Math 4 Diagnostic Formative Assessment

UNWRAP A STANDARD: WHAT DO STUDENTS HAVE TO KNOW AND BE ABLE TO DO?

Domain:Measurement & Data and GeometryDomain Weight:7% - 11% of items, 18.5% of standards

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

Standard: 4.MD.A.3 Apply the <u>area</u> and <u>perimeter formulas</u> for <u>rectangles</u> in *mathematical problems* and problems in *real-world contexts* including problems with <u>unknown side lengths</u>.

Arizona Performance Level Descriptors MD.A.3 (EQR, GRR, MSR)

Emerging (1)	Developing (2)	Proficient (3)	Distinguished (4)
I can identify	I can identify the	I can apply the	I can explain the
the <u>area</u> and	<u>area</u> and	area and	<u>difference</u> between
<u>perimeter</u> for	<u>perimeter</u> for	<u>perimeter formulas</u>	the <u>area</u> and
r <u>ectangles</u> in	<u>rectangles</u> in	for <u>rectangles</u> in	perimeter formulas for
mathematical	mathematical	mathematical	<u>rectangles</u> . Use the
problems.	problems and	problems and	<u>area</u> and <u>perimeter</u>
	problems in real-	problems in real-	formulas to determine
	world contexts.	world contexts	<u>unknown side lengths</u>
		including problems	of a <u>rectangle</u> .
		with <u>unknown side</u>	
		<u>lengths</u> .	I can create real-
			world applications of
			area and perimeter. *

BUILDING BACKGROUND KNOWLEDGE AND SKILLS: FLASHBACK STANDARD

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

EXTENDING KNOWLEDGE AND SKILLS: PREVIEW STANDARD

5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.

*Rigor increased by author from state PLD (high expectations).

ESSENTIAL KNOWLEDGE/CONCEPTS What Do Students Need to Know/Understand? List the underlined nouns.	ESSENTIAL SKILLS What Do Students Need to Be Able to Do? List the circled (or <i>italicized</i>) verbs.				
Area Perimeter Rectangle	Identify Apply Explain				
Area Formula Perimeter Formula	Use Create Determine				
Unknown side length Square Unit	FBS Measure Count				
Unit (centimeter, meter, inch, foot)	PRS Measure Count				
FBS Area Unit Squares	DOK LEVEL Level of content complexity rather than content difficulty.				
PRS. Volume Unit Cubes	DOK 1 DOK 2 DOK 3 DOK 4*				
ESSENTIAL QUESTIONS How can we capture student wonder? *Including open-ended and 'second' questions	ESSENTIAL VOCABULARY What Do Students Need to Comprehend? List all key vocabulary				
How would you describe the perimeter of a	Side Length Area Unit Square				
What is the same and what is different about	Perimeter Unit Side				
the area and perimeter of a rectangle?	Formula Two-dimensional				
How can you decide whether a question involves the perimeter or area of a rectangle?	Three-Dimensional				
Create a situation that would involve finding	FBS				
the area of a rectangle.	PRS Volume Unit Cubes				
LEARNING OBJECTIVES ALIC What 'I can' statement(s) will clai	GINED TO THE STANDARD ify the objective for students?				
EVIDENCE OF STUD How will we know wh	ENT MASTERY? Ten they know it?				
SPECIFIC INSTRUCTION What will we do to help them k What will we do for student What will we do for student	NAL FRAMEWORK? now/understand/can do it? s who still don't know it? 's who already know it?				

My Learning Intention: I am learning to apply the <u>area</u> and <u>perimeter formulas</u> for <u>rectangles</u> in *mathematical problems* and problems in *real-world contexts* including problems with <u>unknown side</u> <u>lengths</u>.

My Success Criteria	Post	Why am I learning this?
I can demonstrate my understanding of the concepts of area and perimeter.		
I can accurately calculate the area and perimeter of rectangles using the appropriate formula.		
I can apply the formulas correctly in mathematical problems involving rectangles.		
I can apply the formulas in real-world contexts, such as calculating the area of a room for carpeting or determining the perimeter of a garden.		
I can solve problems with unknown side lengths by setting up and solving equations based on the given information.	(1)	
I can show consistency in using the formulas accurately in creating and solving various problem-solving scenarios related to rectangles. What do I want to remember?		

Alignment to 4.MD.A.3.0 (Flashback to 3.MD.C.6) (DOK 1)

1. Count the boxes to find the area of rectangle A.





Alignment to MD.A.3.1 (DOK 1)

2. PART A. Find the total distance around the rectangle.PART B. Is this an example of area or perimeter?



Alignment to MD.A.3.2 (DOK 2)

3. Hilda is creating a frame to place around a rectangular painting. The painting is 12 cm long and 8 cm high.



Circle the equation Hilda can use to design her frame?

A = 12 x 8

P = 12 + 8

A = 12 x 8 + 12 x 8

 $P = 2 \times 12 + 2 \times 8$

Alignment to MD.A.3.2 (DOK 2)

4. Maria is creating a rectangular garden for her mother. Her garden will be eight meters long and nine meters wide.

PART A. Draw and label a sketch of the garden.

PART B. Maria needs help finding the amount of space inside her garden. Find the area of the garden.

Alignment to MD.A.3.3 (DOK 2)

5. Find the length of the missing side in the given rectangle if the perimeter is 28 ft.

8 ft

A. 3.5 ft. B. 6 ft. C. 20 ft. D. 72 ft.

Alignment to MD.A.3.3 (DOK 3)

6. PART A. Draw a rectangle on the grid below with an area of 48 sq cm.PART B. State the length and width of the rectangle.

Alignment to MD.A.3.4 (DOK 3)

- **7.** Think of a time when knowing how to find the area or perimeter of a rectangle would have solved a question.
 - **PART A.** Describe the problem. Include approximate measures in your story to make it realistic.
 - PART B. Make a labeled sketch to illustrate your situation.
 - PART C. Solve your story.

Guided Group Lesson

Date:

Standard: 4. MD.A.3 Apply the <u>area</u> and <u>perimeter formulas</u> for <u>rectangles</u> in mathematical problems and problems in real-world contexts including problems with <u>unknown side lengths</u>.

Group	Emerging	Developing	Proficient	Distinguished		
Members						
Warm-Up:						
	Side Len	vocabulary	nit Sauare			
(Perime	ater Unit	Side			
	Perimeter Unit Side					
	Formula	Two-dime	ensional			
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small group instruction.

What will you do with these students next? Change groups, repeat, etc.