Unit 6 Reveal Grade 3

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

Unit Overview

UNIT 6 PLANNER

Connect Area and Multiplication

PACING: 11 days

LESSON		MATH OBJECTIVE	LANGUAGE OBJECTIVE	SOCIAL AND EMOTIONAL LEARNING OBJECTIVE	LESSON	KEY VOCABULARY
Unit Opener	IGNITE How Many Rectangles? Students think about different ways to make rectangles to connect area and multiplication.					
6-1	Understand Area	Students demonstrate understanding of concepts of area measurement.	Students articulate an understanding of area by talking about gaps and overlaps.	Students engage in active listening and work collaboratively with a partner to complete mathematical tasks.	6-1	Math Terms area square units unit square
6-2	Count Unit Squares to Determine Area	Students determine area by counting unit squares.	Students state a measurement of area using precise units and the preposition *by*.	Students discuss and practice strategies for managing stressful situations.	6-2	area square units unit square
6-3	Use Multiplication to Determine Area	Students multiply the length of a rectangle by its width to determine the area of a rectangle.	Students express area using the unit of measurement *square unit*.	Students reflect on and describe the logic and reasoning used to make a mathematical decision or conclusion.	6-3	area multiplication
6-4	Determine the Area of a Composite Figure	Students determine the area of composite figures.	Students use the imperatives *Find* and *Add* to explain how to determine area.	Students exchange ideas for mathematical problem-solving with a peer, listening attentively and providing thoughtful and constructive feedback.	6-4	composite figure
Math Probe	Area Students determine whether the area of a composite figure was found correctly.					
6-5	Use the Distributive Property to Determine Area	Students determine the area of a rectangle by decomposing a side length using the Distributive Property.	Students read a mathematical property written as a multi-clause sentence.	Students identify and discuss the emotions experienced during math learning.	6-5	decompose
6-6	Solve Area Problems	Students solve real-world problems involving the area of rectilinear figures.	Students describe figures using appropriate nouns and adjectives for area measurement.	Students explore taking different perspectives on approaches to problem solving.	6-6	area composite figure
Unit Review **Fluency Practice**						
Performance Task **Unit Assessment**						

Enduring Understandings

See Above

Essential Questions

See Above

Instructional Strategies and Learning Activities

LESSON 6-1

Understand Area

Learning Targets

- I can find the area of a figure using tiling.
- I can explain area.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **3.MD.C.5** Recognize area as an attribute of plane figures and understand concepts of area measurement. (a) 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. (b) 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.C.7.a** 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 the side lengths.

Math Practices and Processes

MPP Reason abstractly and quantitatively.

MPP Look for and express regularity in repeated reasoning.

Focus

Content Objective	Language Objectives	SEL Objective
• Students demonstrate understanding of concepts of area measurement.	• Students articulate an understanding of area by talking about gaps and overlaps. • To support sense-making, use MLR6: Three Reads.	• Students engage in active listening and work collaboratively with a partner to complete mathematical tasks.

Coherence

Previous	Now	Next
• Students explored the concept of area by partitioning rectangles using squares (Grade 2). • Students used arrays to multiply (Unit 3).	• Students calculate the area of figures by tiling.	• Students use multiplication to find the area of rectangles (Unit 6). • Students use a formula to find the area of a rectangle (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build upon their understanding of the area of a figure as they notice the relationship between the amount of surface of the figure and the area.	• Students build procedural skill by counting unit squares to measure area.	• Students apply tiling to figures of various sizes. *Application is not a targeted element of rigor for this standard.*

LESSON 6-2

Count Unit Squares to Determine Area

Learning Targets

- I can find the area of a figure by counting the unit squares that cover a figure.
- I can explain how to determine the area of a figure.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **3.MD.C.6** Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

Math Practices and Processes

MPP Attend to precision.

MPP Look for and make use of structure.

Focus

Content Objective	Language Objectives	SEL Objective
• Students determine area by counting unit squares.	• Students state a measurement of area using precise units and the preposition *by*. • To support cultivating conversation and optimizing output, use MLR5: Co-Craft Problems.	• Students discuss and practice strategies for managing stressful situations.

Coherence

Previous	Now	Next
• Students solved problems involving lengths given in various units (Grade 2). • Students used tiling to find area (Unit 6).	• Students calculate the area of figures by counting unit tiles of various units.	• Students solve problems relating perimeter and area (Unit 11). • Students use a formula to find the area of a rectangle (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build upon their understanding of area in the real world as they explore using different units to find area.	• Students count unit squares to measure area in different units.	• Students apply counting unit squares to solve real-world problems. *Application is not a targeted element of rigor for this standard.*

LESSON 6-3

Use Multiplication to Determine Area

Learning Targets

- I can multiply to find the area of a rectangle.
- I can solve real-world problems involving areas of rectangles.

Standards ◆ Major △ Supporting ○ Additional

Content

◇ **3.MD.C.7.a** 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 the side lengths.

◇ **3.MD.C.7.b** 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.

Math Practices and Processes

MPP Construct viable arguments and critique the reasoning of others.

MPP Attend to precision.

Focus

Content Objective	Language Objectives	SEL Objective
• Students multiply the length of a rectangle by its width to determine the area of a rectangle.	• Students express area by using the unit of measurement *square unit*. • To maximize linguistic and cognitive meta-awareness, use MLR7: Compare and Connect.	• Students reflect on and describe the logic and reasoning used to make a mathematical decision or conclusion.

Coherence

Previous	Now	Next
• Students partitioned a rectangle into rows and columns (Grade 2). • Students used arrays to solve multiplication problems (Unit 5).	• Students determine the area of a rectangle by multiplying its side lengths.	• Students solve problems involving area and perimeter (Unit 11). • Students apply area and perimeter formulas in real-world problems (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students build on their understanding that multiplying two numbers will yield an array of square units covering a rectangular area.	• Students strengthen fluency by finding the area of a rectangle using multiplication.	• Students apply an understanding of a multiplication strategy to solve a real-world area problem. *Application is not a targeted element of rigor for this standard.*

LESSON 6-4

Determine the Area of a Composite Figure

Learning Targets

- I can decompose a composite figure into rectangles to find its area.
- I can explain how to decompose a composite figure into rectangles to find its area.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **3.MD.C.7.d** 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.

Math Practices and Processes

MPP Make sense of problems and persevere in solving them.

MPP Reason abstractly and quantitatively.

Focus

Content Objective

- Students determine the area of composite figures.

Language Objectives

- Students use the imperatives *Find* and *Add* to explain how to determine area.
- To support cultivating conversation, use in MLR4: Information Gap.

SEL Objective

- Students exchange ideas for mathematical problem-solving with a peer, listening attentively and providing thoughtful and constructive feedback.

Coherence

Previous

- Students decomposed rectangles into squares (Grade 2).
- Students defined area, discovered why it is calculated in square units, and used multiplication to find areas of rectangles (Unit 6).

Now

- Students decompose rectilinear figures into non-overlapping rectangles to find the area of the figure.
- Students solve real-world problems involving decomposing a figure to find its area.

Next

- Students use the Distributive Property to find area (Unit 6).
- Students use equations to find length and width when given the area in real-world problems (Grade 4).

Rigor

Conceptual Understanding

- Students learn that the area of any figure is the sum of the areas of its non-overlapping parts.

Procedural Skill & Fluency

- Students gain skill and fluency with finding the area of rectangles.

Application

- Students find the area of composite figures in a real-world context.

Application is not a targeted element of rigor for this standard.

LESSON 6-5

Use the Distributive Property to Determine A

Learning Targets

- I can decompose a side length of a rectangle to find the area.
- I can explain how to decompose to find the area of a rectangle.

Standard ◇ Major △ Supporting ○ Additional

Content

◇ **3.MD.C.7.c** 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 $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.

Math Practices and Processes

MPP Reason abstractly and quantitatively.

MPP Construct viable arguments and critique the reasoning of others.

Focus

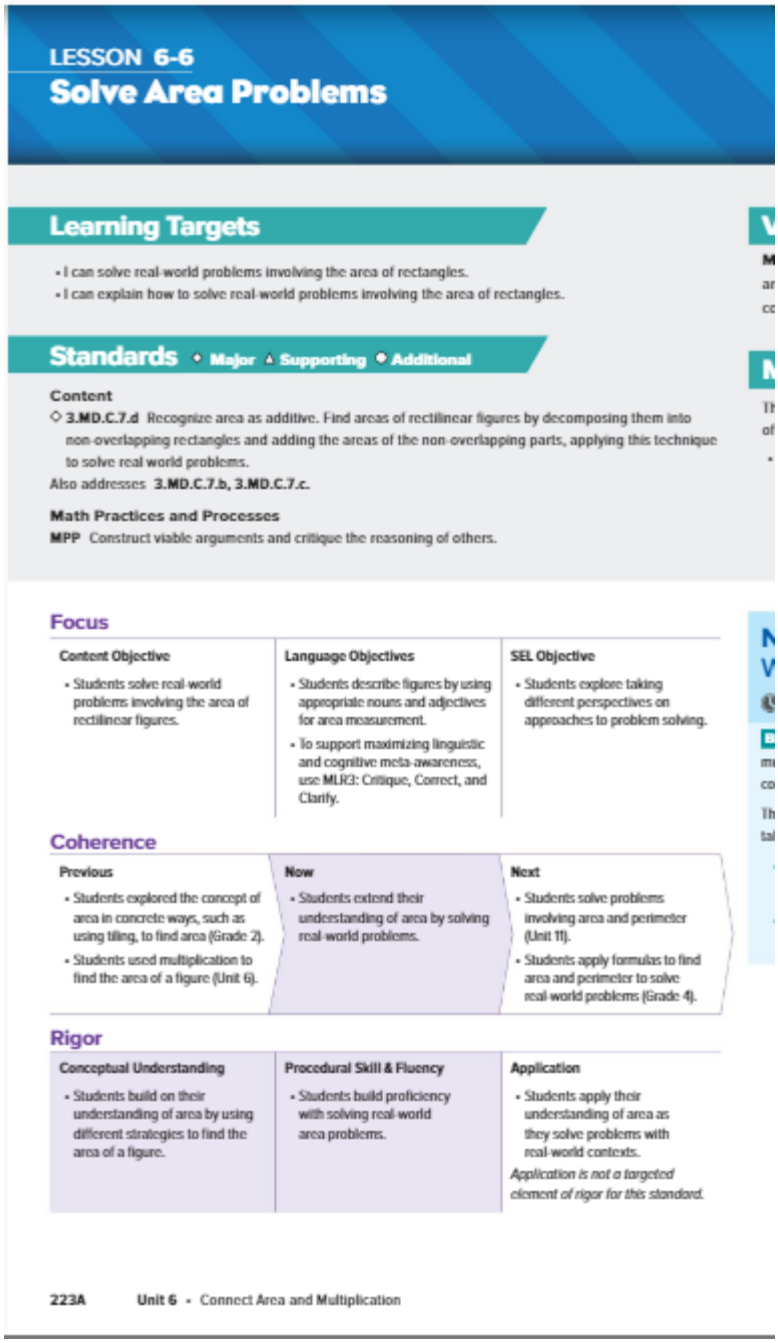
Content Objective	Language Objectives	SEL Objective
• Students determine the area of a rectangle by decomposing a side length using the Distributive Property.	• Students read a mathematical property written as a multi-clause sentence. • To support sense-making and optimize output, use MLR1: Stronger and Clearer Each Time.	• Students identify and discuss the emotions experienced during math learning.

Coherence

Previous	Now	Next
• Students used properties of operations to explain addition and subtraction (Grade 2). • Students used multiplication to find area (Unit 6).	• Students apply the Distributive Property to find area.	• Students solve problems involving area and perimeter (Unit 11). • Students use equations to find length and width when given the area in real-world problems (Grade 4).

Rigor

Conceptual Understanding	Procedural Skill & Fluency	Application
• Students develop an understanding of how to use Distributive Property to find the area of a figure.	• Students improve multiplication fluency within 100 as they decompose numbers to find the area of rectangles.	• Students apply an understanding of the Distributive Property to help find the area of figures in real-world problems. *Application is not a targeted element of rigor for this standard.*



LESSON 6-6

Solve Area Problems

Learning Targets

- I can solve real-world problems involving the area of rectangles.
- I can explain how to solve real-world problems involving the area of rectangles.

Standards ◆ Major ▲ Supporting ● Additional

Content

◇ **3.MD.C.7.d** 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.

Also addresses **3.MD.C.7.b, 3.MD.C.7.c.**

Math Practices and Processes

MPP Construct viable arguments and critique the reasoning of others.

Focus

Content Objective	Language Objectives	SEL Objective
• Students solve real-world problems involving the area of rectilinear figures.	• Students describe figures by using appropriate nouns and adjectives for area measurement. • To support maximizing linguistic and cognitive meta-awareness, use MLR3: Critique, Correct, and Clarify.	• Students explore taking different perspectives on approaches to problem solving.

Coherence

Previous	Now	Next
• Students explored the concept of area in concrete ways, such as using tiling, to find area (Grade 2). • Students used multiplication to find the area of a figure (Unit 6).	• Students extend their understanding of area by solving real-world problems.	• Students solve problems involving area and perimeter (Unit 11). • 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 area by using different strategies to find the area of a figure.	• Students build proficiency with solving real-world area problems.	• Students apply their understanding of area as they solve problems with real-world contexts. *Application is not a targeted element of rigor for this standard.*

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Integration of Career Readiness, Life Literacies and Key Skills

PFL.9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
PFL.9.1.2.CR.2	List ways to give back, including making donations, volunteering, and starting a business.
PFL.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).
PFL.9.1.2.FP.1	Explain how emotions influence whether a person spends or saves.
PFL.9.1.2.FP.3	Identify the factors that influence people to spend or save (e.g., commercials, family, culture, society).

PFL.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.
PFL.9.1.2.PB.2	Explain why an individual would choose to save money.
TECH.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).
TECH.9.4.2.CI.2	Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).
TECH.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).
TECH.9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
TECH.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).
TECH.9.4.2.DC.6	Identify respectful and responsible ways to communicate in digital environments.
TECH.9.4.2.DC.7	Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).
TECH.9.4.2.TL.2	Create a document using a word processing application.
TECH.9.4.2.TL.5	Describe the difference between real and virtual experiences.
TECH.9.4.2.TL.6	Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).
TECH.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

CS.K-2.8.1.2.AP.4	Break down a task into a sequence of steps.
CS.K-2.8.1.2.AP.5	Describe a program's sequence of events, goals, and expected outcomes.
CS.K-2.8.1.2.CS.1	Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
CS.K-2.8.1.2.DA.1	Collect and present data, including climate change data, in various visual formats.
CS.K-2.8.1.2.DA.3	Identify and describe patterns in data visualizations.
CS.K-2.8.1.2.DA.4	Make predictions based on data using charts or graphs.
CS.K-2.8.2.2.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

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

Instructional Materials

See above

Standards

MA.3.MD.C.5	Recognize area as an attribute of plane figures and understand concepts of area measurement.
MA.3.MD.C.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.
MA.3.MD.C.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.
MA.3.MD.C.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).
MA.3.MD.C.7	Relate area to the operations of multiplication and addition.
MA.3.MD.C.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 the side lengths.
MA.3.MD.C.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.

MA.3.MD.C.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 $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
MA.3.MD.C.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.