

MATH WORKSHOP

AREA & PERIMETER



Unit Overview			
Lesson 1 What are polygons and their characteristics? pg. 32	Lesson 2 What is perimeter and how do we find it? pg. 42	Lesson 3 What is perimeter and how do we find it? (Review) pg. 55	Lesson 4 How do I find the missing side when the perimeter is known? pg. 60
Lesson 5 What is area and how do you find it? pg. 70	Lesson 6 How do you estimate area and do the units matter? pg. 75	Lesson 7 How do you find area using multiplication? pg. 80	Lesson 8 How do I find the missing side when the area is known? pg. 85
Lesson 9 How do I find the area of irregular polygons? pg. 101	Lesson 10 How do I find the area of irregular polygons? (review) pg. 107	Lesson 11 How do I solve word problems involving both area and perimeter? pg. 124	Lesson 12 Area and perimeter review pg. 127

Math Workshop Routine	
Warm Up	5 minutes During this time you work with students on fact fluency through a variety of methods.
Mini-lesson	15 minutes This is where you make a connection to the previous lesson and briefly introduce your teaching point for the lesson. It must be kept short; therefore, it should be explicit.
Active Engagement	10 minutes This is where you have students briefly try out what was just taught during the mini-lesson. This is an opportunity for students to practice.

Perimeter and Area

Name _____

Write if the shape below is regular or irregular (3 & 4).

1.) _____

2.) _____

3.) _____

4.) _____

5.) Color in all the quadrilaterals.

6.) Color in the rectangles.

7.) Find the perimeter to the following problems.

8.) _____

9.) _____

10.) Find the unknown side to the polygons below.

11.) _____

12.) _____

area

The inside of a plane figure that is measured in square units.

congruent

the same size and same shape.

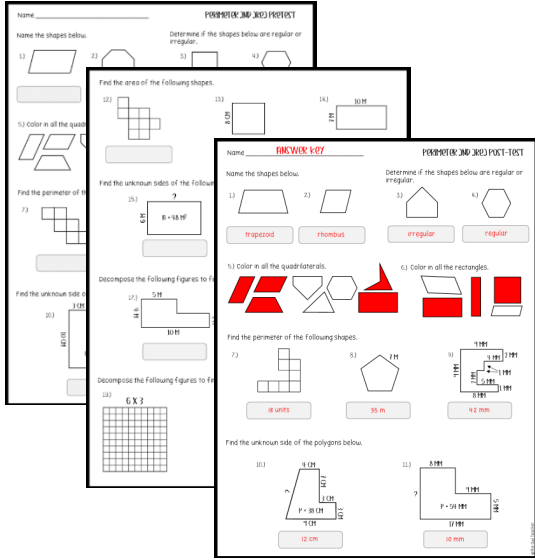
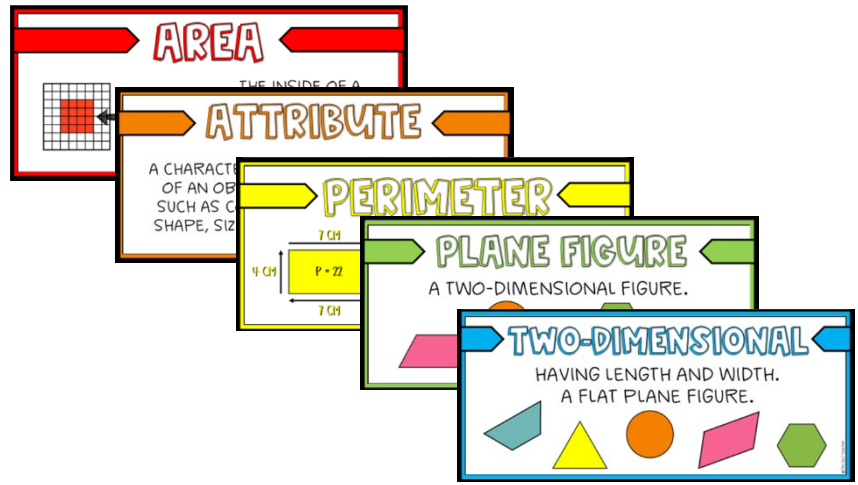
polygon

A closed plane figure made by line segments



VOCABULARY CARDS

CCSS aligned vocabulary cards for use during the lessons, your word walls, and so much more. These are also included in the digital version so you can project them on your board.



PRE-TESTS & POST TESTS

Pre-tests and Post-tests are provided so that you can determine what your students know and don't know. This also helps determine growth after the unit is complete.

UNIT OVERVIEW

A suggested unit overview and pacing is provided, though it's not necessary to follow it. This is to help make planning easy on you. It is also set up so you can just click on the lesson and it'll take you directly to it.

Unit Overview				
Click on the box to go directly to that lesson.				
LESSON 1 What are polygons and their characteristics? pg. 17	LESSON 2 What is perimeter and how do we find it? pg. 31	LESSON 3 What is perimeter and how do we find it? (Review) pg. 51	LESSON 4 How do I find the missing side when the perimeter is known? pg. 57	LESSON 5 How do I find the area and how do we find it? pg. 73
LESSON 6 How do you estimate area and do the units matter? pg. 80	LESSON 7 How do you find the area using multiplication? pg. 86	LESSON 8 How do I find the missing side when the area is known? pg. 93	LESSON 9 How do I find the area of irregular polygons? pg. 110	LESSON 10 How do I find the area of irregular polygons? (Review) pg. 117
LESSON 11 What is the distributive property? pg. 122	LESSON 12 What is the distributive property? (Continued Practice) pg. 128	LESSON 13 What is the relationship between area and perimeter? pg. 132	LESSON 14 How do I solve word problems involving both area and perimeter? pg. 136	LESSON 15 Unit Review pg. 140
Pre-test pg. 19-16		Post-test pg. 155-158		
VOCABULARY COVERED		CCSS COVERED		
area, attribute, congruent, decompose, distributive property, pentagon, perimeter, plane figure, polygon, quadrilateral, rectangle, side length, square		square unit, hexagon, trapezoid, two-dimensional, distributive property, irregular polygon, rectangle, figure, 3.G.1, 3.G.2, 3.MD.5a, 3.MD.5b, 3.MD.6, 3.MD.7, 3.MD.7a, 3.MD.7b, 3.MD.7c, 3.MD.7d, 3.MD.8, 3.OA.7		

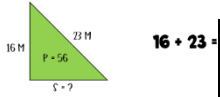
LESSON PLANS

Detailed and thorough lesson plans to help you work through the workshop model. It includes the "I Can" statement, CCSS, vocabulary, materials used, intervention ideas, and extensions.

Lesson 1: How do I find the missing side when the perimeter is known?	
I Can Statement I can find the missing side when the perimeter is known.	CCSS 3.MD.8
Vocabulary perimeter, side length	Materials Printed Missing Side Anchor Chart, Perimeter, Area & Missing Side Anchor Chart, Student Practice Sheet
Mini-Lesson After we are going to continue to practice finding the missing side when the perimeter is known. We are going to try to find the missing side of a polygon. (Provide students with a few examples) Provide students with the perimeter and ask them to find the missing side. (Demonstrate for students) Then, in groups, have students work on the practice sheet. (Provide additional assistance and help as needed) Check the answers together, modeling how to find the missing side.	I Can Statement I can find the missing side when the perimeter is known.
Active Engagement Today we are going to continue to practice finding the missing side when the perimeter is known. We are going to try to find the missing side of a polygon. (Provide students with a few examples) Provide students with the perimeter and ask them to find the missing side. (Demonstrate for students) Then, in groups, have students work on the practice sheet. (Provide additional assistance and help as needed) Check the answers together, modeling how to find the missing side.	CCSS 3.MD.7, 3.MD.8
Link & Independent Practice Today we are going to continue to practice finding the missing side when the perimeter is known. We are going to try to find the missing side of a polygon. (Provide students with a few examples) Provide students with the perimeter and ask them to find the missing side. (Demonstrate for students) Then, in groups, have students work on the practice sheet. (Provide additional assistance and help as needed) Check the answers together, modeling how to find the missing side.	Materials Student Practice sheet, "Error Analysis" sheet, graph paper
Intervention Try other strategies such as counting up, the use of a grid paper, or manipulatives.	Mini-Lesson After we are going to continue to practice finding the missing side when the perimeter is known. We are going to try to find the missing side of a polygon. (Provide students with a few examples) Provide students with the perimeter and ask them to find the missing side. (Demonstrate for students) Then, in groups, have students work on the practice sheet. (Provide additional assistance and help as needed) Check the answers together, modeling how to find the missing side.
Closing On a sticky note, have students write how to find the missing side when the perimeter is known and give it to you as a class.	Active Engagement Today we are going to continue to practice finding the missing side when the perimeter is known. We are going to try to find the missing side of a polygon. (Provide students with a few examples) Provide students with the perimeter and ask them to find the missing side. (Demonstrate for students) Then, in groups, have students work on the practice sheet. (Provide additional assistance and help as needed) Check the answers together, modeling how to find the missing side.
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	Intervention Try other strategies such as counting up, the use of a grid paper, or manipulatives.
	Extension Have students determine the total perimeter and area of all their figures or go with larger numbers.
	Closing Have students complete the "Error Analysis" practice sheet.

Finding a Missing Side

Step 1: **ADD** up the sides you have.

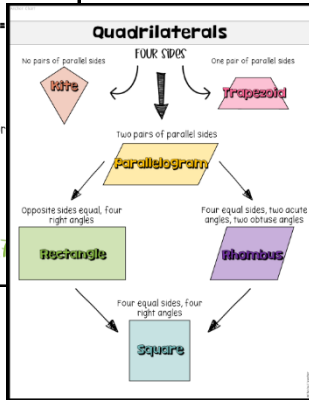


$$16 + 23 =$$

Step 2: **SUBTRACT** that answer from the perimeter given.

$$56 - 39 = 17 \text{ m}$$

THE MISSING SIDE IS 17 m

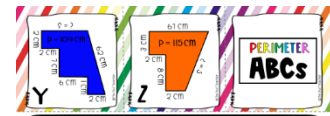


ANCHOR CHARTS

Detailed anchor charts that break things down for your students to help them understand important concepts.

ACTIVITIES

Hands-on, concrete activities that use manipulatives. Activities are created based on research and best practices. Students are engaged and enjoy math more.



ARE WE RELATED?
DIRECTIONS: Number of Players: 4
Object of Game: when players have four cards that they feel are related to one another.
Note: Students will need to complete the recording sheet to justify their relationship between the cards.
Rules:
1.) No talking, hand gestures, or sign language.
2.) Each player must have at least TWO cards in front of them face up at all times.
3.) Players can only STEAL to a teammate.
4.) Players cannot TAKE from a teammate.
5.) The game is finished when everyone feels they have a matching set.

PERIMETER ABCs
Directions: Read each card and find the missing perimeter.
To find the missing perimeter, add up all the sides.

ARE WE RELATED?
RECORDING SHEET
Draw the polygon.
Describe below how you know.
Is this shape regular or irregular?
Find the perimeter.

1 Celebrate
Find the area.
8 cm
YOUR KNOWLEDGE

2 Celebrate
Find the area.
2 mm
3 mm
10 mm
YOUR KNOWLEDGE

3 Celebrate
Is this shape regular or irregular?
YOUR KNOWLEDGE

4 Celebrate
Find the perimeter.
YOUR KNOWLEDGE

PERIMETER ABCs BOARD: MOVE BACK 1 SPACE, MOVE FORWARD 3 SPACES, FINISH, MOVE BACK 1 SPACE, MOVE FORWARD 3 SPACES, FINISH.

PRACTICE WORKSHEETS

Worksheets are provided to give students a chance to practice the newly learned skills and to work their way to mastery. This also provides you the opportunity to check for understanding. Answer keys are included.

ERROR ANALYSIS
Directions: The students below all made errors. Can you figure out what error? Explain below what error was made, and then fix it.

1) 5 cm, 10 cm, 10 cm, 14 cm, A = 90 cm²

2) 7 cm, 7 cm, P = 44 cm²

3) 4 cm, 15 cm, 15 cm, 9 cm, P = 38 cm

AN AREA ART GALLERY
Directions: Look at each picture and determine the area. Write the area on the line provided. Make sure to include the units.

I'M ON THE CASE!
Directions: Someone found the area to all these problems, but then stole a side! Find the missing side and write it in the box.

1) 9 cm, A = 96 cm²

2) 9 cm, A = 45 m²

3) 7 mm, A = 63 mm²

4) 9 cm, A = 54 m²

5) 6 cm, A = 48 cm²

6) 9 cm, A = 63 m²

7) 1 mm, A = 20 mm²

8) 9 km, A = 90 km²

BONUS: Color the picture frame with the picture frame with the best!

INCLUDES COLOR AND B/W VERSIONS!