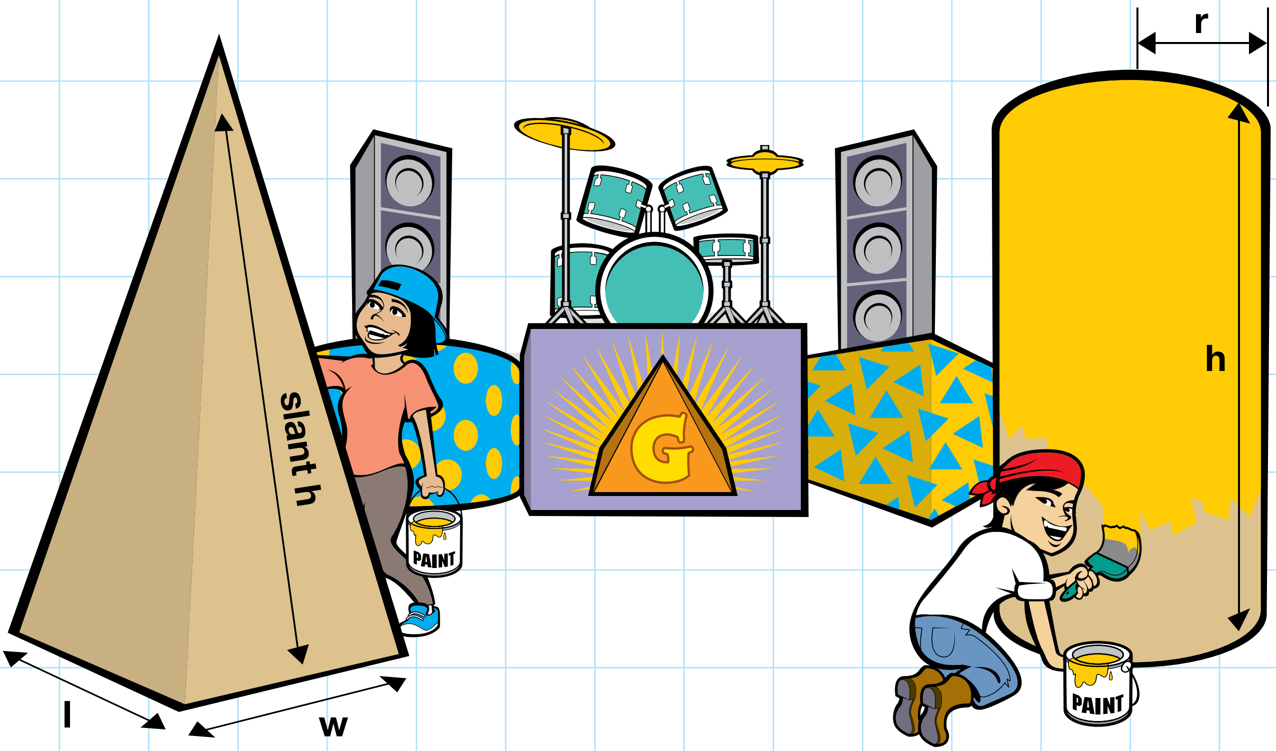
POSTER/TEACHING GUIDE

Expect the Unexpected With Math®

SETTING THE STAGE WITH GEOMETRY

Lessons & Worksheets to Build Skills in

Measuring Perimeter, Area, Surface Area, and Volume



Aligned with NCTM Standards

Math Grants Available

THE ACTUARIAL FOUNDATION®

Dear Teacher:

Welcome to Setting the Stage with Geometry, a new math program aligned with NCTM standards that is designed to help students in grades 6–8 build and reinforce basic geometry skills for measuring 2D and 3D shapes.

Developed by The Actuarial Foundation, this program seeks to provide skill-building math activities to help your students become successful in the classroom and in real-world situations outside of school. We hope you enjoy this new program!

Sincerely,

The Actuarial Foundation

GETTING STARTED

In the lessons and worksheets for this program, students will learn and reinforce these geometry skills:

1. **measuring perimeter and area of 2D shapes;**
2. **measuring surface area of 3D shapes; and**
3. **measuring volume of 3D shapes.**

The materials are taught through this story line: A popular band called The Geometrics is planning a big concert at a school, but they need help to build a stage and promote the show. Some students volunteer to become the Geometrics Stage Crew and use their geometry knowledge to help.

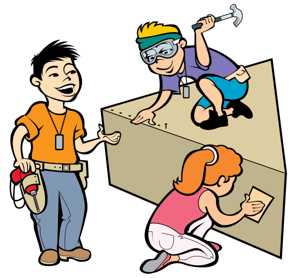
Three lesson plans teach basic measuring skills; each lesson features a **worksheet**, and is also supplemented by a **bonus worksheet** and a **take-home activity**.

Before launching the lessons, you can engage students in a discussion about real-world geometry with the **classroom poster**. Show your class how geometric shapes can be found in the concert setting on the poster. Ask students where they have seen these shapes in their daily lives.

The poster includes fundamental formulas you can display in the classroom year-round. In addition, there is a handy **reference sheet** of formulas and definitions for teachers and students. The reference sheet also features drawings of all the shapes included in these lessons.

Note: All program pages appear in full color, yet are designed to easily reproduce in black and white.

LESSON 1



PERIMETER AND AREA OF 2D SHAPES

Geometry Works! The Stage Takes Shape

OBJECTIVES: Students will understand formulas used to measure the perimeter and area of these basic two-dimensional shapes: rectangles, circles, and triangles.

Time Required: 20 minutes, plus additional time for worksheets

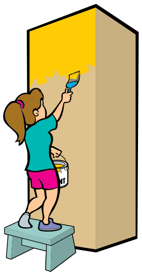
Materials: Student Worksheet 1

Extensions: Bonus Worksheet 1, Take-Home Activity 1

DIRECTIONS:

1. Review with students the concept of perimeter. *Perimeter* is the total distance around the outside of a **polygon** (a closed figure made up of line segments).
2. On the board, draw a rectangle labeled with a length of 4 feet and width of 3 feet. Then draw a **right triangle** with a base of 4 feet, height of 3 feet, and *hypotenuse* (the side opposite the right angle) of 5 feet. Explain that to measure the perimeter of any polygon, you add together the lengths of each side.
3. Ask students what the perimeter of the rectangle is. Show students the formula for the rectangle's perimeter on the poster and ask why it's correct. The formula of P (perimeter) $= 2 \cdot (l + w)$ is correct because a rectangle has two sets of sides that are each of equal length. The perimeter of this rectangle is $2 \cdot (4 + 3) = 14$ feet.
4. Ask what the perimeter of the triangle is. Show them the formula: $P =$ side a + side b + side c. The perimeter is $3 + 4 + 5$, or 12 feet.
5. Tell students that triangles can be classified by angles in three ways: 1) **right triangles** with one 90° angle where the base and height meet; 2) **acute triangles** with all angles less than 90°; and 3) **obtuse triangles** with one angle greater than 90°. The angles of any triangle equal 180°.
6. Draw a circle on the board. Draw a line from the center of the circle to the edge and mark it as 3 feet. Tell students that this is the *radius*. Ask them what the *diameter* is. (The answer is 6 feet.) Then explain that the length of the line that forms the circle is called the *circumference*. There is a unique formula for calculating the circumference: C (circumference) $= \pi \cdot d$ (diameter). Tell students that π is the circumference of any circle divided by its diameter and equals a number with an infinite decimal: 3.14159.... The decimal continues on infinitely, but to solve most math problems, people use a rounded ratio of 3.14. Ask students to figure out the circumference of the circle you have drawn. Ask them to provide the answer to the nearest half foot. As $3.14 \cdot 6 = 18.84$ feet, the answer is 19 feet.
7. Now go over the definition of *area* on the poster: the measure of a bounded region of a two-dimensional shape expressed in square units, *e.g.*, square inches or square feet. Show your students the formula for area of a rectangle: A (area) $= l \cdot w$. Ask them to calculate the area of the rectangle you had drawn earlier ($4 \cdot 3 = 12$ square feet).
8. Now point out the formula for the area of a triangle on the poster: $A = 1/2 \cdot [b$ (base) $\cdot h$ (height)]. Refer back to your drawing of a right triangle with a base of 4 feet and height of 3 feet. Ask students to calculate the area. The answer is $1/2 \cdot (4 \cdot 3) = 6$ square feet.
9. Finally, go over the area formula for circles. Again, refer to the poster: $A = \pi \cdot r^2$, where r^2 means radius squared, or $r \cdot r$. The answer is π (3.14) $\cdot r^2$ $(3 \cdot 3) = 28.26$ square feet. Ask students to provide the answer to the nearest half foot. The answer is 28.5 feet or 28 feet and 6 inches.
10. Distribute **Student Worksheet 1**. Tell students they should complete all the questions. Explain that the bonus question introduces a new formula for the area of trapezoids. Go over correct answers as a class using the **Worksheet Answer Key** (see back cover).

LESSON 2



SURFACE AREA OF 3D SHAPES
That Should Cover It!

OBJECTIVES: Students will understand formulas used to measure the surface area of these basic three-dimensional shapes: a rectangular prism, a cylinder, and a square pyramid.

Time Required: 20 minutes, plus additional time for worksheets

Materials: Student Worksheet 2

Extensions: Bonus Worksheet 2, Take-Home Activity 2

DIRECTIONS:

1. After mastering the area of 2D shapes, students can now learn the formulas to measure 3D shapes.
2. Draw a rectangular prism on the board with these measurements: height = 3 feet, length = 4 feet, and width = 5 feet.
3. Show students the surface area formula for rectangular prisms on the poster: $SA = 2 \cdot (l \cdot w + l \cdot h + w \cdot h)$. Explain to them that the *surface area* of 3D objects is measured in square units, just like the area of 2D objects, and is the sum of all of the 3D object's surfaces.
4. Ask students what the surface area is of the shape you have drawn. The answer is $2 \cdot (20 + 12 + 15) = 94$ square feet.
5. Now draw a cylinder and mark the dimensions with the radius at 3 feet and the height at 4 feet.
6. Show students the surface area formula for cylinders on the poster: $SA = (2 \cdot \pi \cdot r^2) + (\pi \cdot d \cdot h)$ and ask them to calculate the answer to the nearest half foot. As $(2 \cdot 3.14 \cdot 9) + (3.14 \cdot 6 \cdot 4) = 131.88$ square feet, the answer is 132 square feet.
7. Finally, draw a square pyramid on the board and mark the dimensions with a base length of 6 feet and a base width of 6 feet. Show the slant height as 5 feet by drawing a perpendicular line from the center of one of the base sides to the top of the pyramid. The square pyramid has a base area (*BA*) measurable by $l \cdot w$ like any square or rectangle.
8. Show students the surface area formula for square pyramids on the poster, $SA = (BA) + 1/2 \cdot P \cdot slant\ h$ and ask students to calculate the answer. This formula adds together the area of the base with the area of the four triangular sides of the square pyramid. The *P* in the formula refers to the perimeter of the *base*. The answer is $36 + 1/2 \cdot 24 \cdot 5 = 96$ square feet.
9. Distribute **Student Worksheet 2**. Tell students they should complete all the questions. You may want to take some extra time in class to go over the bonus question, which introduces the formula for measuring the surface area of a cone [$SA = (\pi \cdot r^2) + (\pi \cdot r \cdot slant)$]. Go over all correct answers as a class, referring to the **Worksheet Answer Key** (see back cover).

LESSON 3

VOLUME OF 3D SHAPES
Pack It Up!
What Will Fit?

OBJECTIVES: Students will understand formulas used to measure the volume of these basic three-dimensional shapes: a rectangular prism, a cylinder, and a square pyramid.

Time Required: 20 minutes, plus additional time for worksheets

Materials: Student Worksheet 3

Extensions: Bonus Worksheet 3, Take-Home Activity 3

DIRECTIONS:

1. Explain to your students that now that they've mastered measuring the surface area of 3D shapes, they can move on to measuring *volume*, which is the amount of space inside a 3D shape, measured in cubic units. Refer to the poster, which provides essential formulas.
2. Again, draw a rectangular prism on the board like the one from the Lesson 2 surface area unit with these measurements: height = 3 feet, length = 4 feet, and width = 5 feet.
3. Show students the volume formula for rectangular prisms on the poster: V (volume) $= l \cdot w \cdot h$. Ask students what the volume of the prism is. The answer is $4 \cdot 5 \cdot 3 = 60$ cubic feet.
4. Now draw a cylinder again with the same dimensions as in Lesson 2: The radius is 3 feet and the height is 4 feet.
5. Show students the volume formula for cylinders on the poster: $V = \pi \cdot r^2 \cdot h$. Ask students what the volume of the cylinder is when rounded to the nearest half foot. As $3.14 \cdot 9 \cdot 4 = 113.04$ cubic feet, the answer is 113 cubic feet.
6. You might add that a cylinder is like a barrel, and volume measurement can help determine how much liquid will fit in a container this size. One cubic foot = 7.48 gallons. Ask students how much water this cylinder would hold. The answer is $7.48 \cdot 113.04$, or 845.54 gallons (when rounded to the nearest hundredth). Students may need a calculator to solve this problem.
7. Finally, draw a square pyramid on the board with the same dimensions as in Lesson 2: The square pyramid has a base length of 6 feet and a base width of 6 feet. The height of the pyramid is 4 feet.
8. Show students the volume formula for square pyramids on the poster: $V = 1/3 \cdot BA \cdot h$. Ask students for the volume of the square pyramid. The answer is $1/3 \cdot 36 \cdot 4 = 48$ cubic feet.
9. Distribute **Student Worksheet 3**. Tell students they should complete all the questions. You may want to take some extra time to go over the bonus question, which introduces the formula for the volume of a cone [$V = \pi \cdot 1/3 \cdot r^2 \cdot h$]. Go over all correct answers as a class referring to the **Worksheet Answer Key** (see back cover).

Look for more math resources at The Actuarial Foundation Web site at:
www.actuarialfoundation.org/programs/for_teachers.shtml

- Advancing Student Achievement® Grants
- "Expect the Unexpected With Math®" Series:
  - *Shake, Rattle, & Roll* (probability)
  - *Bars, Lines, & Pies* (graphing)
  - *Conversions Rock* (converting decimals, fractions, and percents)
- The Math Academy Series: Using Math in the Real World

Also look for printable program copies at: www.scholastic.com/unexpectedmath

Reference Sheet

Perimeter, Area, Surface Area, and Volume:

Review of Terminology, Basic Shapes, and Formulas

TERMINOLOGY

area: the measure of a bounded region of a two-dimensional shape expressed in square units

circumference: the distance around the edge of a circle

diameter: the distance across a circle through its center point

hypotenuse: the side opposite the 90° angle in a right triangle, also the longest side of a right triangle

perimeter: the total distance around the outside of a polygon

pi or π: the circumference of any circle divided by its diameter, rounded to the number 3.14

radius: the measure from the center of a circle to a point on the circle

slant: the diagonal distance from the top of a cone to its base

slant height: the height of one of the triangular faces of a pyramid

surface area: the sum of all the areas of all surfaces of a three-dimensional object, measured in square units

volume: the amount of space inside a three-dimensional shape, measured in cubic units

ABBREVIATIONS:	d = diameter	r = radius
A = area	h = height	SA = surface area
b = base	l = length	slant h = slant height
BA = base area	P = perimeter	V = volume
C = circumference	π = pi = 3.14	w = width

BASIC SHAPES AND FORMULAS

2D SHAPES: PERIMETER AND AREA

Rectangle

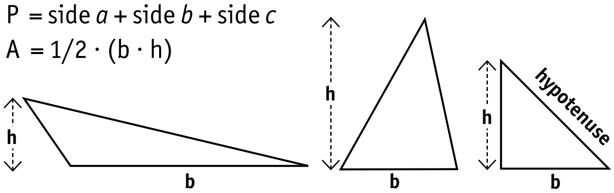
P = 2 · (l + w)

A = l · w

Triangle

P = side *a* + side *b* + side *c*

A = 1/2 · (b · h)

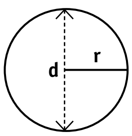


OBTUSE TRIANGLE ACUTE TRIANGLE RIGHT TRIANGLE

Circle

C = π · d

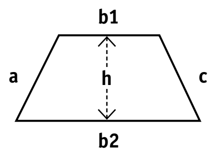
A = π · r^2



Trapezoid

P = side *a* + b1 + b2 + side *c*

A = 1/2 · (b1 + b2) · h

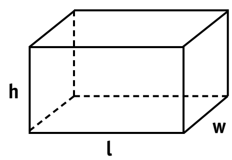


3D SHAPES: SURFACE AREA AND VOLUME

Rectangular Prism

SA = 2 · (l · w + l · h + w · h)

V = l · w · h

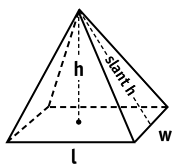


Square Pyramid

SA = (BA) + 1/2 · P · slant h

V = 1/3 · BA · h

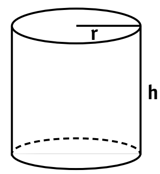
Note: base area (BA) of a square or rectangular pyramid is l · w *of the base, and* P *is perimeter of the base.*



Cylinder

SA = (2 · π · r^2) + (π · d · h)

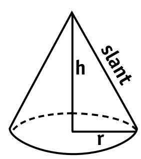
V = π · r^2 · h



Cone

SA = (π · r^2) + (π · r · slant)

V = π · 1/3 · r^2 · h



Student Worksheet 1

Name:______________________________ Date:____________

Geometry Works!

The Stage Takes Shape

The popular band The Geometrics wants to play a special concert at your school, but they need a stage crew to help. The first step for the Geometrics Stage Crew is **building an elaborate stage featuring differently shaped sections.**

1 First, they want a main stage that is rectangular-shaped, measuring a length of 24 feet and a width of 16 feet. What are the perimeter and area of that stage?

Perimeter: **Area:**

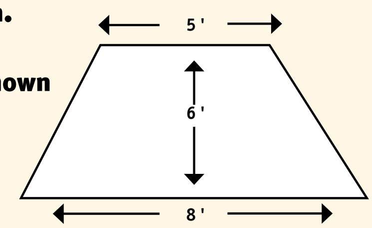
2 Second, the band's lead guitarist wants the Geometrics Stage Crew to build a smaller circular stage in front of the main stage that he can step onto and play a solo. The diameter has to be one-third of the length of the main stage. What is the circumference and area? Round your answer to the nearest foot.

Circumference: **Area:**

3 The bass player has a thing for triangles and sees herself on a triangular platform off to the left of the stage. When viewed from above, the right triangle has a height of 8 feet, a base of 6 feet, and a third side (called the ***hypotenuse***) of 10 feet. What is the perimeter and area?

Perimeter: **Area:**

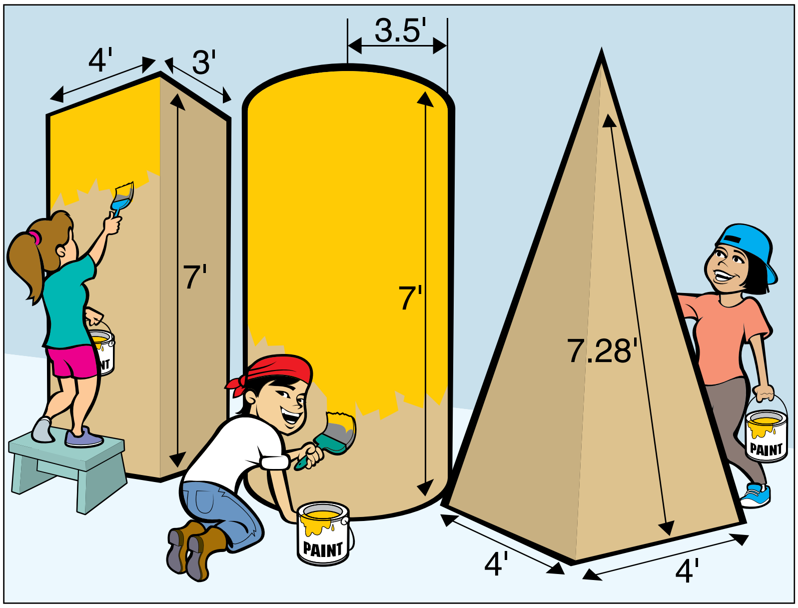
BONUS: **The drummer wants to be on a raised trapezoid-shaped platform. This requires the Geometrics Stage Crew to learn a new formula for the area of trapezoids [$A = 1/2 \cdot (b1 + b2) \cdot h$]. The trapezoid is shown in the diagram here with the measurements indicated. Base 1 ($b1$) = 8 feet. Base 2 ($b2$) = 5 feet. The height measures 6 feet. What is the area?**



Student Worksheet 2 Name: ______________________ Date: ____________

That Should Cover It!

The Geometrics love shapes. For the upcoming concert, the three main players each want to emerge from human-size shapes of a rectangular prism, a cylinder, and a square pyramid. While they already have these props built, the band asks the Geometrics Stage Crew to paint over them completely (even the bottom of each object). The stage crew knows that 1 gallon of paint covers 350 square feet. To buy the right amount of paint, **the stage crew has to calculate the surface area of each shape.**



1 The dimensions of the rectangular prism for the lead guitarist are height = 7 feet, width = 4 feet, and length = 3 feet.

Surface Area =

2 The dimensions of the cylinder for the drummer are radius = 3.5 feet and height = 7 feet. Solve with a decimal, then also round to the nearest half foot.

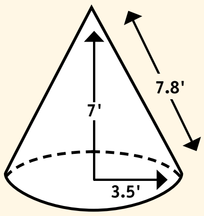
Surface Area =

3 The dimensions of the square pyramid for the bass player are base length = 4, base width = 4, and a slant height of 7.28 feet. Solve with a decimal, then also round to the nearest half foot.

Surface Area =

4 Can the stage crew paint the surface area of all three shapes with just one can of paint?

BONUS: **The drummer says that he'd also like to have a backup cone with the same height and radius as the cylinder and a slant of 7.8 feet. The stage crew needs a new formula to figure out the surface area of a cone:** $SA = (\pi \cdot r^2) + (\pi \cdot r \cdot \text{slant})$.



a. What is the surface area? Express as a decimal and then round to the nearest foot.

b. If one gallon of paint covers 350 square feet, about how much of a gallon is needed to paint the cone?

Student Worksheet 3 Name:______________________ Date:__________

Pack It Up!

What Will Fit?

The Geometrics Stage Crew now has to transport the painted props of a rectangular prism, a cylinder, and a square pyramid to the concert. They have to make sure the van they have is big enough to carry the props. To do this, they are going to **measure the volume of the cargo space and compare that to the volume of the three objects they have.**

THE DIMENSIONS OF THE OBJECTS AGAIN ARE:

Rectangular Prism: height = 7 feet, width = 4 feet, and length = 3 feet

Cylinder: radius = 3.5 feet and height = 7 feet

Square Pyramid: base length = 4, base width = 4, a slant height of 7.28 feet, and a height of 7 feet

1 First, get the complete volume of all the objects combined.

a. What is the volume of the rectangular prism?______________________

b. What is the volume of the cylinder? (Give the decimal answer and then round it to the nearest cubic foot.) __________

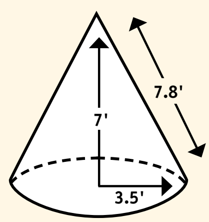
c. What is the volume of the square pyramid? ______________________

d. What is the total volume of all the objects combined, rounded to the nearest foot? ______________________

2 The van cargo space measures 8 feet tall by 5 feet wide by 13 feet deep. What is the volume of the cargo space?

3 Based on the volume measurements, can you estimate if the objects will fit in the van?

BONUS: **Based on volume, would there still be room for the cone from the bonus section of Worksheet 2? The radius of the cone = 3.5 feet and height = 7 feet and slant = 7.8 feet. To calculate the volume (cubic measurement) of the cone, you need to learn a new formula: $V = \pi \cdot 1/3 \cdot r^2 \cdot h$.**



WORKSHEET ANSWER KEY

Student Worksheet 1: Geometry Works! The Stage Takes Shape

1. Perimeter: 2 · (24 + 16) = 80 feet
   Area: 24 · 16 = 384 square feet
2. 8 feet is one-third the length of the main stage.
   Circumference: 3.14 · 8 = 25.12 feet, rounded = 25 feet
   Area: 3.14 · 4^2 = 50.24 square feet, rounded = 50 square feet
3. Perimeter: 8 + 6 + 10 = 24 feet
   Area: 1/2 · (8 · 6) = 24 square feet

Bonus: Trapezoid Area = 1/2 · (8 + 5) · 6 = 39 square feet

Student Worksheet 2: That Should Cover It!

1. 2 · (3 · 4 + 3 · 7 + 4 · 7) = 2 · (12 + 21 + 28) = 2 · 61 = 122 square feet
2. (2 · 3.14 · 12.25) + (3.14 · 7 · 7) = (76.93) + (153.86) = 230.79 square feet , rounded = 231 square feet
3. (4 · 4) + 1/2 · 16 · 7.28 = 16 + 58.24 = 74.24 square feet, rounded = 74 square feet
4. No. The total surface area is 427.03 square feet and one can of paint will cover only 350 square feet, so the stage crew needs more paint.

Bonus: a. (3.14 · 12.25) + (3.14 · 3.5 · 7.8) = 38.465 + 85.722 = 124.187 square feet, rounded = 124 square feet; b. 124.187/350 = .35482 or about .35, or 35% of the gallon

Student Worksheet 3: Pack It Up! What Will Fit?

1. a. 7 · 4 · 3 = 84 cubic feet
   b. 3.14 · 12.25 · 7 = 269.255 cubic feet, rounded = 269 cubic feet
   c. 1/3 · (4 · 4) · 7 = 37.33 cubic feet, rounded = 37cubic feet
   d. 84 + 269 + 37 = 390 cubic feet
2. 13 · 5 · 8 = 520 cubic feet
3. Yes, because the total volume of the objects is 390 cubic feet, leaving extra room volume-wise.

Bonus: The cone has a volume of 3.14 · 1/3 · 12.25 · 7 = 89.75 cubic feet or 89 cubic feet and 1,296 cubic inches (1,728 cubic inches = 1 cubic foot). There was approximately 130 cubic feet left in the van. So based on volume alone, there should still be enough room in the van to fit the cone.

Bonus Worksheet 1: What's the Angle?

For a wood floor, the wall angles are: [180 – (90 + 80)] = 10° for a maximum safe floor angle, and [180 – (90 + 68)] = 22° for a minimum safe floor angle.

1. Since 22° is LARGER than 10°, then 22° is the MAXIMUM safe wall angle.
2. Since 10° is SMALLER than 22°, then 10° is the MINIMUM safe wall angle.

For a carpet, the wall angles are: [180 – (90 + 85)] = 5° for a maximum safe floor angle, and [180 – (90 + 30)] = 60° for a minimum safe floor angle.

3. Since 60° is LARGER than 5°, then 60° is the MAXIMUM safe wall angle.
4. Since 5° is SMALLER than 60°, then 5° is the MINIMUM safe wall angle.
5. 1/2 · (8 · 14) = 56 square inches

Bonus Worksheet 2: That's a Wrap!

1. The length of the poster is the same as the trash can's height and the width of the poster is equal to the trash can's circumference. The circumference is 3.14 ·3 = 9.42 feet. The poster's dimensions are 4 feet long and 9.42 feet wide, or 4 feet by 9.5 feet rounded to the nearest half foot.
2. The surface of the trash cans without the top and bottom can be derived using part of the formula for a cylinder's surface area: $SA = \pi \cdot d \cdot h$. 3.14 ·3 · 4 = 37.68 square feet or 38 square feet when rounded to the nearest square foot.
3. Using the surface area formula for a rectangular prism, each CD has a surface area of: 2 · (6 · .25 + 6 · 5 + .25 · 5) = 65.5 square inches. Multiply the surface area of 1 CD · 100 to find the total amount of paper needed to wrap 100 CDs: 65.5 · 100 = 6,550 square inches of paper.
4. The answer uses the surface area formula for a square pyramid but without the base area: 1/2 · 40 feet · 10 feet = 200 square feet.

Bonus Worksheet 3: Turn Up the Volume!

1. The volume of the room is 180,000 cubic feet, so the band can turn up their amplifiers 10 notches in this gym.
2. First calculate the area of the gym floor: 60 · 100 = 6,000 square feet. If 1,200 people fit into 6,000 square feet, then one person occupies 5 square feet (6,000 ÷ 1,200 = 5). For 1,500 people: 1,500 · 5 = 7,500 square feet.
3. In the formula for the volume of a rectangular prism (V = l · w · h), the l · w is actually the area of the floor, so you can say V = floor area · height. Rearrange the formula to: Height = Volume ÷ floor area. H = 280,000 ÷ 8,000 = 35 feet.
4. Using the formulas for the volume of a square pyramid and the area of a rectangle, students can find the length of one of the hologram's base sides: 6,250 = 1/3 BA · 30, so BA = 625. Because BA = l · w and 25 · 25 = 625, one side of the pyramid's base is 25 feet.

Take-Home Worksheet Front Cover: Warm-Up

1. area; 2. surface area; 3. volume; 4. cylinder; 5. cone

Take-Home Activity 1: Poster-Crazy

1. Answers will vary
2. Area of rectangular posters: 8.5 · 11 = 93.5. 93.5 · 10 = 935 square inches, or 6.5 square feet
   Area of circular posters: π · 1^2 = 3.14 square feet · 5 = 15.7 square feet
   Area of triangular poster: 1/2 · (3 · 3) = 4.5 square feet
   Total area of posters: 26.7 square feet

Now Try This: Answers will vary depending on the width of the doorway, which will determine the diameter of the welcome mats. Students need to measure the diameter and put their numbers in the formulas for circumference and area.

Take-Home Activity 2: Covering Up

1. The student is painting 2 sides and a top each measuring 3 square feet, and the back measuring 9 square feet. 9 + 3 + 3 + 3 = 18 square feet
2. (75 · 54) + [2(75 · 6)] + [2(54 · 6)] = 4,050 square inches + 900 square inches + 648 square inches = 5,598 square inches. 144 square inches = 1 square foot , so 5,598/144 = 38.875 square feet, or 38 square feet and 126 square inches.

Now Try This: To figure out the area of the hat, use the formula $\pi \cdot r \cdot \text{slant } h$. 3.14 · 2 · 7 = 43.96 square inches. If a 1-ounce jar covers 33 square inches, the student does not have enough paint for his or her hat.

Take-Home Activity 3: The Perfect Fit

1. 6 · 5 · .25 = 7.5 cubic inches; 7.5 · 80 = 600 cubic inches
2. Answers will vary.
3. 15^2 · 3.14 · 5 = 3,532.5 cubic feet, or 26,423.1 gallons

Now Try This: $V = \pi \cdot r^2 \cdot h$, so 22 = 3.14 · 1 · h. To get the answer for h, divide 22 by 3.14. 22 ÷ 3.14 = 7.006. Rounded to the nearest inch the height is 7 inches.

ALIGNMENT WITH STANDARDS: National Council of Teachers of Mathematics (NCTM)

This program aligns with NCTM Geometry Standards for Grades 6–8:

http://standards.nctm.org/document/chapter6/geom.htm