compare and classify shapes by attributes, sides, and angles.			M	
	3.G.4	Group shapes with shared attributes to define a larger category (e.g., quadrilaterals).			M	
	3.G.5	Draw examples of quadrilaterals that do and do not belong to any subcategories.			M	
Shapes &Attributes Area. *ILS10 3.G.2*	3.G.6	Recognize that shapes can be partitioned into equal areas.			M	
	3.G.7	Describe the area of each part as a fractional part of the whole.			M	

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