



Project 1

Volume and surface area

In this project you will explore the following:

Section A: Can rectangular prisms with different dimensions have the same volume?

Section B: Can rectangular prisms with different dimensions have the same surface area?

Section C: Can a rectangular prism have a volume and surface area which are the same size?

General information

- All dimensions (in cm) must be whole numbers.
- All dimensions, calculations and drawings which are required to confirm your solutions must be clearly shown.

Introduction

State the purpose of your project as described above.

Project

- 1 Design nets for the following.
 - a Three rectangular prisms which meet the requirements stipulated in Section A.
 - b Three rectangular prisms which meet the requirements stipulated in Section B.
 - c One rectangular prism which meets the requirements stipulated in Section C.

- 2 Use a spreadsheet to calculate the following.

- a Volumes of rectangular prisms with the following dimensions:

<i>l</i>	3	3	3	4	4	4	5	5	6
<i>b</i>	6	8	10	5	6	9	6	8	6
<i>h</i>	20	15	12	18	15	10	12	9	10

- b Surface areas of rectangular prisms with the following dimensions:

<i>l</i>	1	1	1	1	1	1	1	4	5
<i>b</i>	1	2	3	4	5	7	9	5	7
<i>h</i>	59	39	29	23	19	14	11	11	7

- 3 Use a spreadsheet to find the dimensions of the following.

- a Four different rectangular prisms with a volume of 240 cm^3 .
- b Four different rectangular prisms with a surface area of 240 cm^2 .

Conclusion

Write a short report on your findings.