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UNIT 9 LESSON 5

AIM: SWBAT determine the surface area of solids

**THINK ABOUT IT!**

Find the surface area of the solid below. Explain how you determined your answer.



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Key Point

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**Interaction with New Material**

Ex. 1) A cube-shaped hole is cut in a rectangular prism as shown below.



If x = 4 cm, y = 30 cm, and z = 24 cm, how much paint would you need to cover the entire outside of the figure?

**PARTNER PRACTICE**

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| *Bachelor Level* |

1. The longer piece of wood has dimensions of 1 inch by 1 inch by 8 inches. The short piece of wood has dimensions of 1 inch by 1 inch by 4 inches. How many square inches of paint would be needed to cover all sides of this object?
	1. 52sqin. 
	2. 50sqin
	3. 38sqin
	4. 51sqin

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| *Master Level* |

1. A triangular prism is attached to a rectangular prism as shown below.

If w = 8 inches, x = 5 inches, y = 20 inches, and z = 11.3 inches, what is the surface area of the figure?



* 1. 960sqin
	2. 1,060sqin
	3. 760sqin
	4. 860sqin

**INDEPENDENT PRACTICE**

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| *Bachelor Level* |

1. A cube with a square hole with $3 m$ side lengths has been cut through the cube. What is the total surface area?



1. Three same-sized cubes are attached to the top of a rectangular prism as shown below.



If a = 9cm, b = 24 cm, and c = 3cm, what is the surface area of the figure?

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| *Master Level* |

For problems 3 and 4, determine the total surface area of the figure.

1. The figure below has two square holes cut completely through them. The squares are 2m by 2m each.



1. 

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| *PhD Level* |

1. Tyree is building the house shown below out of nylon. How many square feet of material will he need?

\*Notes:

* Ignore the mattress at the bottom. Under the mattress, there is a layer of material.
* The back of the tent has a triangular window.
* The front of the tent is completely open.



D = 5 feet

C = 3 feet

B = 2.5 feet

E = 4 feet

A = 2 feet

Tyree decides to add a sheet of material to cover the entire front side and create a door. How much material does he need now?

This special tent-material costs $5.25 per square foot. How much will Tyree need to pay to create the structure, door included?

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXIT TICKET**

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| --- | --- | --- | --- |
| Self-assessment | I mastered the learning objective today. | I am almost there.  | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there.  | You need more practice and feedback. |

1. Determine the surface area of the right rectangular prism after the two square prisms have been cut out.

