UNIT 10 · STANDARD 6.G.4

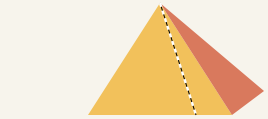
Surface Area of Pyramids

Lesson 10-5

Name: Type your name **Date:** Today's date **Class:** Class period

Key Vocabulary Level 2 Standard

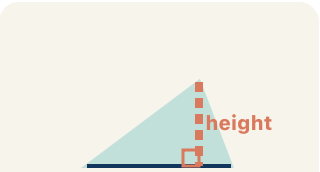
Picture first, then the word, then a plain-language meaning. Say each word out loud.



Like the Great Pyramid of Giza — a square on the bottom, 4 triangles slanting up to a point

Pyramid

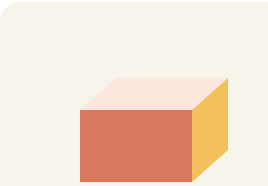
Write the definition:



If you slide your finger from the bottom edge up the triangle face to the top point — that distance is the slant height

Slant height

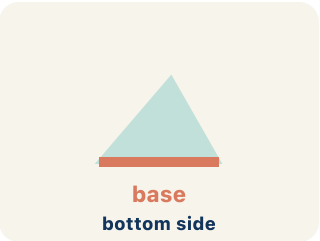
Write the definition:



A square pyramid has 4 lateral faces — one triangle for each side of the square base

Lateral face

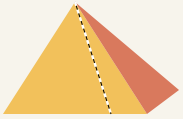
Write the definition:



A square pyramid sits on a square base; base area = side × side

Base

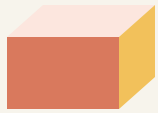
Write the definition:



The pointy top of a pyramid — all the slanted edges connect here

Apex

Write the definition:



For a square pyramid: lateral area = 4 × (½ × base edge × slant height)

Lateral area

Write the definition:

Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

I can find the surface area of a pyramid by adding the base area and the lateral faces.

✏️ **Fill in each blank as we go. Use the Word Bank to help you.**

📚 **WORD BANK — FILL EACH BLANK WITH THE BEST WORD**

Pyramid | Slant height | Lateral face | Base | Apex | Lateral area

☝️ *Tap any word to see what it means and a picture.*

1. A solid with a polygon base and triangular faces meeting at one point is a _____.

2. The height of a triangular face of a pyramid, measured along the slanted side, is the _____.

3. A triangular side face of a pyramid is a _____.

4. The polygon on the bottom of a pyramid is the _____.

5. The single top point where the triangular faces of a pyramid meet is the _____.

6. The combined area of all the side faces, not counting the base, is the _____.

🧱 Watch & Try — Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

👀 I do — watch

Follow each step as your teacher solves it.

Problem: A square pyramid has a base edge of 5 in and a slant height of 7 in. What is the surface area?

A. 95 in^2

B. 70 in^2

C. 95 in^3

D. 120 in^2

Step 1 Base: $5 \times 5 = 25$ in^2.

Step 2 Each lateral face: $\frac{1}{2} \times 5 \times 7 = 17.5$ in^2.

Step 3 Four faces: $4 \times 17.5 = 70$ in^2.

Step 4 SA = $25 + 70 = 95$ in^2.

✅ **Answer:** A. 95 in^2

🧩 Try — put the steps in order

Drag the cards (or use the ▲▼ buttons) to put the solution steps in the right order, then press **Check**.

Base: $5 \times 5 = 25$ in^2.

SA = $25 + 70 = 95$ in^2.

Four faces: $4 \times 17.5 = 70$ in^2.

Each lateral face: $\frac{1}{2} \times 5 \times 7 = 17.5$ in^2.

🤝 **We do — together**

Solve this one with your class using the same steps.

Problem: How many lateral (triangular) faces does a square pyramid have?

A. 4

B. 3

C. 5

D. 6

Step 1 _____

Step 2 _____

Step 3 _____

Answer: _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

Problem: What is the area of one triangular face with base 8 in and slant height 6 in?

A. 24 in^2

B. 48 in^2

C. 14 in^2

D. 24 in^3

Show your work:

Try It

Solve on your own. Check the answer key when you are done.

1. Before adding the base, you need the area of just one triangular face of a gift box with base edge 8 in and slant height 5 in. What is it?

A. 20 in^2

B. 40 in^2

C. 13 in^2

D. 20 in^3

Show your work:

2. A gift box is a square pyramid with a base edge of 9 in. What is the area of its square base (the part that sits on the table)?

A. 81 in^2

B. 36 in^2

C. 18 in^2

D. 324 in^2

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

Two pyramids have the same base area (64 in²) but different slant heights. Pyramid A has slant height 6 in and Pyramid B has slant height 10 in. How much more surface area does Pyramid B have? Why does slant height affect surface area but NOT base area?

Sentence starter: Pyramid A: SA = 64 + 4(½ × 8 × 6) = 64 + ____ = ____ in². Pyramid B: SA = 64 + 4(½ × 8 × 10) = 64 + ____ = ____ in². Pyramid B has ____ more in² because ____. Slant height only affects ____ because ____.

Show your work:

Reflect — Exit Ticket

A square pyramid has a base edge of 6 in and a slant height of 5 in. What is the total surface area?

A. 96 in²

B. 60 in²

C. 96 in³

D. 36 in²

Your answer: