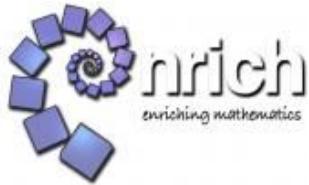




Highland Numeracy and Mathematics

***Games and Activities
At Home***

Highland Numeracy and Mathematics: *Games and Activities At Home*



Games and Activities At Home



Games and Activities At Home



Quick Links

Click on the text to be taken to the relevant section of the document or just browse through the document:

We've selected a few great websites and picked out a selection of materials at a variety of levels for each of them.

NRICH	YouCubed	Classic Problems to solve	Other Sites
→ Early	→ Overview		→ Sumdog
→ First	→ Early/First		→ I am a Mathematician
→ Second	→ First/Second		→ I am a Scientist
→ Third	→ Second/Third		→ I am an Engineer
→ Fourth+			

Games and Activities At Home



NRICH - Early

Area	Link to Activity		
Number	Can You Build This? Exploring the characteristics of shape using everyday language	Sock Washing Line Everyday language to talk about size and position, comparing and ordering by size Counting in ones and twos	Incey Wincey spider Develop connections between the number of dots on a dice and counting actions.
Problem Solving	Long Creatures Comparing length.	Pirate Poundland Shopping role play and exchanging coins for selected purchases.	The Box Game Adding and subtracting Solving problems
Shape and Space	Packing Putting 'like' things together, when putting things away and gathering them together.	Shapes in the Bag Exploring shapes while it is hidden in the bag, reason what shape it is, then bring it out to see.	Small World Play Explore area and volume with small world play figures and separate compartments.

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NRICH - First

Area	Link to Activity		
Number	<u>Totality</u> Opportunity for children to become more fluent with number bonds and addition.	<u>Add and Take Away Path</u> Provides practice in simple addition and subtraction. It draws out the inverse relationship between these two operations as well as encouraging children to think about the order of operations.	<u>Sort Them out One</u> Practice in addition and subtraction and possibly offer opportunities to share calculation strategies. It gives ample opportunities to practise calculations using numbers to 20.
Problem Solving	<u>Highest and Lowest</u> Start off with four numbers written down in order and put the same sign between each pair. Which operation gives the highest total and which the lowest?	<u>Number Round Up</u> Children can practise addition and subtraction. It can be solved in many different ways	<u>Chocolate</u> Develop their concepts of fractions.
Shape and Space	<u>Triangle Animals</u> How many different ways are there to join equilateral triangles together?	<u>Chain of Changes</u> Refer to the shapes by name and visualise the next shape to place in the pattern.	<u>Skeleton shapes</u> Understand the various properties of common geometric solid shapes, concentrating on edges and vertices.

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NRICH - Second

Area	Link to Activity		
Number	Factors and Multiples To play strategically, pupils must start to think of numbers in terms of their factors, utilising primes and squares to develop winning moves.	Shape Times Tables Children can practise their times tables facts, but this activity demands reasoning too.	Six Ten Total Use your skills of addition and multiplication in a problem-solving situation.
Problem Solving	Sprouts Sprouts Explained Strategic game to stop your partner from being able to have a go.	Bryony's Triangle An origami activity which explores fractions.	Walk and Ride Practice of working with distances, speeds and times
Shape and Space	The Numbers Give the Design Simple geometric construction	A Puzzling Cube Visualise the adjoining faces of the cube and transfer this to a net of the cube.	Square It Practise visualising squares and angles on grids and also encourages students to look at strategies using systematic approaches.

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NRICH - Third/Fourth

Area	Link to Activity		
Number	Square Percentage What percentage of these integers are square numbers?	American Billions What's the longest number you can make that satisfies the rules of the game?	Adding all Nine Make a set of numbers that use all the digits from 1 to 9, once and once only.
Problem Solving	Sissa's Reward Estimate how many grains of rice you would need in total to fill an entire chess board	Counting Factors How many factors does 360 have?	Repeating Decimals Choose any 3 digits and make a 6 digit number by repeating the 3 digits in the same order (e.g. 594594).
Shape and Space	Mirror Mirror Can you describe the single transformation that takes the first flag to the last flag?	Napoleon's Theorem Triangle ABC has equilateral triangles drawn on its edges. What can you prove about the triangle PQR	Square Areas Can you work out the area of the inner square and give an explanation of how you did it?

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YouCubed: Overview

Youcubed is a website which is full of problems which can be solved in a creative and visual way. There is often more than one solution to a problem, and the activities are designed to help people think deeply.

They have been roughly put into curriculum levels from Early through to Third. A level has not completely been assigned to each of them as they can often be taken at many different levels, or they can be adapted to be harder to use.

We have taken 10 of them to share with you here. Fuller instructions for each activity are to be found by clicking on the links. If you need dice, <https://www.random.org/dice/> lets you roll virtual dice.

If you prefer this as a WORD DOCUMENT, click on the link [HERE](#).

Games and Activities At Home



YouCubed: Early/First

Level	Area	Link to Activity
Early	<ul style="list-style-type: none">• Number Sense• Multiplication - equal groupings	Pepperoni Pizza Pupils roll two dice - one to create a pizza, and one to be the number of pepperoni toppings.
Early/First	<ul style="list-style-type: none">• Addition• Probability	Shut the box This is a game of chance mixed with the fun of finding a strategy.
First	<ul style="list-style-type: none">• Number Sense• Addition	Pig The goal is to be the first player to reach a chosen target number
First	<ul style="list-style-type: none">• Subtraction	Get to Zero The goal is to be the first player to reach 0 from a chosen bigger number

Games and Activities At Home



YouCubed: First/Second

Level	Area	Link to Activity
First/Second	<ul style="list-style-type: none">• Addition• Multiplication	Tic Tac Toes Sums (addition) AND Tic Tac Toe Products (multiplication) These are a new take on the classic games. <i>No printer? Make a copy of the board.</i>
First/Second	<ul style="list-style-type: none">• Number Sense• Pattern Recognition• Division• Multiplication	Penny Collection Pupils will explore how numbers are composed. <i>The activity can be adapted to other levels.</i> <i>Early level - count collections of pennies.</i> <i>First / second level - count collections of mixed loose change</i> <i>You can also extend this activity by making up a similar problem.</i>
Second	<ul style="list-style-type: none">• Shape and Space	Trap the zoid This activity explores patterns in numbers by using trapezoids.

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YouCubed: Second/Third

Level	Area	Link to Activity
First/Second /Third	<ul style="list-style-type: none">• Multiplication and Division• Various	Maths Cards Explore the maths cards on the handout, then make up your own visual style maths cards. The examples given are for multiplication and division, but can be adapted for any area.
Second/ Third	<ul style="list-style-type: none">• Shape and Space	Optical art task This task combines art, maths and design. <i>No hundred grid? Make up your own. This is a good measuring activity!</i>
Second/ Third	<ul style="list-style-type: none">• Number Sense• Fractions	What's the secret code? This task helps pupils build number sense as they practice calculating.

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Classic Problems: Old Favourites

[The Tower of Hanoi](#)

Move disks from tower one to tower three but you can't put a big disk on top of a smaller one

Use objects at home to recreate

[The Fox, The Goose and a Sack of Grain](#)

A farmer wants to get his animals and a bag of grain to the other side of the river but there are problems!

Why not act this one out?

[The Rice and the Emperor's Chess board](#)

An old story which shows how numbers can get big very quickly.

[And a video of the solution](#)

[Tangrams](#)

A Tangram is an ancient Chinese puzzle. You have seven shapes and you have to make pictures.

[Matchstick Puzzles](#) - Amaze your friends.

[Logic Problems](#) - Old favourites

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Sumdog

- Your child may already have a Sumdog login from school. Ask them if they know this.
- If they do not, you can easily create one. Follow the parent link here:

<https://pages.sumdog.com/parent/>



I am a Mathematician

- A booklet from Education Scotland full of ideas and activities for a range of ages showing how maths is used every day in different jobs.
- <https://education.gov.scot/parentzone/Documents/IAmAMathematician270417.pdf>



I am a Scientist

- A booklet from Education Scotland full of science experiments that you can carry out along with explanations of the science behind them.
- <https://www.education.gov.scot/parentzone/Documents/IamScientistMar16.pdf>

Games and Activities At Home



I am an Engineer

- A booklet from Education Scotland full of activities related to engineering that you can carry out at home.
- <https://education.gov.scot/parentzone/Documents/IAmAnEngineer.pdf>