Unit 11 Reveal Grade 3

Content Area: **Math**
Course(s):
Time Period: **April**
Length: **2 weeks**
Status: **Published**

Unit Overview

UNIT 11 PLANNER
Perimeter

PACING: 9 days

LESSON		MATH OBJECTIVE	LANGUAGE OBJECTIVE	SOCIAL AND EMOTIONAL LEARNING OBJECTIVE	LESSON	KEY VOCABULARY
Unit Opener	Rectangles: The "Ins" and the "Outs"	Students explore relationships between area and perimeter.				
11-1	Understand Perimeter	Students determine when a measurement describes perimeter. Students count or add to determine the perimeter of a figure.	Students describe the process of creating a perimeter by using the preposition *around*.	Students discuss the value of hearing different viewpoints and approaches to problem solving.	11-1	Math Terms perimeter
11-2	Determine Perimeter of Figures	Students use different strategies to find the perimeter of a figure, including counting, adding, and multiplying.	Students articulate perimeter measurements using a range of units of length, such as *feet, yards,* and *meters*.	Students identify and discuss the emotions experienced during math learning.	11-2	perimeter
11-3	Determine an Unknown Side Length	Students determine an unknown side length of a figure when given the perimeter and other side lengths.	Students use the term *unknown* to describe a missing number.	Students collaborate with peers and contribute to group effort to achieve a collective mathematical goal.	11-3	perimeter unknown
11-4	Solve Problems Involving Area and Perimeter	Students solve problems involving area and perimeter. Students solve problems involving figures with the same perimeter and different areas or with the same area and different perimeters.	Students compare two figures by using the expression *have the same but ....*	Students determine the strategies and analyses necessary to make informed decisions when engaging in mathematical practices.	11-4	area perimeter
Math Probe	Expressions for Perimeter and Area	Students distinguish between finding the area and the perimeter of a rectangle.				
11-5	Solve Problems Involving Measurement	Students represent and solve problems with length measurements.	Students articulate ways to solve a problem by using precise names for visual representations.	Students practice strategies for persisting at a mathematical task, such as setting a small goal or setting timers for remaining focused.	11-5	bar diagram length
	Unit Review **Fluency Practice**					
	Performance Task **Unit Assessment**					

Enduring Understandings

See Above

Essential Questions

See Above

Instructional Strategies and Learning Activities

LESSON 11-1

Understand Perimeter

Learning Targets

- I can explain when a measurement describes perimeter.
- I can determine the perimeter of a figure.

Standards ◆ Major ▲ Supporting ○ Additional

Content

○ **3.MD.D.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.

Math Practices and Processes

MPP Construct viable arguments and critique the reasoning of others.

Focus

Content Objectives	Language Objectives	SEL Objective
• Students determine when a measurement describes perimeter. • Students count or add to determine the perimeter of a figure.	• Students describe the process of creating a perimeter by using the preposition *around*. • To cultivate conversation, use MLR7: Compare and Connect.	• Students discuss the value of hearing different viewpoints and approaches to problem solving.

Coherence

Previous	Now	Next
• Students measured lengths in standard units (Grade 2). • Students found the area of a figure (Unit 6).	• Students understand the meaning of perimeter and determine the perimeter of figures by counting and adding.	• Students determine unknown side lengths given the perimeter of a figure (Unit 11). • Students solve real-world problems involving perimeter and area (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students develop an understanding of how to measure perimeter. *Conceptual understanding is not a targeted element of rigor for this standard.*	• Students build fluency with perimeter by determining the perimeter of different figures.	• Students apply their understanding of perimeter to solve real-world problems.

LESSON 11-2

Determine Perimeter of Figures

Learning Targets

- I can use different strategies to find the perimeter of a figure.
- I can explain how to use different strategies to find the perimeter of a figure.

Standards ◆ Major ▲ Supporting ○ Additional

Content

○ **3.MD.D.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.

Math Practices and Processes

MPP Reason abstractly and quantitatively.

Focus

Content Objective	Language Objectives	SEL Objective
• Students use different strategies to find the perimeter of a figure, including counting, adding, and multiplying.	• Students articulate perimeter measurements by using a range of units of length, such as *feet*, *yards*, and *meters*. • To support sense-making, use MLR5: Co-Craft Questions.	• Students identify and discuss the emotions experienced during math learning.

Coherence

Previous	Now	Next
• Students measured lengths in standard units (Grade 2). • Students learned perimeter is the sum of the lengths of the sides of a figure (Unit 11).	• Students extend their understanding of perimeter by using addition and multiplication to find the perimeter of figures.	• Students determine unknown side lengths when given the perimeter of a figure (Unit 11). • Students solve real-world problems involving perimeter and area (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students develop an understanding of how to find perimeter using addition and multiplication. *Conceptual understanding is not a targeted element of rigor for this standard.*	• Students build fluency with multiplication as they solve perimeter problems.	• Students apply their understanding of perimeter to solve real-world problems.

LESSON 11-3

Determine an Unknown Side Length

Learning Targets

- I can find an unknown side length of a figure if the perimeter is known.
- I can explain how to find an unknown side length if the perimeter is known.

Standards ◆ Major △ Supporting ○ Additional

Content

○ **3.MD.D.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.

Math Practices and Processes

MPP Reason abstractly and quantitatively.

Focus

Content Objective	Language Objectives	SEL Objective
• Students determine an unknown side length of a figure when given the perimeter and other side lengths.	• Students use the term *unknown* to describe a missing number. • To optimize output, use MLR3: Critique, Correct, and Clarify.	• Students collaborate with peers and contribute to group effort to achieve a collective mathematical goal.

Coherence

Previous	Now	Next
• Students measured lengths by choosing correct tools (Grade 2). • Students found the perimeter of figures given the lengths of their sides (Unit 11).	• Students solve real-world problems involving perimeter. • Students find the length of an unknown side given the perimeter and other side lengths.	• Students solve problems using area and perimeter (Unit 11). • Students solve real-world problems involving perimeter and area (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students use their understanding of perimeter to help find a missing side length when they are given the total perimeter. *Conceptual understanding is not a targeted element of rigor for this standard.*	• Students build fluency with addition and subtraction skills as they find the missing side length of a figure.	• Students apply their understanding of perimeter to solve real-world problems.

LESSON 11-4

Solve Problems Involving Area and Perimet

Learning Targets

- I can solve problems involving area and perimeter.
- I can explain how to solve problems involving area and perimeter.

Standards ◆ Major ▲ Supporting ○ Additional

Content

○ **3.MD.D.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.

Math Practices and Processes

MPP Make sense of problems and persevere in solving them.

Focus

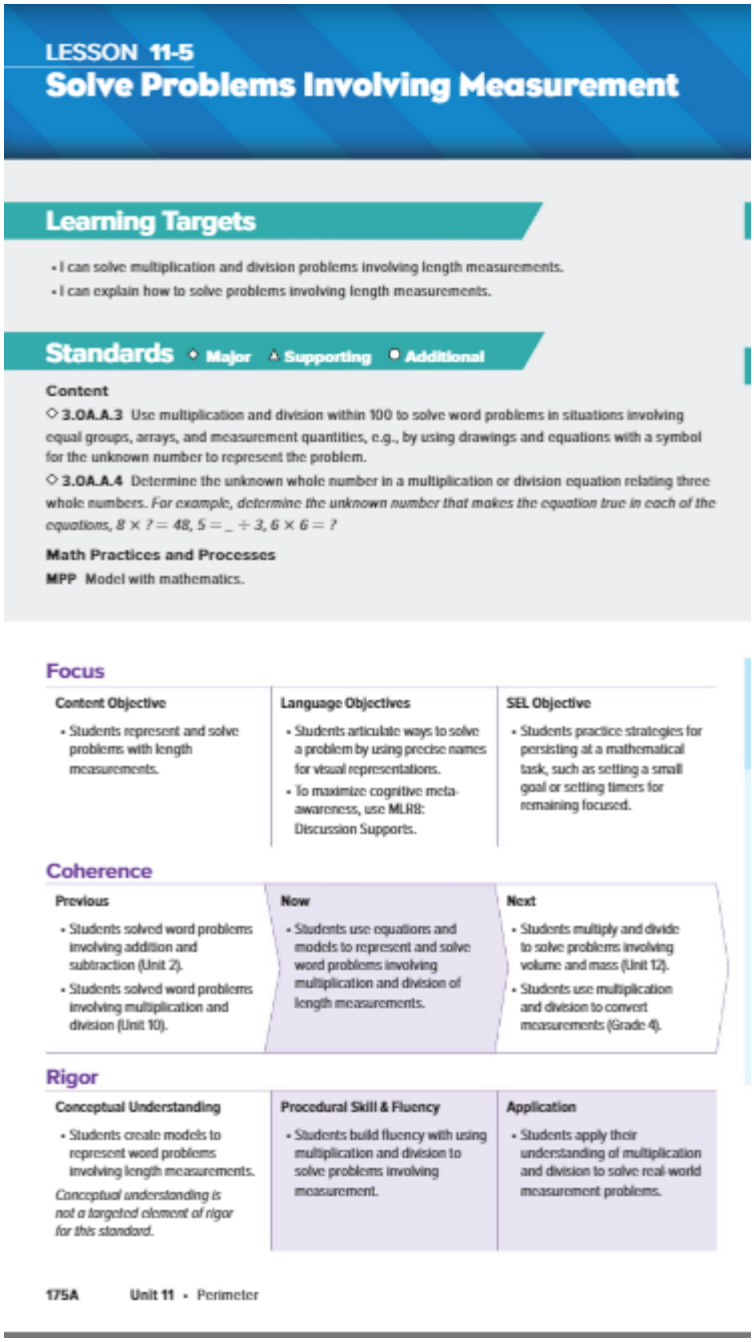
Content Objectives	Language Objectives	SEL Objective
• Students solve problems involving area and perimeter. • Students solve problems involving figures with the same perimeter and different areas or with the same area and different perimeters.	• Students compare two figures by using the expression *have the same but ....* • To support sense-making, use MLR6: Three Reads.	• Students determine the strategies and analyses necessary to make informed decisions when engaging in mathematical practices.

Coherence

Previous	Now	Next
• Students explored how to find the area of a figure (Unit 6). • Students found the perimeter of figures given the lengths of their sides (Unit 11).	• Students understand that different rectangles may have the same area and different perimeters or the same perimeter and different areas.	• Students multiply and divide to solve problems involving volume and mass (Unit 12). • Students apply formulas to find area and perimeter to solve real-world problems. (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding of the difference between area and perimeter. *Conceptual understanding is not a targeted element of rigor for this standard.*	• Students build fluency solving problems involving area and perimeter.	• Students apply their understanding of area and perimeter as they solve problems with real-world contexts.



LESSON 11-5

Solve Problems Involving Measurement

Learning Targets

- I can solve multiplication and division problems involving length measurements.
- I can explain how to solve problems involving length measurements.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **3.OA.A.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

◇ **3.OA.A.4** Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations,* $8 \times ? = 48$, $5 = _ \div 3$, $6 \times 6 = ?$

Math Practices and Processes

MPP Model with mathematics.

Focus

Content Objective	Language Objectives	SEL Objective
• Students represent and solve problems with length measurements.	• Students articulate ways to solve a problem by using precise names for visual representations. • To maximize cognitive meta-awareness, use MLR8: Discussion Supports.	• Students practice strategies for persisting at a mathematical task, such as setting a small goal or setting timers for remaining focused.

Coherence

Previous	Now	Next
• Students solved word problems involving addition and subtraction (Unit 2). • Students solved word problems involving multiplication and division (Unit 10).	• Students use equations and models to represent and solve word problems involving multiplication and division of length measurements.	• Students multiply and divide to solve problems involving volume and mass (Unit 12). • Students use multiplication and division to convert measurements (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students create models to represent word problems involving length measurements. *Conceptual understanding is not a targeted element of rigor for this standard.*	• Students build fluency with using multiplication and division to solve problems involving measurement.	• Students apply their understanding of multiplication and division to solve real-world measurement problems.

Integration of Career Readiness, Life Literacies and Key Skills

9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.4.2.CI.1	Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
9.4.2.CI.2	Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).
9.1.2.CR.2	List ways to give back, including making donations, volunteering, and starting a business.
9.1.2. FI.1	Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards).

9.4.2.CT.2	Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.1.2.FP.1	Explain how emotions influence whether a person spends or saves.
9.1.2.FP.3	Identify the factors that influence people to spend or save (e.g., commercials, family, culture, society).
9.4.2.DC.3	Explain how to be safe online and follow safe practices when using the internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).
9.1.2.PB.1	Determine various ways to save and places in the local community that help people save and accumulate money over time.
9.1.2.PB.2	Explain why an individual would choose to save money.
9.4.2.DC.6	Identify respectful and responsible ways to communicate in digital environments.
9.4.2.DC.7	Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).
9.4.2.TL.2	Create a document using a word processing application.
9.4.2.TL.5	Describe the difference between real and virtual experiences.
9.4.2.TL.6	Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).
9.4.2.TL.7	Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

Technology and Design Integration

8.1.2.CS.1	Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
8.1.2.DA.1	Collect and present data, including climate change data, in various visual formats.
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.
8.1.2.AP.4	Break down a task into a sequence of steps.
8.1.2.AP.5	Describe a program's sequence of events, goals, and expected outcomes.
8.2.2.ITH.4	Identify how various tools reduce work and improve daily tasks.

Interdisciplinary Connections

LA.RI.3.1	Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
LA.RI.3.2	Determine the main idea of a text; recount the key details and explain how they support the main idea.
LA.RI.3.3	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
LA.RI.3.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
LA.RI.3.5	Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
LA.RI.3.6	Distinguish their own point of view from that of the author of a text.

LA.RI.3.8	Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence) to support specific points the author makes in a text.
LA.RI.3.9	Compare, contrast and reflect on (e.g., practical knowledge, historical/cultural context, and background knowledge) the most important points and key details presented in two texts on the same topic.
LA.RI.3.10	By the end of the year, read and comprehend literary nonfiction at grade level text-complexity or above, with scaffolding as needed.
LA.W.3.4	With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
LA.SL.3.1	Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
LA.L.3.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.

- **Definitions of Differentiation Components**:

    - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
    - Process – how the student will acquire the content information.
    - Product – how the student will demonstrate understanding of the content.
    - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:



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Modifications and Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a standard or set of academic standards and goals.

Schoolwide Benchmark assessments:

Aimsweb benchmarks 3X a year

Linkit Benchmarks 3X a year

DRA

Additional Benchmarks used in this unit:

Reveal Unit assessments

MA.3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MA.3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
MA.3.MD.D.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.

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

Formative Assessments used in this unit:

Teacher observation

Checklists

Questioning and Discussion

Quizzes

Summative Assessments

summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.

Summative assessments for this unit:

End of Unit assessments

Standards

MA.3.OA.A	Represent and solve problems involving multiplication and division.
MA.3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MA.3.OA.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
MA.3.MD.D	Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
MA.3.MD.D.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.

Instructional Materials

See above