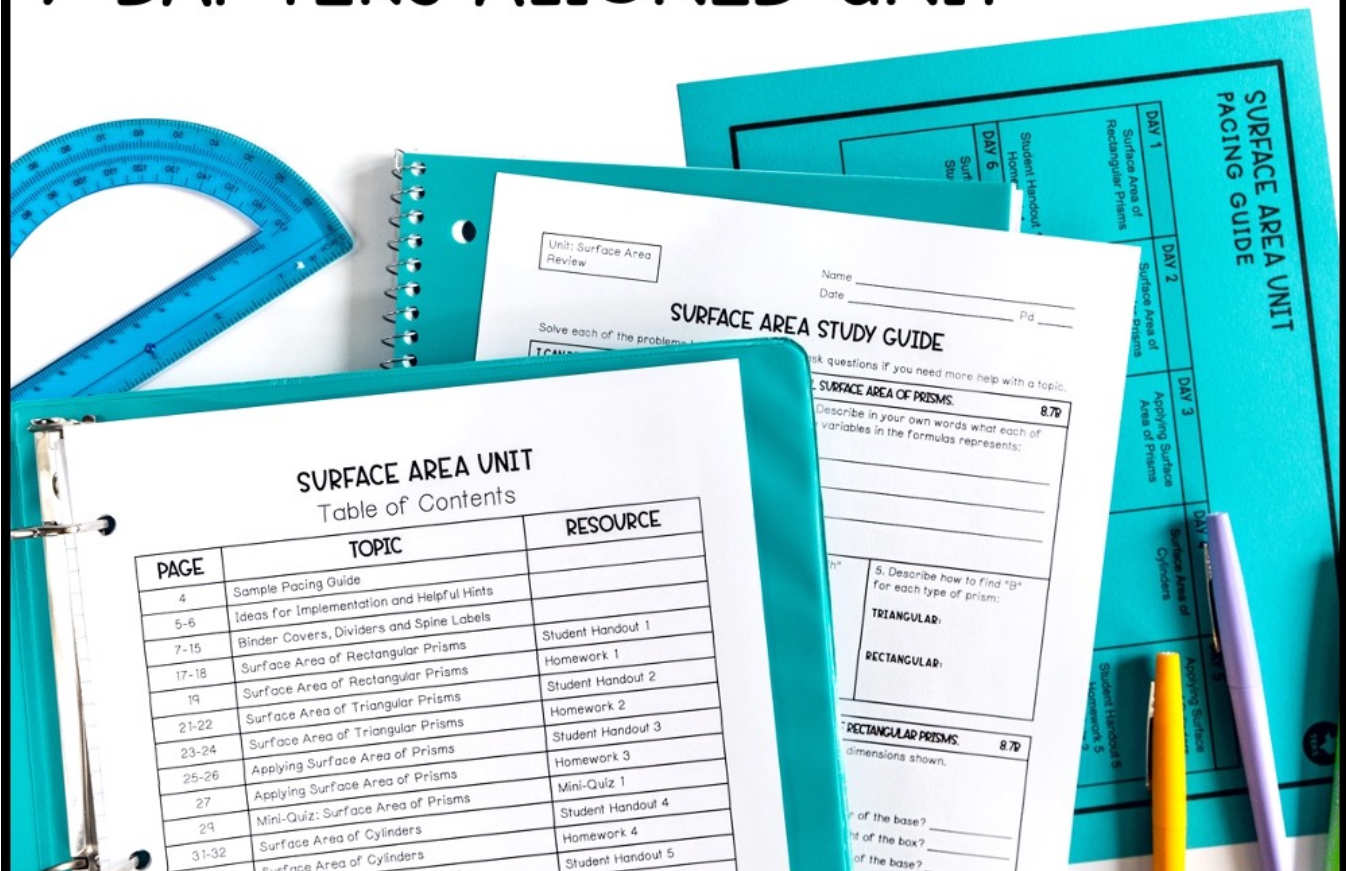


learning focus:

- ✓ use formulas to find lateral and total surface area of prisms and cylinders
- ✓ describe formulas for lateral and total surface area
- ✓ apply lateral and total surface area of prisms and pyramids in real-world situations

SURFACE AREA UNIT

7 DAY TEKS-ALIGNED UNIT



A MANEUVERING THE MIDDLE® RESOURCE

SURFACE AREA



a 7 day TEKS-aligned unit
TEKS: 8.7B

**ready-to-go, scaffolded
student materials**

SURFACE AREA UNIT

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SURFACE AREA



a 7 day TEKS-aligned unit

TEKS: 8.7B

student friendly + real-world
application

graphic
organizers

Unit: Surface Area
Student Handout 1

Name _____
Date _____ Pd _____

SURFACE AREA OF RECTANGULAR PRISMS

SURFACE AREA

- Surface area is the total _____ on the _____ of a _____-dimensional object. It will always be measured in _____.
- List some examples of a time you'd need to find surface area:

RECTANGULAR PRISMS

- Rectangular prism
- 1. Bases: the _____
- 2. Lateral faces: the _____
- The _____
- the two _____

Shade the bases of each rectangular prism.

The following formulas are used to find the surface area of a rectangular prism. Define each variable and then describe the formula.

	FORMULA	VAR
LATERAL	$S = Ph$	P: _____ h: _____
TOTAL	$S = Ph + 2B$	P: _____ h: _____ B: _____

Describe what makes the formula for total surface area:

In 1-2, list the name of the 3D figure. Then, find the lateral and total surface area. Assume the base is the bottom.

1. Name: _____

P: _____
h: _____
B: _____

2. Name: _____

P: _____
h: _____
B: _____

	LATERAL SURFACE AREA	TOTAL SURFACE AREA
FORMULA		
PLUG IN #S		
SOLUTION		

Use the formulas for surface area to find the lateral and total surface area of the prism.

3. Find the lateral surface area of the prism.

5. Trenton is going to close and wrap the box. How many square feet of wrapping paper will he need?

6. Lilianna's work to find the total surface area of the prism is shown below.

a. Describe Lilianna's error.

b. Find the correct total surface area.

Unit: Surface Area
Homework 1

Name _____
Date _____ Pd _____

SURFACE AREA OF RECTANGULAR PRISMS

Match each correct answer to a letter and complete the riddle below. For each rectangular prism, assume that the base is the bottom.

1 Find the total surface area of the number cube.

2 Find the lateral surface area of the prism.

3 Find the total surface area of the prism.

4 Find the total surface area of the prism.

5 Find the lateral surface area of the prism.

6 Find the lateral surface area of the tissue box.

7 Find the total surface area of the prism.

8 Find the lateral surface area of the prism.

L: 168 in ²	O: 96 in ²	A: 432 in ²	L: 280 in ²	I: 166 in ²	H: 24 in ²
R: 160 in ²	D: 624 in ²	S: 894 in ²	R: 150 in ²	N: 302 in ²	B: 242 in ²

WHERE DO YOU PUT SMART HOT DOGS?

6 4 1 6 4 6 2 8 6 7 5 3

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interactive
practice

SURFACE AREA



a 7 day TEKS-aligned unit
TEKS: 8.7B

streamline your planning
process with unit overviews

SURFACE AREA OVERVIEW



READINESS STANDARDS

8.7B Use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders.

DIG IDEAS

- Formulas can be used to find surface area of three-dimensional figures.
- Formulas can connect and explain prior knowledge of surface area.

ESSENTIAL QUESTIONS

- How can a surface area formula be used to find the surface area of a prism?
- What makes formulas for lateral and total surface area different?
- What do the variables in surface area formulas represent?
- Why is identifying the base of a prism important?



key vocabulary



vertical alignment



sample
pacing
calendar

SURFACE AREA UNIT PACING GUIDE



DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Surface Area of Rectangular Prisms	Surface Area of Triangular Prisms	Applying Surface Area of Prisms	Surface Area of Cylinders	Applying Surface Area of Cylinders
Student Handout 1 Homework 1	Student Handout 2 Homework 2			
DAY 6	DAY 7			
Surface Area Study Guide	Surface Area Unit Test			
Review	Test			

SURFACE AREA UNIT OVERVIEW



TOPIC	TEACHING TIPS
Surface Area of Rectangular Prisms	<ul style="list-style-type: none">Bring in a shoebox or cereal box from home to provide a visual as you discuss the bases and height of rectangular prisms.Help students streamline the process of using the surface area formulas for prisms by creating some automatic habits. For example, to find surface area of a prism, students might follow a sequence such as:<ol style="list-style-type: none">Shade the base of the prismIdentify and write out the formula neededFind and list the values of P, h and BPlug the values into the formula and solve
Surface Area of Triangular Prisms	<ul style="list-style-type: none">Discuss and reiterate with students the difference between the height of the base and the height of the prism, and when each should be used. The height of the base is used only to find the area of the triangular base, while the height of the prism should be plugged in for "h" in the surface area formulas.Bring 3D models of prisms to allow students to point out and discuss the bases and the height in a triangular prism. I like to set the prism on one of its lateral surfaces to discuss how the base of a prism isn't always the bottom surface it's sitting on.
Surface Area of Cylinders	<ul style="list-style-type: none">During this lesson I bring in a cardboard cylindrical container, such as an oatmeal container, from home. I cut along the circumference of each base in order to open up the container in front of the students revealing the two circular bases and the rectangular lateral face.Using formulas can become repetitive and dull for students. This is always a great time to allow students to write with dry erase markers on their desks or dry erase boards to diversify the practice.

teaching
ideas



SURFACE AREA



a 7 day TEKS-aligned unit
TEKS: 8.7B

unit study guide + assessments

✓ quizzes

✓ editable unit test

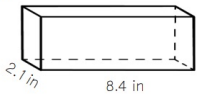
Unit: Surface Area
Mini-Quiz 1

Name _____
Date _____ Pd _____

SURFACE AREA OF PRISMS MINI-QUIZ

Solve each question below and be sure to show all work.

Find the lateral and total surface area of the prism.



1. Lateral surface area: _____
2. Total surface area: _____

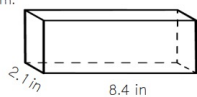
5. Every surface of the block shown will be painted? _____

Unit: Surface Area
Mini-Quiz 1

SURFACE AREA

Solve each question below and be sure to show all work.

Find the lateral and total surface area of the prism.



1. Lateral surface area: _____
2. Total surface area: _____

5. Every surface of the block shown will be painted? _____

Unit: Surface Area
Review

Name _____
Date _____ Pd _____

SURFACE AREA STUDY GUIDE

Solve each of the problems below and be sure to ask questions if you need more help with a topic.

I CAN DESCRIBE THE FORMULAS FOR LATERAL AND TOTAL SURFACE AREA OF PRISMS. 8.7B

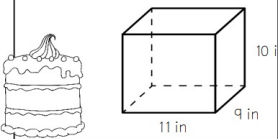
1. Fill out the formulas used to find the total and lateral surface area of prisms: _____
2. Describe in your own words what each of _____

LATERAL: _____
TOTAL: _____

3. Describe how to find "P" for each type of prism:
TRIANGULAR: _____
RECTANGULAR: _____

I CAN USE FORMULAS TO FIND LATERAL SURFACE AREA

6. Michelle orders a cake that comes _____



7. Find the lateral surface area of the _____

FORMULA: _____
PLUG IN VALUES: _____
SOLUTION: _____

EIGHTH GRADE CURRICULUM

SURFACE AREA

UNIT SEVEN: ANSWER KEY

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answer keys
included