learning focus:

✓ calculate area of 2D shapes and composite figures

✓ use nets to represent 3D figures and calculate surface area

✓ find volume of rectangular prisms with rational lengths and unit cubes

GEOMETRY UNIT
14 DAY CCSS-ALIGNED UNIT

6th GRADE

A MANEUVERING THE MIDDLE ® RESOURCE

GEOMETRY

6th GRADE

ready-to-go, scaffolded student materials

GEOMETRY UNIT
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GEOMETRY

6th GRADE

student friendly + real-world application

graphic organizers

Unit: Geometry
Student Handout 3

Name _____
Date _____ Pd _____

AREA OF COMPOSITE FIGURES

In art class, Mrs. Price is discussing how figures can be decomposed into different shapes. She projects the images below on a screen. Discuss and label the different ways you could decompose these figures into familiar shapes.

COMPOSITE FIGURES

• A _____

• We can find the _____ figure into famili_____ the area of each

Decompose the figures below. Then, use_____

12 ft
8 ft
9 ft

TOTAL AREA: _____

5 m
4 m
6 m
15 m

TOTAL AREA: _____

Use your understanding of composite figures to answer the questions below.

1. A rectangle is inscribed in a trapezoid. Determine the area of the shaded region.

10 in
5 in
8 in
7 in
15 in

2. A patio is being landscaped with trees and shrubs. How many square feet of landscaping will be around the patio?

14 ft
landscape
8 ft
3 ft
3 ft

3. A composite figure is created using rectangle and triangle. What is the are_____ figure?

7 cm
12.4 cm

5. A trapezoid is inscribed in a rectang_____ region. Circle the name of student who_____ mistake.

$4\frac{1}{2}$
3.8
6
7
9

(9)(4

Summarize today's lesson:

Unit: Geometry
Homework 3

Name _____
Date _____ Pd _____

AREA OF COMPOSITE FIGURES

Answer the questions below. Be sure to show your thinking.

1. A 2 ft by 2 ft square is divided into smaller squares and portions are shaded. What is the area of the shaded portion?

2. A garden is sodded in the shaded portion below. How many square feet were covered with sod?

$9\frac{1}{4}$ ft
6 ft
20 ft

Use the composite figures below to mark each statement as true or false. Justify your choices.

3.

FIGURE A	FIGURE B

FIGURE A
7 in
10 in
5 in
12 in

FIGURE B
6 in
7.5 in
5 in
5 in
3 in
14 in

STATEMENT	T/F?	JUSTIFY
a. The area of figure A can be found by finding the area of a trapezoid.		
b. The area of figure B can be found by decomposing the figure into a rectangle and trapezoid.		
c. Figure B has a total area of 75 in².		
d. The area of figure A is 50.5 in² more than the area of figure B.		

higher-level analysis

GEOMETRY

a 14 day CCSS-aligned unit
CCSS: 6.G.1, 6.G.2, 6.G.4

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streamline your planning process with unit overviews

GEOMETRY OVERVIEW

CCSS

STANDARDS

6.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V=lwh$ and $V=Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real world and mathematical problems.

6.G.4 Represent three-dimensional figures using nets made up for rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real world and mathematical problems.

BIG IDEAS

- A figure can be decompose
- The volume of a rectangular
- The area of a 2D figure desc

ESSENTIAL QUESTION

- Why do different shapes hav
- How are a net and a 3D figu
- How can the surface area of

✓ **key vocabulary**

✓ **vertical alignment**

GEOMETRY PACING GUIDE

CCSS

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Area of Rectangles and Parallelograms	Area of Triangles and Trapezoids	Area of Composite Figures	Problem Solving with Composite Figures	Area Quiz
Student Handout 1 Homework 1	Student Handout 2 Homework 2	Student Handout 3	Student Handout 4	
DAY 6	**DAY 7**			
Intro to 3D Figures	Intro to Nets			
Student Handout 5 Homework 5	Student Handout 6 Homework 6			
DAY 11	**DAY 12**			
Packing with Unit Cubes	Volume with Rational Lengths			
Student Handout 9 Homework 9	Student Handout 10 Homework 10			

sample pacing calendar

GEOMETRY OVERVIEW

CCSS

TOPIC	TEACHING TIPS
Area	• I love teaching area as a covering of a 2D object. This could be as simple as using graph paper to color various shapes with various dimensions. Students could create a picture with various shapes or even spell out their name. • Cheez-Its® are also great ways for students to physically cover an object. Consider giving students a specific number of Cheez-Its®, and then ask them the various dimensions that can be created with that area.
Composite Figures	• Consider having students draw the various shapes independent of each other with the measurements. Then, ask them to find the area of each shape. Finally, have them add or subtract based on the situation. By breaking these down into separate images, students tend to do better and use the appropriate measurements.
Nets and Surface Area	• To introduce nets and surface area, collect various boxes with different bases. Cut the edges and any excess that would not be a part of the net. Help students to see the various parts of the 3D object and how the net comes together. As an exploratory option, ask students to use their ruler to measure the different dimensions and find the surface area.
Volume	• Since volume is the space that a 3D object occupies, there are lots of great hands-on options. From a rubix cube to filling an object with unit cubes, have students explore with their hands. • Search www.pbslearningmedia.org for Volume of Prisms to find a few short videos to share.

teaching ideas

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GEOMETRY

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CCSS: 6.G.1, 6.G.2, 6.G.4

6th GRADE

unit study guide + assessments

✓ **quizzes**

✓ **editable unit test**

Unit: Geometry
Quiz 1

Name _____
Date _____ Pd _____

QUIZ: AREA

Calculate the area of the shapes below.

Answers
1. _____
2. _____
3. _____

1.

7.6 cm

11 cm

2.

9.8 ft

4 ft

3.

6 cm

5 cm

13 cm

Read the problems below. Sketch a pictu

5. A standard size volleyball court has ar
area of 1,800 square feet. The length of
court is 60 feet. What is the width of the
court?

Unit: Geometry
Review

Name _____
Date _____ Pd _____

GEOMETRY UNIT STUDY GUIDE

Solve each of the problems below. These represent the types of questions on your test. Be sure to ask questions if you need more help with a topic.

I CAN FIND THE AREA OF 2D FIGURES.

1. Find the area of the parallelogram

2.8 in

7.5 in

2. What is the area of the notebook paper?

3. A magazine picture of a purse is s
below. How much area does the purs
including the handle) take up in the m
layout?

6 cm

4 cm

11 cm

I CAN FIND THE AREA OF 2D SH

5. The front of a home is being pain
including the door. The door measur
2 ft. How many square feet will be p

12 ft

18 ft

SIXTH GRADE CURRICULUM

GEOMETRY

UNIT NINE: ANSWER KEYS

answer keys included