4th Grade Math Curriculum Bundle # 9

Title	Suggested Dates
Graphing, Probability, and Geometry	February 22 – March 12 (15 days)

Big Idea/Enduring Understanding	Guiding Questions
Relationships between geometric figures can be described and compared. Questions can be answered by collecting, representing, and analyzing data.	What angles are formed by each set of lines? Can lines be both intersecting and perpendicular? How do you differentiate between angles? What are ways collected data can be represented? What strategies will help you determine all possible combinations in a problem situation?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above) **Teachers will use Math Investigations as the main instructional resource.** District resources are listed and categorized to indicate suggested uses. Any additional resources must be aligned with the TEKS.	
4.13 The student solves problems by collecting, organizing, displaying, and interpreting sets of data. 4.13A Use concrete objects or pictures to make generalizations about determining all possible combinations of a given set of data or of objects in a problem situation.	Including but not limited to: • use hands-on experiences with concrete objects or pictures creating all possible combinations • pictorially represent all possible combinations • determine strategies to help determine all possible combinations in a problem situation (example: tree diagram) • demonstrate various methods of organizing all possible combinations • compare favorable outcome such as four heads out of six tosses of the coin	**Math Investigations** Describing the Shape of the Data Unit 2 Investigations 1 Sessions 1 – 2 pages 22 – 35 Describing the Shape of the Data Unit 2 Investigations 2 Sessions 1 – 4 pages 56 – 74 Describing the Shape of the Data Unit 2	**Whole Groups Lessons** Envisions Topic 1 lesson 7 **Small Group Lessons/Centers** Kamico That Suits Me Just Fine Pages 442 – 450 Navigating through Data Analysis and Probability Spin City Pages 73 – 78 Is It Fair Pages 79 – 82

		Investigations 3 Sessions 1 – 4 pages 94 – 116	TEXTEAMS Name Game Graph Number Fun Paper Cup Toss Jack, Queen, King Making Friends Paper Cup Toss Two Dice Sums Additional Probability Lessons: on 4th grade web page
4.13 The student solves problems by collecting, organizing, displaying, and interpreting sets of data. 4.13B Interpret bar graphs.	Including but not limited to: • read and interpret all parts of vertical and horizontal bar and double bar graphs (labels, keys, data) • interpret and analyze graphs by combining given information in graphs to solve problems • create and correctly label bar graphs		**Small Group Lessons/Centers** AIRR Interpreting Graphs #174 Making Bar Graphs #175 Reading Bar Graphs #176 Analyzing the Graphs #177 Fill Me In #178 Kamico What Do the Polls Show? Pages 451 – 460 Navigating through Data Analysis and Probability What's My Method Pages 17 – 20 The Foot, the Whole Foot Pages 47 – 50 Technology Resources (District Provided Resource) Graph Club

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4.15 The student communicates about Grade 4 mathematics using informal language. 4.15A Explain and record observations using objects, words, pictures, numbers, and technology.	Including but not limited to: • Process skill to be addressed with relevant content.		**Whole Groups Lessons** Envisions Topic 10 Lesson 6
4.8 The student identifies and describes attributes of geometric figures using formal and geometric language. 4.8A Identify and describe right, acute, and obtuse angles.	Including but not limited to: • identify and describe right, acute, and obtuse angles using concrete objects such as straws, pattern blocks, pipe cleaners, corner of paper, etc o right angle measures 90°, created by perpendicular lines o acute angle measures between 0 and 90 o obtuse angle measures between 90°and 180 • degree symbol (ex: 90°) • identify angles according to labels (ex: angle A or angle 2)	**Math Investigations** Size, Shape and Symmetry Unit 4 Investigations 3 Sessions 1 – 2 pages 88 - 101	**Whole Groups Lessons** Envisions Topic 14 Lesson 2 **Small Group Lessons/Centers** Kamico Angles, Angles, Everywhere Pages 183 – 188
4.8 The student identifies and describes attributes of geometric figures using formal and geometric language. 4.8B Identify and describe parallel and intersecting (including perpendicular) lines using concrete objects and pictorial models.	Including but not limited to: • describe and identify lines using a variety of concrete objects and pictorial models o parallel lines (vertical, horizontal, diagonal and even & uneven length) o intersecting lines ▪ perpendicular lines (form right angles of 90°) • generalize lines cannot be both parallel and perpendicular if in the same plane • uses (parallel) ll and (perpendicular) ⊥ notation • demonstrate an understanding that lines extend (checking for intersecting lines beyond models) • identify lines according to two vertices (ex: line $\overleftrightarrow{AB}$) or by one lower case letter (line t) • identify line, line segment, vertex, ray, and point		**Whole Groups Lessons** Envision Topic 14 Lesson 1 **Small Group Lessons/Centers** AIRR Pairs of Lines #119 Can You Explain the Difference? #120 Identify the Lines in the Shape #121 Parallel or Perpendicular? #122 What's Your Line? #123 Kamico Look Closer Pages 189 – 194