

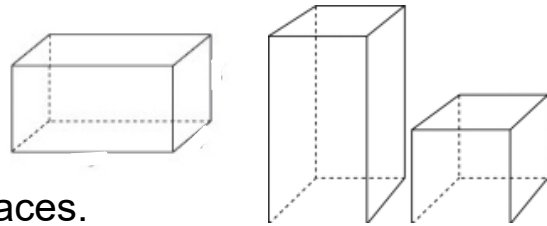
Section 1.3 Surface Area of Objects made from Right Rectangular Prisms

Surface Area

↳ The total area of all the surfaces (faces) of an object.

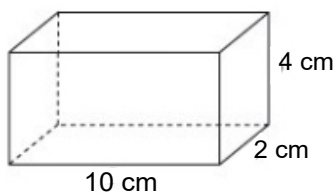
Right Rectangular Prism

↳ A rectangular shaped box.
A prism that has 6 rectangular faces.



Recall from Grade 8, to find the surface area of a rectangular prism

Example 1 Calculate the surface area.

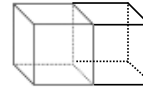


Surface Area Investigation (Assume the area of each face is 1 unit²).

1. What is the surface area of 1 cube?



2. Put two cubes together to make a train.
What is the surface area of the train?



3. Continue to place cubes at the end of the train.
Complete the table.

Number of Cubes	Surface Area (units ²)
3	
4	
5	
6	
7	

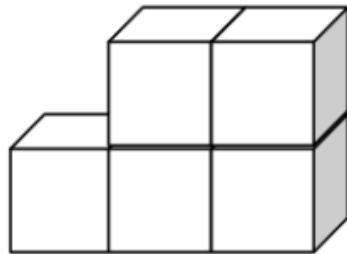
4. What happens to the surface area each time you place another cube in the train? Explain.

Composite Object

↳ When 2 or more objects are linked together, a composite object is created.

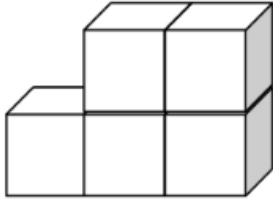
There are two methods for finding the surface area of linking cubes.

Example 2 Calculate the surface area of the following linking cubes using two methods.



Method #1: Count the squares on all 6 views of the object.

Method #2: Calculate the total surface area of all separate objects, and subtract the overlaps.



1 overlap covers
how many faces?

Think About:

How many total surface faces?

How many overlaps?

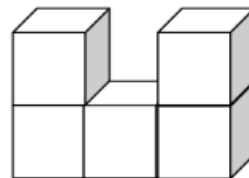
What is the total surface area?

Example 3

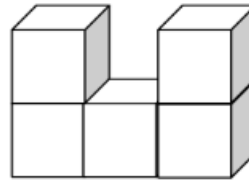
Find the surface area if the side length of each square is 1 cm.

Use method 1 and method 2.

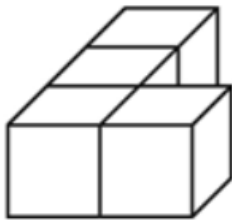
Method 2: Subtract overlaps



Method 1: 6 views



Example 4 Determine the surface area of the composite object. Each cube has a length of 2 cm. Use a method of your choice.



Work Book Questions

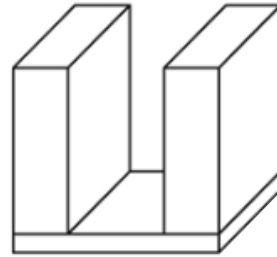
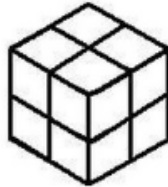
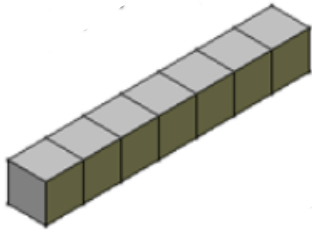
p.30-31 #4ace, 7

Extra Practice Questions

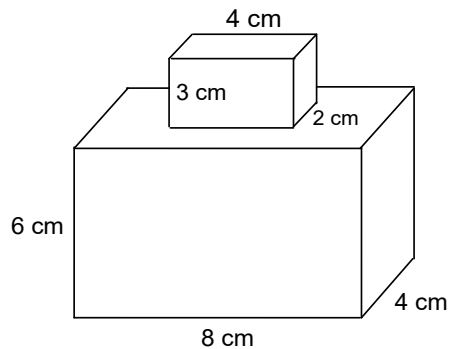
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Determining the Surface Area of Other Composite Objects

A **composite object** is an object made up of (or composed of) more than one object. It may be composed of more than one of the same type of object such as a 'train' of cubes or it could be composed of different types of objects.



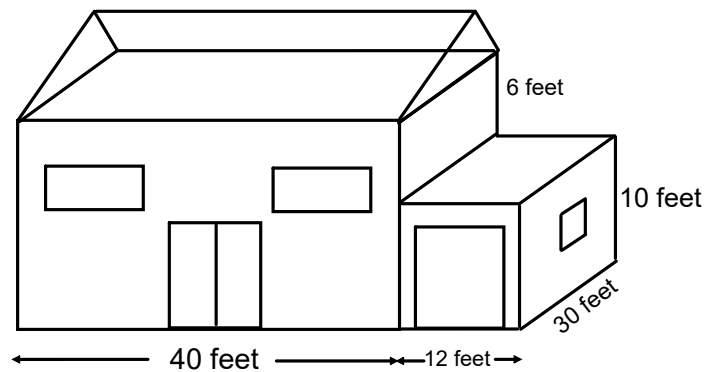
Example 5 Calculate the surface area.



Example 6: Challenge

Mr. Locke is putting siding on his house. The front door is 5 feet by 6 feet, the square garage door is 8 feet high, it has 6 windows total that are 3 feet by 4 feet and 2 square windows that are 2 feet high. Use the diagram to determine:

- The total surface area that needs siding.
- The total cost of his project if siding costs \$0.75 per square foot.



Work Book Questions

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Extra Practice Questions

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