

1. Record Nr.	UNINA9910810707003321
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Titolo	100+ ideas for teaching mathematics / / Mike Ollerton
Pubbl/distr/stampa	London, [England] ; ; New York, New York : , : Continuum, , 2011 ©2007
ISBN	1-4411-0302-3 1-4411-3748-3
Edizione	[Second edition.]
Descrizione fisica	1 online resource (161 p.)
Collana	Continuum One Hundreds Series
Disciplina	510.71
Soggetti	Mathematics - Study and teaching
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Cover; Half-title; Title; Copyright; CONTENTS; ACKNOWLEDGEMENTS; INTRODUCTION; SECTION 1 A number of number puzzles; 1 100 SQUARE 1 Observing patterns on a 100 grid, summing sequences; 2 100 SQUARE 2 Coding moves on a 100 grid, arithmetic; 3 CARD TRICKERY 1 The arithmetic behind a card trick; 4 CARD TRICKERY 2 Another card trick and more arithmetic; 5 FIVES AND THREES Dominoes and arithmetic; 6 CONSECUTIVE SUMS Consecutive numbers and consecutive sums; 7 DIVISORS 1 Deciding on divisors; 8 DIVISORS 2 Developing divisors; 9 DIVISORS 3 Exploring divisors 10 DIVISORS 4 Lowest Common Multiples and divisors11 DOUBLING AND DOUBLING AND . . . Arithmetic by continually doubling (ABCD); 12 DOUBLING IN MODULAR ARITHMETIC Exploring modular arithmetic; 13 EXPLORING UNIT DIGITS Exploring unit digits, sequences; 14 FIVE DICE /FIVE CARDS TO A HUNDRED; 15 NETWORKS Coding and analysing a line pattern, generalizing, formula; 16 PALINDROMES Exploring numbers, generalizing, arithmetic; 17 PARTITIONS AND PRODUCTS Addition, multiplication, indices, formulae; 18 SCALE FACTORS Enlargements, ratio; 19 STORIES Here's the answer, what's the question? 20 TAKE THREE DICE Arithmetic, properties of numbers21 TAKE THREE NUMBERS A right good number puzzle; 22 TAKE A STRIP OF PAPER From number to algebra; 23 DOMINO DELIGHT Number patterns, algebra and fractions; 24 FRACTION WALLS AS NUMBER LINES Fraction

walls, fraction number lines, decimals, percentages; 25 FRACTIONAL FROGS Addition and subtraction of fractions, infinity; 26 TWO MORE FRACTION PROBLEMS Patterns in fractions, generalizing; 27 A COUPLE OF PERCENTAGE PROBLEMS Making sense of percent, compound interest; 28 ROOTING OUT SQUARE ROOTS Multiplication of decimals 29 CREATING A LOG<sub>10</sub> TABLE Creating base 10 log tables using fractional indices SECTION 2 Puzzles to NAG (Number, Algebra and Graphs) your students with; 30 FIBONACCI 1 Sequence generators, golden ratio, graphing data; 31 FIBONACCI 2 Properties of the Fibonacci sequence, algebra; 32 SQUARE NUMBERS A collection of ideas using square numbers; 33 FIVE NUMBERS IN A RING 1 Differencing, generalizing; 34 FIVE NUMBERS IN A RING 2 Summing products, summing quotients, coordinate pictures; 35 JOINING DOTS Exploring structures, generalizing; 36 SPROUTS A strategy game using nodes, arcs and regions 37 4-SQUARE MEETING POINT PROBLEM Number patterns, generalizing, writing formulae 38 TURNING INSIDE-OUT 'People math', a bit of fun, generalizing; 39  $X + Y = 10$  Partitioning, algebra, graphing; 40 100 SQUARE 3 Algebrizing on a 100 square; 41 TAKE TWO NUMBERS Addition, number patterns, generalizing; 42 DIAGONAL DIVERSIONS 1 Practising Pythagoras and trigonometry in a problem-solving context; 43 CARD TRICKERY 3 Puzzling out a card trick, constructing a formula; 44 LONGEST PATH THROUGH A RECTANGLE Number pattern leading to a quadratic; 45 NUMBER ROUTE PROBLEMS Number problems and algebra 46 3 'MULTIPLIED' BY 2 IS 8 Number patterns, generalizing, writing a formula

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### Sommario/riassunto

All Mike's ideas have been tried and tested at the chalkface. This second edition will be at least 20% bigger and will contain ideas which range from simple addition to using and applying trigonometry, from naming 2D shapes to exploring the intrigues of 3D solids.

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