Discussion Problems
Step 1: What is Volume?

National Curriculum Objectives:

Mathematics Year 5: (5M8) Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]

About this resource:

This resource has been designed for pupils who understand the concepts within this step. It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.

There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.

We recommend self or peer marking using the answer page provided to promote discussion and self-correction.

More Year 5 Volume resources.

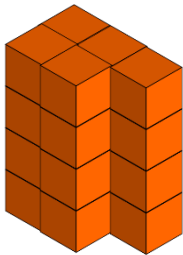## Did you like this resource? Don't forget to review it on our website.

What is Volume?

1. Chen is creating 3D shapes out of 1cm³ blocks.

He has created a shape that has a volume of 20cm³ which is shown below.

He says,

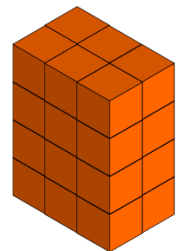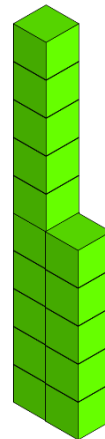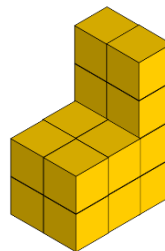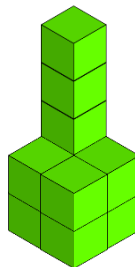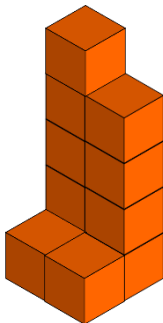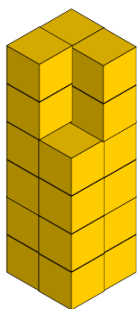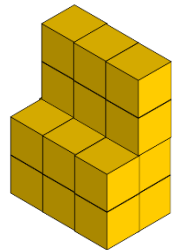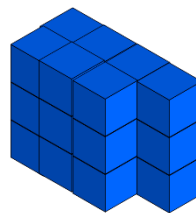I have also made 3 different shapes that also have a volume of 20cm³.

Explore the possible shapes that Chen could have created. How many different designs can you create?

DP

2. A warehouse has a maximum volume of 175m³.

1m³ boxes are stacked and placed in the warehouse. These are shown below:
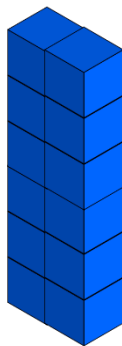
Investigate the leftover volume of the warehouse.

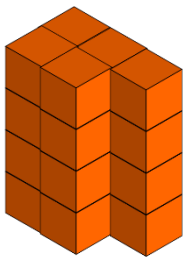Create a shape that has the same volume as the leftover volume of the warehouse.

DP

What is Volume?

1. Chen is creating 3D shapes out of 1cm^3 blocks.

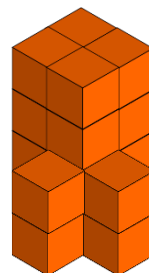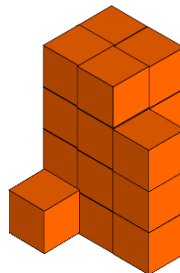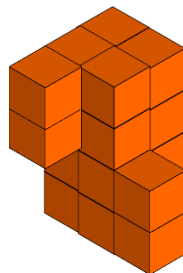**He has created a shape that has a volume of 20cm^3 which is shown below.**

He says,

> I have also made 3 different shapes that also have a volume of 20cm^3.

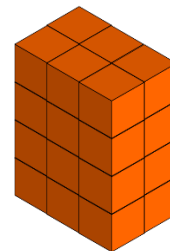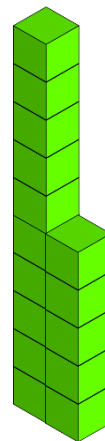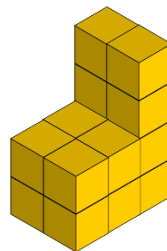**Explore the possible shapes that Chen could have created. How many different designs can you create?**
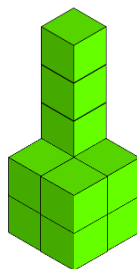
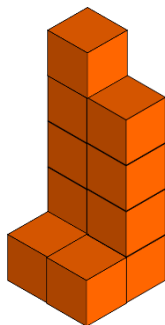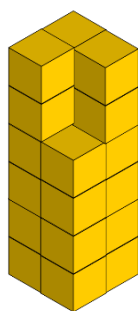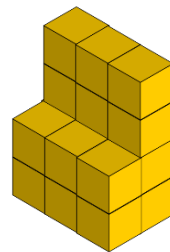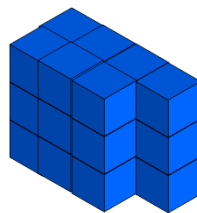**Various answers, for example:**

DP

2. A warehouse has a maximum volume of 175m^3.

1m^3 boxes are stacked and placed in the warehouse. These are shown below:
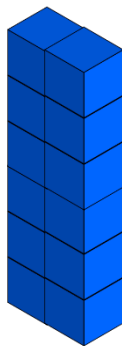
Investigate the leftover volume of the warehouse.
There is 25m^3 leftover in the warehouse.
Create a shape that has the same volume as the leftover volume of the warehouse.
Various shapes that have a volume of 25m^3 accepted.

DP

classroomsecrets.co.uk

Discussion Problems – What is Volume? ANSWERS