

Discussion Problems

Step 6: Cube Numbers

National Curriculum Objectives:

Mathematics Year 5: (5C5d) [Recognise and use square numbers and cube numbers, and the notation for squared \(2\) and cubed \(3\)](#)

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 Multiplication and Division](#) resources.

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

Cube Numbers

1. Using your knowledge of cube numbers, explore different paths through the maze from start to finish, following the rules below.

Start

64	216	4	1,331	216	512
49	729	16	1,000	125	27
125	100	8	216	343	1,000
1	8	1,728	1,331	1	343
1,000	81	125	27	36	1,728

Finish

Rules

You must pass through each of the cube numbers up to 12^3

You can only pass through each cube number once.

You can move in any direction.

DP

2. Sally and Aroon are thinking about cube numbers.



Sally

My cube number is 64. The difference between mine and Aroon's cube numbers has the same digits as another cube number.

I am thinking of a cube number that is not 64.



Aroon

?

Investigate which cube number Aroon could be thinking of.

DP

Cube Numbers

1. Using your knowledge of cube numbers, explore different paths through the maze from start to finish, following the rules below. **Various routes, for example:**

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Rules

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DP

2. Sally and Aroon are thinking about cube numbers.

Various answers, for example:



Sally

My cube number is 64. The difference between mine and Aroon's cube numbers has the same digits as another cube number.

I am thinking of a cube number that is not 64.



Aroon

343

Investigate which cube number Aroon could be thinking of.

$343 - 64 = 279$ which has the same digits as the cube number 729.

DP