Discussion Problems
Step 5: Square 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)
Mathematics Year 5: (5C8a) Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes

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.

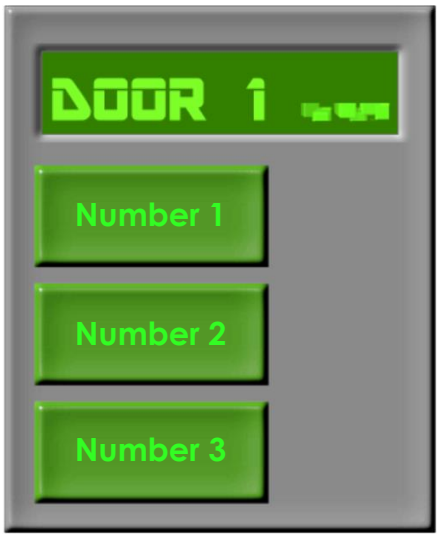
More Year 5 Multiplication and Division resources.

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

Square Numbers

1. International spy Jane Band is trying to crack the code to unlock the door so she can escape the room the evil Dr Foul has trapped her in!

She has found some clues written on the wall:



- The code is made up of 3 numbers.
- The sum of all the numbers in the code is a square number.
- Two of the numbers in the code are square numbers.
- All of the numbers are odd.

Explore the possible combination of numbers the code could be.

DP

2. Arrange the loop cards so that each calculation is matched to the correct answer. Fill in the missing card to complete the loop.

9	The sum of 4^2 and 3^2
119	The product of 5^2 and 2^2
100	$8^2 - 4^2$
244	The total of 7^2 and 9^2
25	$12^2 - 5^2$
	___ x ___ = 121
11	$10^2 + 12^2$
130	6^2 divided by 4
48	$8^2 \times 3^2$

DP

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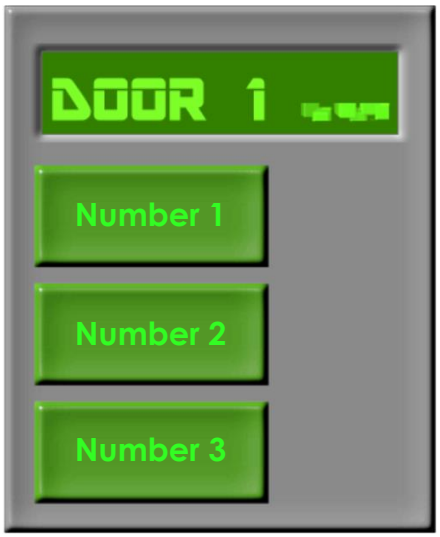

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- The sum of all the numbers in the code is a square number.
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Explore the possible combination of numbers the code could be.
Various answers, for example: 49, 25, 7

DP

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DP