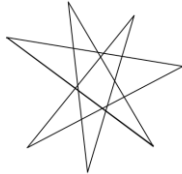


# Year 7

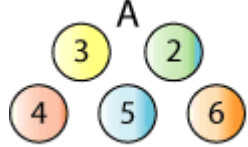

Autumn term

<p><b>TWO</b> <b>+ TWO</b> <hr/><b>FOUR</b></p> <p><a href="https://nrich.maths.org/twoandtwo">https://nrich.maths.org/twoandtwo</a></p>	 <p><a href="https://nrich.maths.org/11456">https://nrich.maths.org/11456</a></p>
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Spring Term

<p><b>Got It!</b></p>  <p>This is a game for two players. Start with the target number of 23. The first player chooses a whole number from 1 to 4. Players take turns to add a whole number from 1 to 4 to the running total. The player who hits the target of 23 wins the game. Can you find a winning strategy? Can you always win?</p> <p>What happens if you choose a new target number? What happens if you change the range of numbers you can add? Can you work out a winning strategy for any target and any range of numbers?</p> <p><a href="https://nrich.maths.org">nrich.maths.org</a></p> <p><a href="https://nrich.maths.org/397">https://nrich.maths.org/397</a></p>	<p><b>Consecutive Sums</b></p>  <p><math>10 = 1 + 2 + 3 + 4</math>      <math>17 = 5 + 6</math> <math>9 = 4 + 5</math> and <math>2 + 3 + 4</math></p> <p>Some numbers are sums of consecutive numbers. Can you make all the numbers this way? Which numbers can be written in more than one way?</p> <p><math>12 = 3 + 4 + 5</math>      <math>13 = 6 + 7</math> <math>18 = 2 + 3 + 4 + 5</math></p> <p><a href="https://nrich.maths.org">nrich.maths.org</a></p> <p><a href="https://nrich.maths.org/7999">https://nrich.maths.org/7999</a></p>
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Summer Term

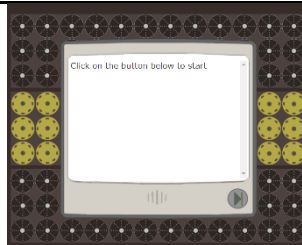
 <p><a href="https://nrich.maths.org/oddsandevens">https://nrich.maths.org/oddsandevens</a></p>	 <p><a href="https://nrich.maths.org/85">https://nrich.maths.org/85</a></p>
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# Year 8

Autumn term

## Thousands and Millions

<https://nrich.maths.org/6046>



<https://nrich.maths.org/7216>

Spring Term

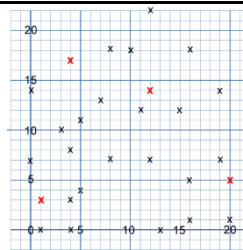
### 1 Step, 2 Step



Liam's house has a staircase with 12 steps. He can go down the steps one at a time or two at a time.  
For example, he could go down 1 step, then 1 step, then 2 steps, then 2, 2, 1, 1, 1.  
In how many different ways can Liam go down the 12 steps, taking 1 or 2 steps at a time?

[nrich.maths.org](https://nrich.maths.org)

<https://nrich.maths.org/1step2step>



<https://nrich.maths.org/8485>

Summer Term

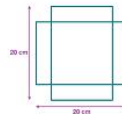


<https://nrich.maths.org/610>

### Cuboid Challenge

You can make an open box from a 20cm by 20cm piece of card by cutting out four squares and folding the flaps.

What's the biggest volume of box you can make in this way?

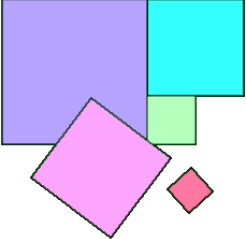


[nrich.maths.org](https://nrich.maths.org)


<https://nrich.maths.org/cuboidchallenge>

# Year 9

Autumn term

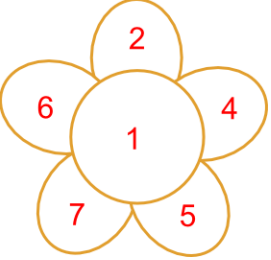


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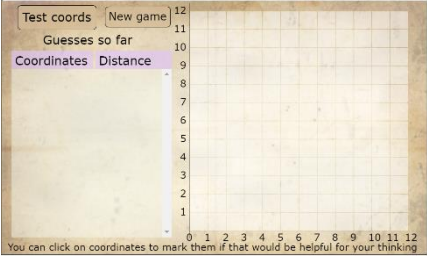


<https://nrich.maths.org/8061>

Spring Term

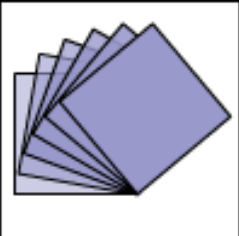


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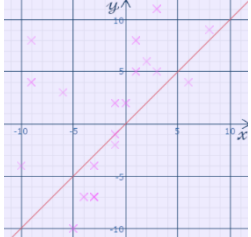


<https://nrich.maths.org/6288>

Summer Term



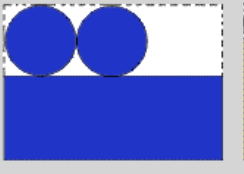
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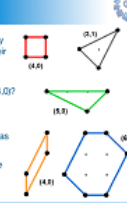
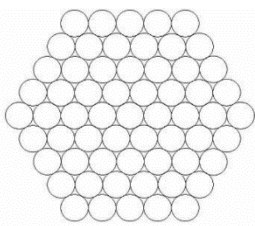
<https://nrich.maths.org/5725>

# Year 10

Autumn term

 <p><a href="https://nrich.maths.org/2664">https://nrich.maths.org/2664</a></p>	$20 = 6^2 - 4^2$ $21 = 5^2 - 2^2$ $36 = 6^2 - 0^2$ <p><a href="https://nrich.maths.org/whatspossible">https://nrich.maths.org/whatspossible</a></p>
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Spring Term

<p><b>Pick's Theorem</b></p> <p>When the dots on square doty paper are joined by straight lines the resulting figures have dots on their perimeter (<math>p</math>) and often internal (<math>i</math>) ones as well.</p> <p>Each figure can be described as <math>(p,i)</math>.</p> <p>How many different figures can be described as <math>(4,0)</math>?</p> <p>Each figure always encloses an area (<math>A</math>).</p> <p>Draw more figures, tabulate the information about their perimeter points (<math>p</math>), interior points (<math>i</math>) and areas (<math>A</math>).</p> <p>Can you find a relationship between all these three variables (<math>p, i, A</math>)?</p>  <p><a href="https://nrich.maths.org/pickstheorem">https://nrich.maths.org/pickstheorem</a></p>	 <p><a href="https://nrich.maths.org/steelcables">https://nrich.maths.org/steelcables</a></p>
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Summer Term

 <p><a href="https://nrich.maths.org/272">https://nrich.maths.org/272</a></p>	<p><b>Marbles in a Box</b></p> <p>Imagine a three dimensional version of noughts and crosses where two players take it in turn to place different coloured marbles in a box.</p> <p>The box is made from 27 transparent unit cubes arranged in a 3-by-3 array.</p> <p>The object of the game is to complete as many winning lines of three marbles as possible.</p> <p>How many different ways can you make a winning line?</p>  <p><a href="https://nrich.maths.org/marbles">https://nrich.maths.org/marbles</a></p>
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# Year 11

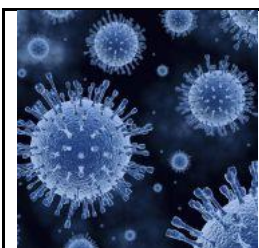
## Autumn term

 <p><a href="https://nrich.maths.org/693">https://nrich.maths.org/693</a></p>	 <p><a href="https://nrich.maths.org/7322">https://nrich.maths.org/7322</a></p>
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## Spring Term

 <p><a href="https://nrich.maths.org/900">https://nrich.maths.org/900</a></p>	 <p><b>Nine Colours</b></p> <p>You have 27 small cubes, 3 each of nine colours.</p> <p>Can you use all the small cubes to make a 3 by 3 by 3 cube so that each face of the bigger cube contains one of each colour?</p> <p><a href="https://nrich.maths.org">nrich.maths.org</a></p> <p><a href="https://nrich.maths.org/ninecolours">https://nrich.maths.org/ninecolours</a></p>
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## Summer Term

 <p><a href="https://nrich.maths.org/epidemic">https://nrich.maths.org/epidemic</a></p>	
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