

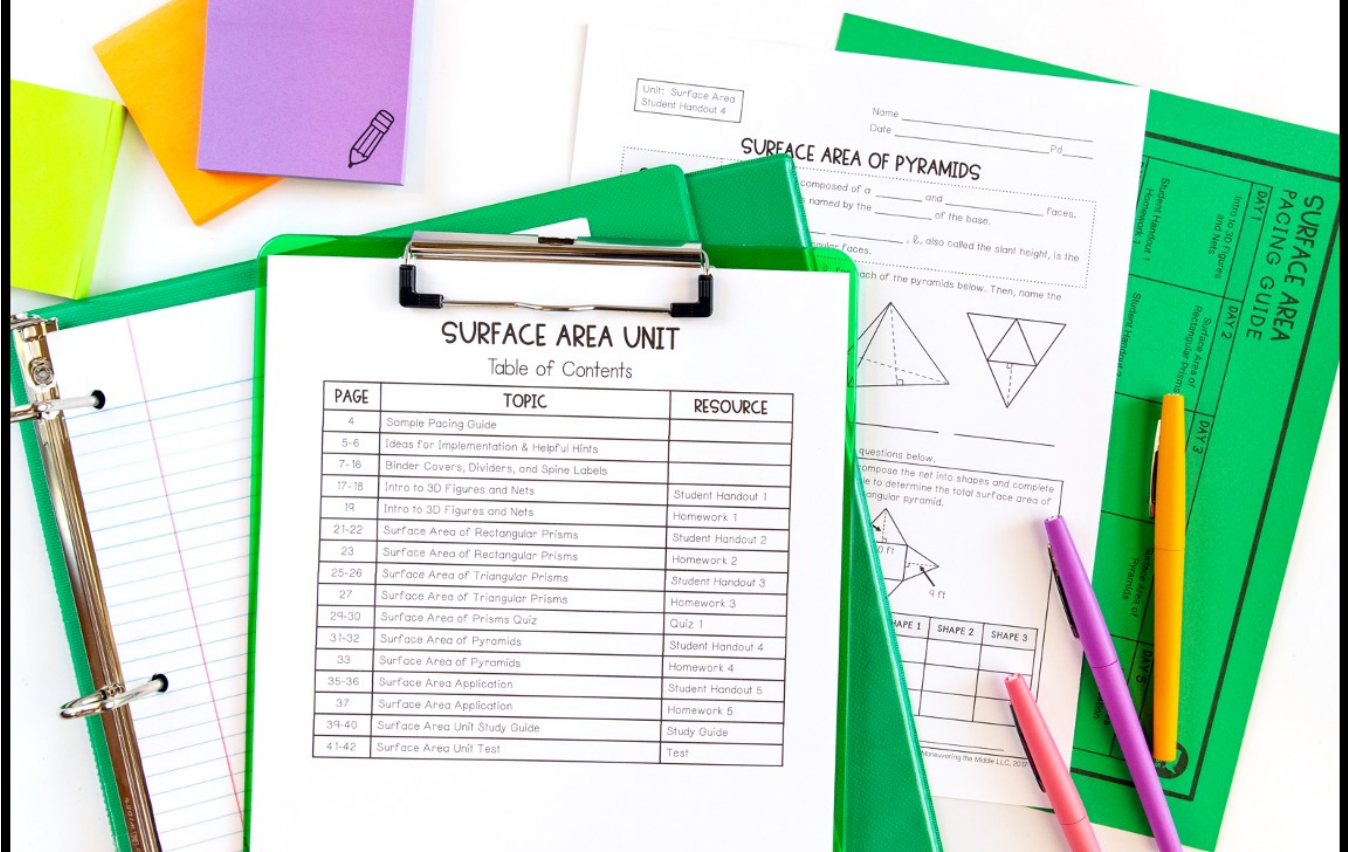
learning focus:

- ✓ determine the lateral and total surface area of prisms and pyramids
- ✓ connect a net with its corresponding 3D figure
- ✓ solve real-world problems involving lateral and total surface area of prisms and pyramids

SURFACE AREA UNIT



8 DAY CCSS-ALIGNED UNIT



A MANEUVERING THE MIDDLE® RESOURCE

SURFACE AREA



an 8 day CCSS-aligned unit
CCSS: 7.G.6

ready-to-go, scaffolded
student materials

SURFACE AREA UNIT

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student friendly + real-world
application


Unit: Surface Area
Homework 2

Name _____
Date _____ Pd _____

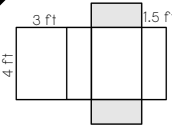
SURFACE AREA OF RECTANGULAR PRISMS

Match each correct answer to a letter and complete the riddle below.

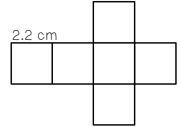
1 Find the total surface area of the cube-shaped gift below.



2 Find the lateral surface area of the prism.



3 Find the total surface area of the prism.



D: 12 ft ²	R: 29.04 cm ²
T: 1,624 cm ²	B: 45 ft ²
H: 28 in ²	M: 34 in ²

WHAT IS THE KEY?

4 6 1

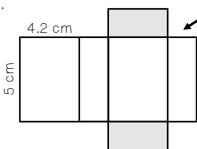
self-checking
practice

LATERAL SURFACE AREA

- Lateral surface area is the _____ of the areas of the surfaces of a solid except the _____.

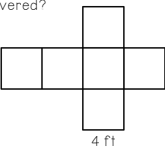
Use your understanding of surface area to answer the questions below. In 2-3, the base has been shaded for you.

2. Find the lateral and total surface area of the prism.



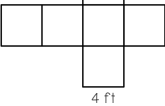
Lateral SA: _____
Total SA: _____

3. Find the lateral and total surface area of the prism.



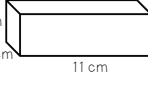
Lateral SA: _____
Total SA: _____

4. All of the surfaces of the cube net are being painted. How many square feet will be covered?



4 ft

6. Two students were asked to determine the total surface area of the rectangular prism. Determine what mistake each student made.



5 cm
5 cm
11 cm


Summarize today's lesson:

Unit: Surface Area
Student Handout 2

Name _____
Date _____ Pd _____

SURFACE AREA OF RECTANGULAR PRISMS

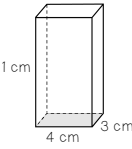
Jamie is tasked with wrapping an 8 in x 8 in x 8 in sized box for a birthday party. She only has 250 square inches of wrapping paper left. How could you determine if Jamie has enough wrapping paper to cover the box?



SURFACE AREA

- Surface area is the total _____ on the _____ of a three-dimensional object. It is measured in _____.
- Ex: _____

Use the dimensions of the rectangular prism to label the net. Then, calculate the area of all six faces and determine the total surface area.



11 cm
4 cm
3 cm

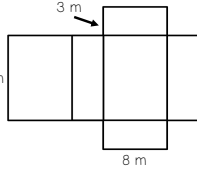
E			
A	B	C	D
F			

	AREA (cm ²)
A	
B	
C	
D	
E	
F	

Total Surface Area: _____

Use your understanding of surface area to answer the questions below.

1. Decompose the net into shapes and complete the table to determine the total surface area of the rectangular prism.



15 m
3 m
8 m

	SHAPE 1	SHAPE 2	SHAPE 3
FORMULA			
PLUG IN VALUES			
AREA			

Total Surface Area: _____

a. What do you notice about the different faces of the rectangular prism?

graphic
organizers

SURFACE AREA



an 8 day CCSS-aligned unit
CCSS: 7.G.6

streamline your planning
process with unit overviews

SURFACE AREA OVERVIEW



STANDARDS

7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

BIG IDEAS

- The surface area of a 3D figure is the sum of the area of all its faces.
- Surface area is the sum of the area of all the faces of a 3D figure.

ESSENTIAL QUESTION

- How can the surface area of a 3D figure be found?
- How are the surface areas of 3D figures related?



key vocabulary



vertical alignment



sample
pacing
calendar

SURFACE AREA PACING GUIDE



DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Intro to 3D Figures and Nets	Surface Area of Rectangular Prisms	Surface Area of Triangular Prisms	Surface Area of Prisms	Surface Area of Pyramids
Student Handout 1 Homework 1	Student Handout 2 Homework 2			
DAY 6	DAY 7			
Surface Area Application	Surface Area Unit Study Guide			
Student Handout 5 Homework 5	Unit Study Guide			

SURFACE AREA OVERVIEW



TOPIC	TEACHING TIPS
Nets	<ul style="list-style-type: none">• 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.
Rectangular Prisms	<ul style="list-style-type: none">• Search www.phslearningmedia.org for "Determining Surface Area with Unit Blocks" for a quick video. If you have time for exploration, allow groups to create their own prism with unit blocks.
Triangular Prisms	<ul style="list-style-type: none">• Help students to decipher between the base of the triangle and the base of the prism. It can be a challenge for students. I suggest having them sketch each figure and label the measurements before using a formula.
Pyramids	<ul style="list-style-type: none">• Help students to remember that since the sides of the pyramid are triangular, they need to divide by two when finding the area. Also, if the base is rectangular, then the measurement for the base of the triangles will differ.

teaching
ideas



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CCSS: 7.G.6

unit study guide + assessments



quizzes



editable unit test

Unit: Surface Area
Quiz 1

Name _____
Date _____ Pd _____

QUIZ: SURFACE AREA

Match the following three dimensional figures to the appropriate nets below.

1.

2.

3.

A.

B.

C.

D.

E.

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

4. The base of the rectangular prism is shaded. What is the lateral surface area?

Unit: Surface Area
Review

Name _____
Date _____ Pd _____

SURFACE AREA 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 SOLVE PROBLEMS INVOLVING LATERAL AND TOTAL SURFACE AREA.

1. A large game cube is wrapped with a sheet of paper. How many square inches of paper will be used to wrap five game cubes?

3 in

3. What is the lateral surface area of a triangular pyramid composed of equilateral triangles?

12 ft

5. What is the total surface area of the rectangular prism?

SEVENTH GRADE CURRICULUM

SURFACE AREA

UNIT EIGHT: ANSWER KEYS

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answer keys
included

