3rd Grade Unit 9 Priorities Document

Please see the Draft Grade 3 Math Overview and Scope and Sequence for important information about the year and emphases for each unit.

Overarching Big Ideas

• ***Less is more***	• ***Depth vs. breadth***	• ***Relationships over everything***	• ***Access for all, especially emerging bilinguals & students with disabilities***

	Window (change)	**Big Idea**	**Comments**	Standards (**Priority Standards bolded**)
Unit 3.9 **Area Measurement**	2 weeks (was 14 days)	Area and perimeter are attributes of plane figures (two-dimensional objects). Area is measured in square units, while perimeter is measured in linear units.	• Reduce emphasis • Focus on iterating units and using area models to show the distributive property. • Integrate some problems on perimeter (from 3.4) as it relates to the relationship between area and perimeter.	3.MD.5 3.MD.6 3.MD.7 3.MD.8

Norms

Answers are important, but they are not the math.	**Talk about each other's thinking.**	**Errors are gifts that promote discussion.**	**Ask questions until ideas make sense.**	**Use multiple strategies and multiple representations.**
				

2020-21 SFUSD Elementary Math Distance Learning Resources	**Gr 3 Curriculum Portal**	**Games in the Gr 3 Curriculum**	**Math Talks Bank**

Optional Routines:	• Number of Days in School (Spanish) • Counting Routine • Data Routine • Number of the Day Routine / Jamboard Number of the Day (Spanish)	Optional Math Talks (Spanish) include: • Array Dot Talks • Area and Perimeter Talks

3.9 Slidedeck / Spanish

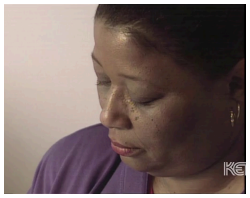
Emphasized Standards in this unit:
Measurement and Data **Geometric measurement: understand concepts of area and relate area to multiplication and to addition.** 3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement. 3.MD.5a A square with side length 1 unit, called a "unit square," is said to have "one square unit" of area, and can be used to measure area. 3.MD.5b A plane figure which can be covered without gaps or overlaps by *n* unit squares is said to have an area of *n* square units. 3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). 3.MD.7 Relate area to the operations of multiplication and addition. 3.MD.7a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying with side lengths. 3.MD.7b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. 3.MD.7c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a x b and a x c. Use area models to represent the distributive property in mathematical reasoning. 3.MD.7d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. **Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.** 3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

New Learning in this Unit:	Other Resources

• **Area** is the measure of space within a figure. It is expressed in square units.
• **Perimeter** is the measure around the edge of a shape. It is expressed in linear units.
• **Area** can be measured by covering a two-dimensional shape with square units and counting the square units.
  ○ When tiling a shape, the tiles have to touch each other
  ○ The size of two shapes can be compared *indirectly* by covering with iterated units, e.g. with counters or grid paper.
• The **area** of **rectangles** can be determined by multiplying the length of the two sides.
  ○ That product tells us how many square units cover the rectangle.
• We can take rectangles apart, find the area of each part, then add the areas to find the area of the original rectangle
	3.9 Video Podcast
	Unit 3.9 Family Letter S C
	3.9 Tech Resources
	
	* S = Spanish Student Page
	* C = Chinese Student Page
	Classwork and Homework PDFs
	3.9 Classwork S C
	3.9 Homework S C

Optional Math Talks (Spanish) include:
- Array Dot Talks
- Area and Perimeter Talks

Unit Warm-up: Connect the topic to something familiar to your students.
To help students get INTO this unit, we offer two warm-ups:
1 - What is area?
Students find rectangular things in their house and compare their sizes visually
2 - Quilts again!
Students learn about another contemporary black quilter, Juanita Yeager, and think about the area of quilts.




	Recommended Lessons	Strengths to highlight & Notebook Prompt	Notes and Continuing Activities
Lesson 1 (Entry Task and LS1 Days 1 and 2)	**LAUNCH Whole Class or Groups:** • Pick a focus norm • How can we compare the size (area) of rectangles that are similar in size? **EXPLORE Independent or Group work:** • 3.9 Student Slides English (Spanish) • Grade 3 Unit 9 Entry Comparing Shapes Jamboard (Spanish) • Seesaw 3.9 Entry Comparing Shapes (Spanish) • Comparing Shapes BLM - This page is NOT in student workbooks • Comparing Shapes S C **SUMMARIZE Whole Class or Groups:** **Core Math to Emphasize** • Area is the two-dimensional space inside a figure. Area can be measured by covering a two-dimensional shape with square units and counting the square units. • When tiling a shape, the tiles have to touch each other • The distance around a shape (perimeter) is different from the space inside the figure (area). • The size of two shapes can be compared indirectly by covering with iterated units, e.g. with counters or grid paper.	**Strengths:** Our class of mathematicians knows that some tools are easier to use than others. Describe how you found the area of a rectangle. The optional Notebook Prompts may be completed on this Math Notebook or this Math Notebook	**Options for Continuing Activities** **Exploring the Geoboard** • **Give students time to explore the The Math Learning Center's Geoboard Environment** • Just as with physical manipulatives, it's important to give students time for free exploration and guided exploration before asking them to use the manipulatives for solving problems. • Following this slide there are two slides to guide students to do free exploration and guided exploration of the **Geoboard Environment**

Lesson 2 (From Unit 3.4, LS 3 Day 1 & 2)	**LAUNCH Whole Class or Groups:**
	• Pick a focus norm
	• An ant's path - measuring perimeter
	
	EXPLORE Independent or Group work:
	• One of these apps:
	  ○ https://www.mathlearningcenter.org/apps/geoboard
	  ○ https://www.didax.com/apps/geoboard/
	  ○ https://toytheater.com/geoboard/
	• 3.9 Student Slides English (Spanish)
	• Seesaw 3.9 Lesson 2 Find Rectangles with a Perimeter of 12 Units (Spanish)
	• Ant's Path BLM S C
	• Geoboard Paper
	
	SUMMARIZE Whole Class or Groups:
	Core Math to Emphasize
	• Area is the measure of space within a figure. It is expressed in square units.
	• Perimeter is the measure around the edge of a shape. It is expressed in linear units.
		Strengths:
		Our class of mathematicians knows that sometimes new ideas are confusing.
		
		  Can two rectangles have the same perimeter and different areas?
		
		The optional Notebook Prompts may be completed on this Math Notebook or this Math Notebook
			Options for Continuing Activities
			• Tiling with Rectangles
			• Make a rectangle in **Toy Theatre Area / perimeter explorer**.
			• Here's a video showing how to do it.
			• Take a picture of your rectangle and note how many rows, how many columns, and how many tiles total.

Lesson 3 (LS1 Day 3)	**LAUNCH Whole Class or Groups:** • Pick a focus norm • Find the area of a rectangle when the edge length is known **EXPLORE Independent or Group work:** • 3.9 Student Slides English (Spanish) • Seesaw 3.9 Lesson 3 Find Area of Rectangles (Spanish) • Area of Rectangles S C **SUMMARIZE Whole Class or Groups:** **Core Math to Emphasize** • The area of rectangles can be determined by multiplying the length of the two sides. • That product tells us how many square units cover the rectangle.	**Strengths:** Our class of mathematicians knows that using a ruler precisely is challenging.  How can you use a ruler to find the area of a rectangle? The optional Notebook Prompts may be completed on this Math Notebook or this Math Notebook	**Options for Continuing Activities** • **Students can return to the rectangles from this activity and find the perimeter of each.** • Two optional activities from the original unit may be used as continuing activities or extensions: • Area Puzzles BLM S C • Kitchen Tiles S C

Lesson 4 (LS2 Day 1)	**LAUNCH Whole Class or Groups:** • Pick a focus norm • Math Talk on the distributive property • Breaking rectangles up to find area **EXPLORE Independent or Group work:** • 3.9 Student Slides English (Spanish) • Seesaw 3.9 Lesson 4 How Many In All? (Spanish) • How Many In All? S C **SUMMARIZE Whole Class or Groups:** **Core Math to Emphasize** • We can take rectangles apart, find the area of each part, then add the areas to find the area of the original rectangle.	**Strengths:** Our class of mathematicians knows that taking things apart and putting them back together is a big idea in math.  What ideas about area are clearer to you now? The optional Notebook Prompts may be completed on this Math Notebook or this Math Notebook	**Options for Continuing Activities** • Students return to their rectangles from Lesson 3, divide them up into 2 rectangles, find the area of each, and add them. • Students explore all the ways they could divide a rectangle up into smaller rectangles and find the smaller areas.
Lesson 5 (LS2 Day 4)	**LAUNCH Whole Class or Groups:** • Pick a focus norm • Look at a mystery shape and think about how to divide it up to find its area. **EXPLORE Independent or Group work:** • 3.9 Student Slides English (Spanish) • 3.9 Lesson 5 Hidden Rectangles Jamboard (Spanish) • Seesaw 3.9 Lesson 5 Hidden Rectangles (Spanish) • Hidden Rectangles BLM S C **SUMMARIZE Whole Class or Groups:** **Core Math to Emphasize** • Shapes in the plane (2-D shapes) can be decomposed into smaller shapes. • The area of a shape is the sum of the areas of its component shapes. • The opposite sides of a rectangle are congruent (they are the same length) • The perimeter of a shape is the distance around the shape	**Strengths:** Our class of mathematicians knows that drawings can help us think of different ways to solve a problem.  One new way I learned to find the area of the shape is ... The optional Notebook Prompts may be completed on this Math Notebook or this Math Notebook	**Options for Continuing Activities** • **Pentominoes** are geometric shapes formed by five adjoining squares placed edge to edge. One challenge to students is to create all the possible pentominoes. (There are 12 possible, but it's best to let students discover this.) • See the Pentomino Resources Teacher page for more information, including ways to explore the relationship between area and perimeter. This work can be done in the **Toy Theatre Area / perimeter explorer**. • More complicated rectilinear figures can be constructed to challenge students.

Milestone Task	**LAUNCH Whole Class or Groups:** ● Pick a focus norm ● Introduce the Milestone using the 3-Read protocol **EXPLORE Independent or Group work:** ● 3.9 Student Slides English (Spanish) ● Seesaw 3.9 Milestone Building a Garden (Spanish) ● Milestone Task Building a Garden BLM S C - This BLM is not in student workbooks **SUMMARIZE Whole Class or Groups:** **Core Math to Emphasize** ● Perimeter is the measure around the edge of a shape. It is expressed in linear units. ● Area is the two-dimensional space inside a figure. Area can be measured by covering a two-dimensional shape with square units and counting the square units. ● The area of rectangles can be determined by multiplying the length of the two sides. ● That product tells us how many square units cover the rectangle. ● We can take rectangles apart, find the area of each part, then add the areas to find the area of the original rectangle.	**Strengths:** Our class of mathematicians knows that when we are learning about a new idea, we can have lots of questions.  What is a question that you still have about area measurement? The optional Notebook Prompts may be completed on this Math Notebook or this Math Notebook	**Options for Continuing Activities** ● Optional - 3.9 Expert Task