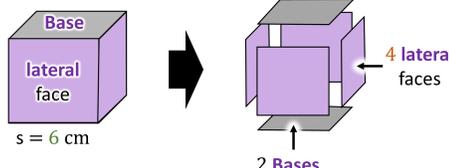# ◨ The Visual Non-Glossary™

Wrapping Gifts

The purpose for reading is to understand how lateral surface area is used to decide which surfaces of a package should be wrapped.

Pay Attention To:

- Which faces are included in the lateral surface area
- How the Base is different from the lateral faces
- What surfaces are actually being wrapped in each example
- How the shape changes the side faces
- Why only certain surfaces need to be covered
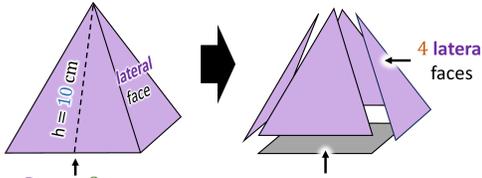
lateral surface area

LATERAL SURFACE AREA OF A CUBE

Base
lateral face
s = 6 cm

4 lateral faces
2 Bases

$$\text{lateral surface area} = 4 \times s^2$$
$$\text{lateral surface area} = 4 \times 6^2$$
$$\text{lateral surface area} = 4 \times 36$$
$$\text{lateral surface area} = 144 \text{ cm}^2$$

LATERAL SURFACE AREA OF A SQUARE PYRAMID

h = 10 cm
lateral face
Base = 8 cm

4 lateral faces
1 Base

$$\text{area of a triangle} = \tfrac{1}{2}\text{bh}$$
$$\text{area of a triangle} = \tfrac{1}{2}(8)(10)$$
$$\text{area of a triangle} = 40\text{cm}^2$$
$$\text{lateral surface area} = 4 \times 40$$
$$\text{lateral surface area} = 160 \text{ cm}^2$$

A company is making a gift box shaped like a cube. They want to wrap the box with paper. They see that the paper goes on the sides but not on the top or bottom. The sides are the **lateral surface area**. Each side is the same size, so they find the area of one side and add all four. The top and bottom are the **Base**, so they do not wrap those parts.

Now the company makes a new package shaped like a pyramid. This shape has triangle sides that meet at the top. They wrap only the sides again, which is the **lateral surface area**. The **Base** stays on the table and is not wrapped. Even though the shape is different, they still choose only the side faces. This helps them know what parts need paper.

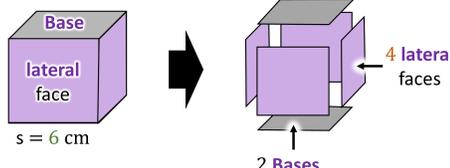# ░ The Visual Non-Glossary™

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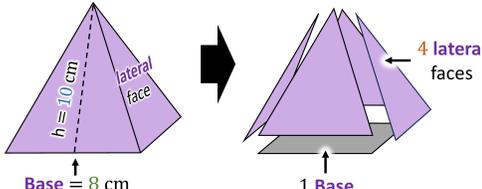## lateral surface area

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lateral face
$s = 6$ cm

4 **lateral** faces
2 **Bases**

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LATERAL SURFACE AREA OF A SQUARE PYRAMID

$h = 10$ cm
lateral face
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4 **lateral** faces
1 **Base**

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[CCBY-SA 4.0] Areli Amador/Seidlitz Education. For image attribution, see www.thevisualnonglossary.com/att.html#M7020

A company is designing a gift box shaped like a cube. They need to wrap the box with paper, but they notice that only the sides will be covered, not the top or bottom. These side faces make up the **lateral surface area** of the box. Since each side is the same size, they find the area of one face and combine all four. The top and bottom are the **Base**, so they are not included in the wrapping. This helps the company focus only on the surfaces that actually need to be covered.

Next, the company creates a package shaped like a pyramid. This shape has triangular side faces that meet at a point. When wrapping this package, they again focus on the side faces that form the **lateral surface area**. The **Base** sits on the bottom and does not need to be wrapped. Even though the shape has changed, the idea stays the same. The company must decide which surfaces to include when preparing the wrapping.

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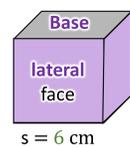# ◢◣ The Visual Non-Glossary™

Wrapping Gifts

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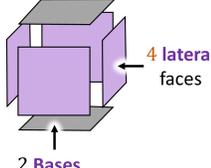
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lateral surface area
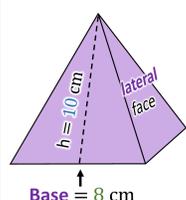
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$$\text{lateral surface area} = 160 \text{ cm}^2$$

A company is designing a gift box in the shape of a cube and needs to determine how to wrap it efficiently. As they plan, they realize that the wrapping paper will cover only the side faces and not the top or bottom. These side faces represent the **lateral surface area** of the cube. Because each face is congruent, they calculate the area of one face and combine all four. The top and bottom faces are the **Base**, so they are excluded from the wrapping. This allows the company to focus only on the surfaces that require material.

The company then designs a second package shaped like a pyramid. This figure has triangular side faces that meet at a single point. When wrapping this package, they again consider only the faces that form the **lateral surface area**. The **Base** remains on the bottom and is not included in the wrapping process. Although the structure of the shape is different, the concept remains consistent. The company must identify which surfaces are relevant when determining how to cover the package.

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