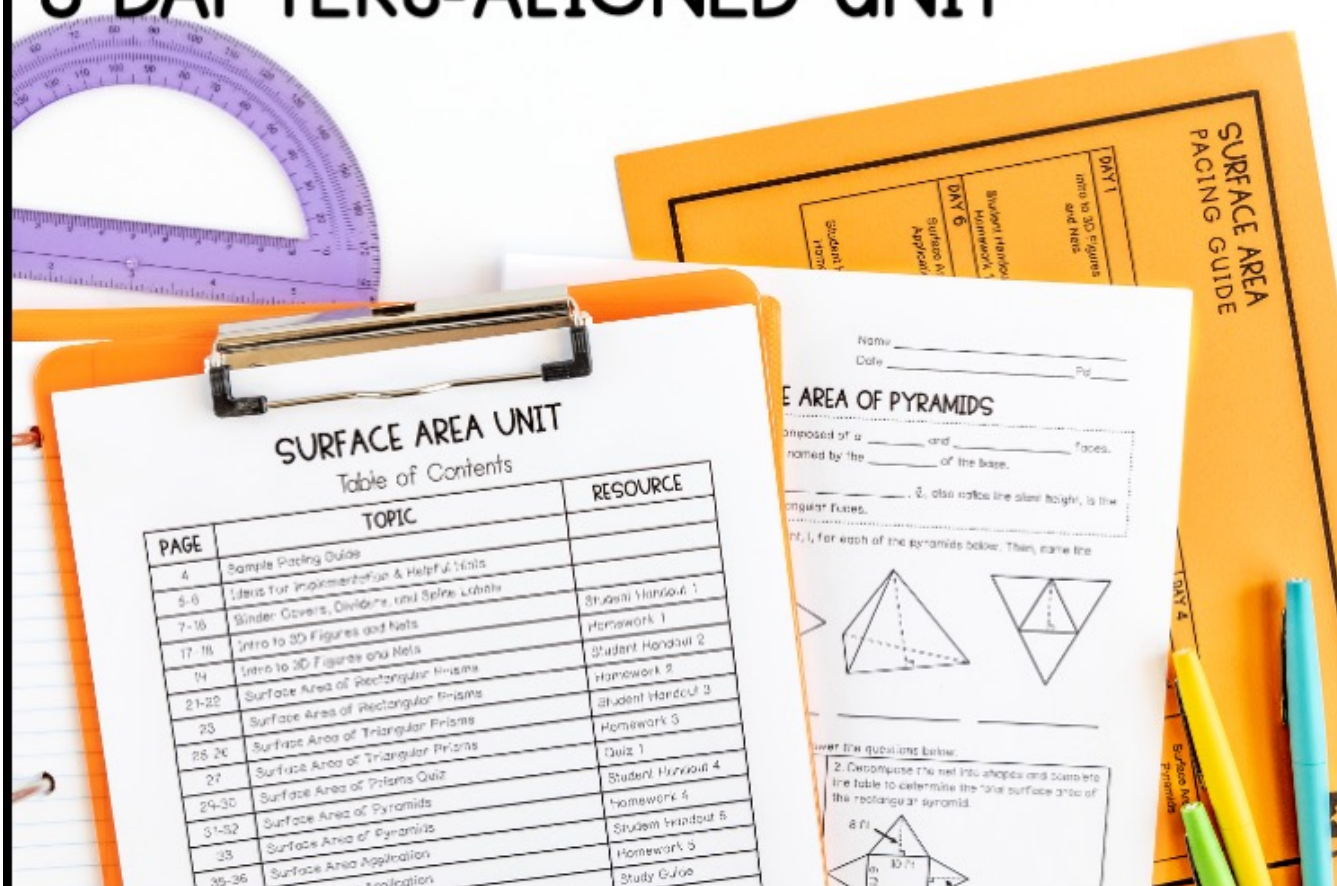


# learning focus:

- ✓ 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 TEKS-ALIGNED UNIT



A MANEUVERING THE MIDDLE® RESOURCE

# SURFACE AREA



an 8 day TEKS-aligned unit  
TEKS: 7.9D

ready-to-go, scaffolded  
student materials

## SURFACE AREA UNIT

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# SURFACE AREA



an 8 day TEKS-aligned unit  
TEKS: 7.9D

## student friendly + real-world application


self-checking practice

Unit: Surface Area  
Student Handout 2

Name \_\_\_\_\_  
Date \_\_\_\_\_ Pd \_\_\_\_\_

### SURFACE AREA OF RECTANGULAR PRISMS

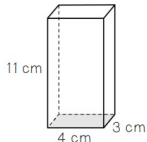
Jamie is tasked with wrapping an 8 in x 8 in x 8 in sized box for a birthday party. She only has 250 square inches of wrapping paper left. How could you determine if Jamie has enough wrapping paper to cover the box?



### SURFACE AREA

- Surface area is the sum of the areas of all the faces of a three-dimensional figure.
- Ex: \_\_\_\_\_

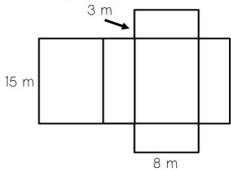
Use the dimensions of the rectangular prism and determine the total surface area.



Total Surface Area: \_\_\_\_\_

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

1. Decompose the net into shapes and color the rectangular prism.



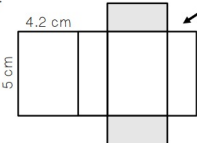
a. What do you notice about the different faces?

### LATERAL SURFACE AREA

- Lateral surface area is the sum of the areas of the lateral faces of a solid except the base and top.

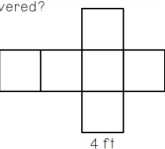
Use your understanding of surface area to answer the questions below. In 2-3, the base has been shaded for you.

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

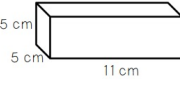


Lateral SA: \_\_\_\_\_  
Total SA: \_\_\_\_\_

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



6. Two students were asked to determine the surface area of the rectangular prism. The students correctly completed the work.



Determine what mistake each student made.

Summarize today's lesson:


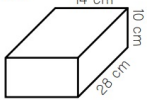
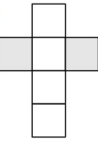
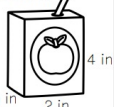
Unit: Surface Area  
Homework 2

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.	4 How many square centimeters of wrapping paper will be needed to wrap the shoe box?
2 Find the lateral surface area of the prism.	5 Find the lateral surface area of the net of the cube below.
3 Find the total surface area of the cube.	6 A label is placed around the juice box below, not including the bases. Determine the surface area of the label.

D: 12 ft <sup>2</sup>	R: 29.04 cm <sup>2</sup>	P: 32.18 cm <sup>2</sup>	L: 36 ft <sup>2</sup>
T: 1,624 cm <sup>2</sup>	B: 45 ft <sup>2</sup>	E: 24 ft <sup>2</sup>	O: 16.4 cm <sup>2</sup>
H: 28 in <sup>2</sup>	M: 34 in <sup>2</sup>	I: 54 in <sup>2</sup>	U: 12.96 cm <sup>2</sup>

WHAT IS THE KING OF THE PENCIL CASE?

4 6 1 3 5 2 1 3

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error analysis

# SURFACE AREA



an 8 day TEKS-aligned unit  
TEKS: 7.9D

streamline your planning  
process with unit overviews

## SURFACE AREA OVERVIEW



### SUPPORTING STANDARDS

7.9D Solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net.

### 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 QUESTIONS

- 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 Quiz	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"><li>• 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.</li></ul>
Rectangular Prisms	<ul style="list-style-type: none"><li>• Search <a href="http://www.pbslearningmedia.org">www.pbslearningmedia.org</a> 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.</li></ul>
Triangular Prisms	<ul style="list-style-type: none"><li>• 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.</li></ul>
Pyramids	<ul style="list-style-type: none"><li>• 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.</li></ul>

teaching  
ideas



# SURFACE AREA



an 8 day TEKS-aligned unit  
TEKS: 7.9D

## 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.

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. 7.9C, 7.9D**

1. A large game cube is wrapped with shrink wrap. How many square inches of shrink wrap 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 SIX: ANSWER KEYS

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answer keys  
included

