



MATHS YEAR 2000

Scotland

Resource Pack for Primary Schools



Teachers' Notes for Resource Sheets PA1-PA46

Maths Year 2000 Scotland Resource Pack for Primary Schools: Pupil Activities

Booklet and accompanying Resource Sheets PA1–PA46 published November 2000

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Resource Pack for Primary Schools

Introduction

This pack includes just a few of the activities that pupils have enjoyed during Maths Year 2000. Teachers can use the items as they wish, either in the activities as described or in their own way. They are in photocopyable form. Answers, where applicable, are supplied on yellow Answer Sheets.

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**Resource Sheets:
PA1–PA3
Level: B-D**

Resource Sheets

Questions from the competitions

PA1: Speed Round

PA2: Home or Away Round for levels B-D

PA3: Money Round

Resources

Buzzers

Scoreboard

Large photos/posters of 2D & 3D objects

Nets of the 3D shapes, Polydron, or similar

Large foam numbers e.g. from a foam playmat for young children

Optional: OHP (for display of questions); Large TV (for audience in Logo Round)

Quizzes, Competitions and Activities

A Question Of Maths

Activity

A quiz for groups of pupils to encourage, improve and develop their skills in mathematics. Three teams of 3 mixed-ability pupils (in this case, one each at levels B, C, and D) compete. Pupils face challenges in mental maths, measure, problem solving and 3D assembly against the clock.

Suggested Rounds:

Picture Round	Identify the shapes from photos of 2D & 3D objects.
Speed Round	Mental maths questions on the buzzer.
Home or Away Round	Pupils are asked a question at their own level [home] or a more advanced level [away].
Money Round	Quiz questions.
Measure Round	Objects are given or displayed. The teams have to estimate weight, length, area etc. – eg. inflatable banana (length), sombrero (circumference/diameter), houseplant (height), baggy bloomers (area), small person (weight). Multiple choice answers may be offered.
Beat the Goalie	Race between the teams to make a set of solid shapes from nets.

Alternative Rounds:

Feelie Round	Identifying large foam numbers by their shape alone.
Logo/Roamer Round	Programme Logo or Roamer to follow a particular path.
Beat the Goalie	Identify solid shapes from nets.

Quizzes, Competitions and Activities

Poster Quiz

Level: All

Activity

Run a weekly or monthly quiz competition using mathematical posters.

Pupils answer questions based on the posters and hand their answers in for judging.

Prizes are awarded to winners.

Pupils could design their own posters.

Suitable Posters

Refer to Appendix for contact details.

Maths Year 2000 Scotland posters.

Association of Teachers of Mathematics (ATM): Posters and postcards.

The Mathematical Association: Interesting posters – The Great Pavement of Westminster Abbey, Archimedes, Euler Solids, Hexagons, Tangram Tree, and Tricky Sum. Sets of postcards for display include 15 puzzlecards and 10 fractal postcards.

Tarquin Publications: Variety of thought-provoking posters & postcards.

Maths on the London Underground posters: set of 12, available from: <http://www.newton.cam.ac.uk/wmy2kposters/>

University of Edinburgh – Edinburgh Centre For Mathematics Education produce set of five posters on subject of measure.

SMILE Mathematics: A3 posters on mazes, place value and puzzles. Set of nine small posters investigating dividing squares into two or four equal parts.

QED Griffin: Range of laminated posters and wall charts, including posters on mathematics from around the world. Funmaths puzzle wallcharts.

**Resource Sheets:
PA4–PA9, PA38
Level: C-E**

Resource Sheets

Sample Questions

PA4: Loop cards for Level C.

PA5: Loop cards for Level C.

PA6: Loop cards for Level D.

PA7: Loop cards for Level D.

PA8: Loop cards for Level D.

PA9: Countdown questions for all abilities.

PA39: Sample Targets.

Resources Required

Loop Cards are available from websites including www.primaryresources.co.uk/maths/cards.htm. They may be available from your Education Authority.

Stopwatch

Quizzes, Competitions and Activities

Class Activities

Loop Cards

Each pupil is given at least one card, which has an answer and a question on it. (For example, “I have 40. Who has double 11?” or “I am 0.5. Multiply me by 5.”) The teacher starts off the chain of questions and answers, by reading out a start question. The activity finishes when the last card is read out.

If the teacher times the class, pupils try to beat their (or other classes) best times. (Time penalties may be imposed if pupils shout out answers when it is not their turn.)

Cards can be created for all levels. Sample cards for Levels C and D are enclosed as Resource Sheets PA4 to PA8.

Timescale: Flexible. A minimum of 5 minutes for each set.

Teacher Input: Creating and issuing the cards.

Countdown

A written or oral quiz, based on the popular Channel 4 programme Countdown. Six numbers are chosen from the numbers in the range 1–10 and the set {25, 50, 75, 100}. A target number is then set and the object of the game is to arrive at the target number using any or all of the six chosen numbers. The calculation may involve addition, subtraction, multiplication, and division.

Sample puzzles are enclosed as Resource Sheet PA9.

A variation on this activity is presented in Resource Sheet PA39 “Targets”. Using four numbers and a target number, the participant has to make a sum from all four numbers that equals the target number.

Quizzes, Competitions and Activities

Scottish Mathematical Challenge, Primary Division

Resource Sheet:
PA10
Level: D-F

Activity

- The competition is in three rounds with each round containing three questions. There is no entry fee. Sample questions are enclosed as Resource Sheet PA10.
- Questions are sent out to schools in September, October and January with approximately one month given before the deadline for solutions. Schools should receive details in the Autumn term.
- Pupils work independently on problems. They can work on the problems at school or at home but must not receive any help.
- Pupils answer in their own words and provide as much detail as possible.
- Solutions are marked by the mathematics department of the local university.
- Children can gain gold, silver or bronze certificates. Top-scoring winners are invited to a prize-giving and receive a much-prized Scottish Mathematical Council mug!
- Solutions for each round are sent to schools together with on-going scores for each child.

Resource Sheet

PA10: Sample questions
from Problem Set I
1998/1999

Resources

The Scottish Mathematical Council provides the questions. They require to be photocopied by the school.

Past questions are available in booklet form (price £7.50 in October 2000) from :
Mr. W.P. Richardson,
Kintail, Longmorn, Elgin,
IV30 8RJ, or from the
web site: <http://www-maths.mcs.st-and.ac.uk/~smc/>

Resource Sheet:
PA11
Level: D-F

Resource Sheet

PA11: Sample questions from the 1999/2000 competition.

Resources Required

Challenge papers with certificates and Answer Sheet are available in packs of 10, from: The PMC Office, The Mathematical Association, 259 London Road, Leicester, LE2 3BE (£5 per pack at October 2000).

Quizzes, Competitions and Activities

Primary Mathematics Challenge (PMC)

Activity

- A mathematics challenge for the top 60% of pupils in the Primary 6 & 7 age range in the UK
- All questions are multiple choice, aiming to be both interesting and mathematical
- The first 20 questions are aimed at average pupils in the target group and score 1 point each, the following 5 questions are harder, and score 2 points each
- Schools order packs of Primary Maths Challenge papers. They are sent out in October
- Children sit the challenge any convenient time in November. Papers are marked by the school
- Certificates are included in the test pack and are awarded by the school
- Results are returned to the PMC office. The highest scoring pupils from across the UK are chosen to take part in the finals. This paper is a more difficult set of 25 multiple choice questions
- The PMC Finals paper is sent to schools to be completed in the first fortnight in the following February. PMC mark these papers and announce winners in late February. Award winners are announced on the MA website

Quizzes, Competitions and Activities

Masterclasses

Problem-Solving Masterclasses

Challenging problem solving masterclasses for 8 to 12 year old pupils based on books available from the Royal Society of Edinburgh

- Teachers introduce problems and help pupils to investigate a problem which at first sight is too hard. The investigations and problems may be copied for classroom use.

Masterclasses for able pupils

Masterclasses for Levels E and F involving teachers in secondary school and pupils from the associated primary schools.

Areas of study

- Probability
- Symmetry
- Codes and Communications: A sample is enclosed as Resource Sheet PA14.
- Tangrams and Pentominoes
- Calculator and Computer Activities
- Möbius Strips: An instruction sheet is provided as Resource Sheet PA44.

Tessellation Workshop

A workshop with a range of activities for P6 pupils of varying abilities.

Areas of study

- Line and rotational symmetry
- Tile construction using square and triangular paper to create unusual tiles
- Shape construction using Tangram and Geotile puzzles
- Penrose Tiles with special tiling properties. An information sheet is provided as Resource Sheet PA45.

Resource Sheets:
PA12–PA14, PA44,
PA45
Level: C-F

Resource Sheets:

PA12: Sample problem from "The Careless Miller and other Investigations".

PA13: Sample problem from "Juggling Jugs and other Investigations"

PA14: Morse Code

PA44: Möbius Strips

PA45: Penrose Tiles

Resources Required (Problem-Solving):

The Careless Miller and other Investigations and Juggling Jugs and other Investigations are by Teresa Carr. See Appendix for details.

(Able Pupils):

Probability: Dime Probability sets, loaded dice.

Symmetry, Tangrams and Pentominoes puzzles.

(Tessellation):

Mats and Tile Generators, Tile Sets and Geotiles.

Worksheets: from Heinnemann 8 and S3/S4 Foundation investigations.

**Resource Sheets:
PA15–PA25
Level: A-F**

Resource Sheets

(Activity 1)

PA15: The map-folding puzzle and the instruction sheet for the *Maps & Plans* theme.

PA16: The pyramid puzzle for the *Egyptians* theme.

PA17: The Jupiter's Moons puzzle and the instruction sheet for the *Earth and Space* theme.

(Activity 2)

PA18: Long Jump

PA19: Run and Hurdle

PA20: Monkey Bars

PA21: Parallel Bars and Sit Ups

PA22: Tree Measuring

PA23: Speed of the Burn

PA24: Height of the Building

PA25: Capacity of the Car Park

Maths and the Environment

Two schools organised extended events involving maths and the environment. The resource sheets contain a sample of some of the activities undertaken.

Activity 1 – Quiz and hands-on event (Level C-E)

- This particular activity was initially developed by a secondary school for use with its associated primaries during the final term of P7. It culminated in a half-day event where each school's work was displayed and pupils took part in various quizzes and puzzles. The puzzles were created by the pupils themselves and each school had to solve the other schools' puzzles. Sample extracts are included as Resource Sheets PA15–PA17.
- This model involved considerable work and planning by teachers in the primary and secondary schools but the worksheets could easily be used in individual schools. (See page 16 for further examples of Promoting Mathematics in Your School.)

Activity 2 – An outdoor maths weekend (Level C-D)

- The resources were developed for use on a residential weekend. They are equally suitable for use during day visits on much shorter outings or for sharing with parents. The activity cards should be laminated for outdoor use.

Maths and the Environment

**Resource Sheets:
PA26–PA36
Level: A-B**

Activity 3 – Maths focus week

- Planning sheets were completed at each Level. These provided opportunities for the development of mathematics in context in and around school. The following themes were developed:

Level A The Park, The School Playground, The School Building

Level B The Street, The Car Park, School Dinners

Level C The Local Shops, Newspapers

Level D The Local Supermarket, School Sports Day

Level E The School Budget

- Each teacher was given the relevant planning sheets for their stage. Support materials were made available. Samples are included as Resource Sheets PA26–PA36.

Resource Sheets

PA26–PA28: Planning sheets and support materials for “The Park” theme.

PA29–PA36: Planning sheets and support materials for “The Street” theme.

Resources Required

Planning sheets and support workcards for each level.

**Resource Sheets:
PA37–PA39
Level: B-E**

Resource Sheets

PA37: Quads pupil sheet

PA38: Pentominoes pupil sheet

PA39: Targets pupil sheet

Resources Required

Instruction sheet and marking scheme for each station.

Hands-on Maths

Maths Stations

A half-day competition for P7 pupils developed in collaboration with a secondary school and the associated primary schools.

Activity

- Pupils grouped by ability (blue – Level C & below, red – Level C/D, yellow – Level D/E). Teams of four were organised.
- There was a set of ten stations at each level containing puzzles and challenges. The stations were manned by S5 & S6 pupils who had an instruction sheet for the activity and a marking scheme. Points were recorded at each station for each team. The marking scheme was designed so that almost all attempts would earn some marks.

Sample Activities for Maths Stations

Blue

Pentominoes: Pupils were given a sheet of squared paper with 2 pentominoes. The remaining 10 have to be drawn. (Enclosed as Resource Sheet PA38.)

Four Digits: Using the digits 1, 2, 5, 6 (use only once in each mathematical sentence) with any mathematical signs make each number between 1 and 30.

Red

Nets of a cube: Using four different colours of Polydron squares, how many different nets of the cube can you find? Each net must be made so that when the cube is assembled the opposite faces are the same colour.

Quadrilaterals: Pupils were given a sheet of 9 square dotted paper with two different quadrilaterals already drawn. Fourteen more different quadrilaterals had to be drawn. (Enclosed as Resource Sheet PA37.)

Yellow

Angle Dominoes: 24 dominoes with pictures of angles and numbers of degrees written. Make a line as long as possible with correctly matching dominoes.

Targets: Pupils were given a sheet with single digit numbers in sets of four together with a target number. (Twelve in all.) They had to try and make the target number by using +, -, x, / (Enclosed as Resource Sheet PA39.)

Hands-on Maths

**Resource Sheets:
PA40–PA46
Level: A-E**

Activity 1 – Pop-up cards

- A craft-based activity to explore measurement and shape. Suitable for all children with sufficient manual dexterity and measuring skills.
- Children were taught to make a basic pop-up using paper. Instruction sheet is provided as Resource Sheet PA40.

Activity 2 – Maths Roundabout

A variety of activities for all Levels suitable for workshops or maths fairs.

Straws and Structures	Building structures with equilateral triangles.
Mirror Alphabet	Identifying symmetrical pictures and patterns.
Patchwork Tiles	Investigating symmetry and tessellations.
Möbius Strips	An introduction to topology.
Penrose Tiles	Exploring tessellating shapes and repeating patterns.

Worksheets can be issued directly to pupils, or used by teachers to lead a workshop or maths fair activity.

Activity 3 – Table Puzzles

The Resource Sheet includes sample puzzles from the Funmaths Roadshow. The Funmaths Roadshow consists of four boxes. Each box contains 25 mathematical activities.

The boxes are graded and gradually increase in difficulty. Most groups of pupils will use two of the boxes. The puzzles are set out on tables in a hall or large space. Pupils move around the room, in pairs or individually, tackling the problems in any order. Each pupil has a response sheet which is initialled by a helper when the activity is successfully completed.

Obtaining further resources from the Funmaths Roadshow

The masters for each box are available separately (£3 each) or as a set of four (£10) (Prices correct as of October 2000). Each pack contains A4 copies of the baseboards along with templates, solutions and an equipment 'shopping list'. An example puzzle from each box is included as Resource Sheet PA46.

See the Appendix for contact details.

Resource Sheets

(Activity 1)

PA40: Instruction sheet

(Activity 2):

PA41: Structures and Straws Instruction Sheet

PA42: Mirror Alphabet Instruction Sheet

PA43: Patchwork Tiles Instruction Sheet

PA44: Möbius Strips Instruction Sheet

PA45: Penrose Tiles Instruction Sheet

(Activity 3)

PA46: Example puzzles from Box 1, 2, 3 and 4.

Mathematical Visits

- Mathematics can be included in residential trips and excursions. Examples are given on pages 10 and 11.
- Museums and Art Galleries – Most education officers are very willing to incorporate maths into the educational programmes they provide. They may also provide maths trails if asked.
- The National Trust and Historic Scotland Properties lend themselves to mathematical investigations. Education Officers may help, but if you want to plan your own trail a useful publication is: *“A Teacher’s Guide To Maths In The Historical Environment”* by Tim Copeland, produced by English Heritage ISBN 1-85074-329-0
- Satrosphere in Aberdeen has two maths shows. A number of the exhibits have a mathematical focus.
- Glasgow Science Centre’s Spring 2001 programme includes Maths is Magic, a series of workshops for Levels A and B, investigating number, shape, position and movement and problem solving.

Maths trails:

- Our Dynamic Earth in Edinburgh has developed three maths trails for different levels of children (Primary 4/5, Primary 6/7, and Senior 1/2).
- Maths trails can be created in your locality. Trails have been developed in supermarkets, along Edinburgh’s Royal Mile, and in towns in Dumfries and Galloway, amongst other places.
- Churches and grave-yards are full of shapes, numbers & clocks to study. Graveyards can be good locations for trails following turn-and-pace directions.
- Looking closely at the street outside your school reveals number patterns on lamp posts, measurement opportunities with hydrants, shape investigations in brick patterns, paving tilings and windows & doors, timetable studies on bus stops etc.

Other ideas:

- Local parks make great places to try out fun methods for measuring trees. Playparks give plenty of scope for shape work
- Local shops and supermarkets are a rich source of number activities
- Visit a cinema! Film Education have produced a colourful workbook with the title “Cinema and Maths” to use during a visit to a local cinema. Contact: Film Education, Alhamra House, 27-31 Charing Cross Road, London. WC2H 0AU Tel: 020 7976 2291 Web: <http://www.filmeducation.org>

Funding For Mathematics Projects

Edinburgh Mathematical Society Enrichment Fund for Mathematics in Schools

- Every year £2000 is set aside to support projects for which funding is not available from normal school sources. There is a limit of £350 for individual awards and some applications are for less than this.
- Applications should contain a description of the proposed activity; details of who will benefit and in what way; a financial breakdown of expenditure involved; details of other applications made to support the activity; and an explanation of why normal school funds will not support the work.
- Awards are made in the period October – September. Early submission of applications is encouraged and details should be lodged by the end of June in each period. Applications are normally decided within six weeks.

- Details and application from

The Honorary Secretary
Edinburgh Mathematical Society
Department of Mathematics and Statistics
University of Edinburgh
James Clerk Maxwell Building
The King's Buildings
Edinburgh. EH9 3JZ
http://www.maths.ed.ac.uk/~edmathsoc/schools_enrichment.html

Education Extra: The Foundation for After-School Activities

- Education Extra Awards provide £125,000 in grants of up to £2500 to help schools set up or sustain any activity running out of normal school hours.
- Application forms and guidance notes are mailed to every head teacher in November each year and details also appear on the web site.
- The closing date for applications is the end of January. Schools will be informed of the result of their bid by the end of the spring term.
- Details on web site: <http://www.educationextra.org.uk/> or from:
Awards Applications, Education Extra, 17 Old Ford Road, London, E2 9PL, telephone: 0208 709 9912, email: s.donovan@educationextra.org.uk

Promoting Mathematics and Your School

Mathematics can be promoted in a variety of ways.

Ways to promote your school's maths activities

The school newsletter is a useful way of sharing information with parents, children and staff about the projects in your school.

Displays can be set up in local libraries, doctor clinics, shopping centres and other public venues. (Ensure that you have the permission of the parents of any children whose photographs you are displaying.)

Displays at open evenings and school events.

School Noticeboards

The local authority's website or magazine.

The local newspaper. (Local authority schools should follow authority guidelines on contact with the media.)

Maths projects:

- Interviewing grandparents or elderly people about "The Daily Maths Lesson, 1930s style!"
- Why we love maths – by Primary 4 children.
- What Maths Did For Me – children interview someone for whom maths has been an important life choice.

Class Visits:

- A visit to a firestation, post office, clinic, bank or shop.
- A visit to a maths trail.
- A visit to a museum, gallery or historic site.

Parent activities:

- Parental involvement in a token collection scheme or fundraising effort. A good photo-opportunity can be provided by the creation of a large fundraising thermometer or bar chart.
- The Grand Finale of a Maths Week.
- Family Maths Evenings.
- Workshops for pupils and parents.

Family Maths Challenges:

- Who can bring in the heaviest potato?
- How many different things can you get into a matchbox?
- Where each letter of the alphabet has a numerical value from 1 to 26, how many words can you find that add up to 100?

Appendix – Resources

A listing of useful books, posters and resources referred to in this booklet. Contact details for the companies mentioned are listed on page 20.

Books

Title	Author	Publisher	ISBN
The Careless Miller and other Investigations	Teresa Carr	Royal Society of Edinburgh	0 902198 13 0
Juggling Jugs and other Investigations	Teresa Carr	Royal Society of Edinburgh	0 902198 08 4
A Teacher's Guide To Maths In The Historical Environment	Tim Copeland	English Heritage	1 85074 3290
Cinema and Maths workbook		Film Education (free on request)	
Thinking Games Book 1	Valerie Anderson	Ontario Institute for Studies in Education	0 7744 0118 4
Thinking Games Book 2	Carl Bereiter Valerie Anderson	Ontario Institute for Studies in Education	0 7744 0119 2
Mensa Secret Codes for Kids	Robert Allen	Editions by three publishers currently available	
Mensa Mind Mazes for Kids	Robert Allen	Editions by three publishers currently available	
Circa Maths Magazine for Children	Charles and Juliet Snape	Circa Maths	N/A: Periodical
Assorted books and periodicals		Association for Teachers of Mathematics; Claire Publications; The Mathematical Association; QED and Griffin Multimedia; SMILE Mathematics; Tarquin Books	

Posters

Poster	Publisher	Notes
Various	Association for Teachers of Mathematics	Also postcards
Measurement (Set of 5)	Edinburgh Centre for Mathematics Education (ECME)	
Various	The Mathematical Association	Also postcards
Various	SMILE Mathematics	
Various	QED and Griffin Multimedia	Also calendar
Various	Tarquin Books	

Appendix – Resources continued

Tiles, Tangrams, and Other Resources

Pentominoes and Pentacubes	Pentomino templates and puzzles to download and print Pentacubes (DIME)	CIMT Tarquin Books
Polydron		Tarquin Books SMILE Mathematics
Tangrams	Wooden tangrams Dime foam tangrams Tangram templates to download and print	Highland Games Tarquin CIMT
Tile puzzles	Geotiles (plastic triangles) Busy Beetles (beetle tiles) TakTiles (DIME) Pattern Blocks	Sumdials Various shops Tarquin Books Claire Publications
Weighted or biased dice	Plastic weighted dice Wooden weighted dice	Tarquin Books Highland Games

Appendix – Websites

A listing of all the websites referred to in this booklet, with a selection of further websites of interest.

Maths Year 2000 Scotland	http://www.mathsyear2000scotland.org.uk/
Scottish Virtual Teachers' Centre	http://www.svtc.org.uk/
National Grid for Learning Scotland	http://www.ngflscotland.gov.uk/
The Mathematical Association	http://www.m-a.org.uk/
Association of Teachers of Mathematics	http://www.atm.org.uk/
Scottish Mathematical Council	http://www-maths.mcs.st-and.ac.uk/~smc/

Further Sources of Questions and Resources:

Centre for Innovation in Mathematics Teaching (CIMT) Range of free resources, including pentomino and tangram puzzles, quiz questions and worksheets	http://www.ex.ac.uk/cimt/
Primary Resources – Mathematics Range of resources contributed by teachers from across the UK	http://www.primaryresources.co.uk/maths/
Puzzlemaker Online generator for number puzzles and mazes	http://www.puzzlemaker.com/
1000 Problems 1000 problems from the Mathematical Association	http://www.1000problems.com/
The Number Years History of maths quiz in a game show format that you can customise to your own needs	http://www.jquinn.oxy.edu/numberyears/
Liverpool Mathematical Society Produces Funmaths Roadshow	http://www.m-a.org.uk/bc/live.htm

Other Maths Websites:

The History of Mathematics Archive	http://www-history.mcs.st-and.ac.uk/history/
Nrich Magazine Online monthly magazine with a large archive of resources and links	http://nrich.maths.org/
Cynthia Lanius Ideas for fun mathematics lessons	http://math.rice.edu/~lanius/Lessons/
Mega Mathematics More interesting lesson ideas	http://www.c3.lanl.gov/mega-math/
Cut The Knot Puzzles and articles on various aspects of mathematics	http://www.cut-the-knot.com/
Ivars Petersen's Mathsland, Science News: Regular column on mathematics, written for an adult, but non-specialist audience	http://www.sciencenews.org/
Eric Weisstein's World of Mathematics Mathematics encyclopedia	http://mathworld.wolfram.com/
World of Escher Website devoted to mathematical artist, M.C. Escher	http://www.worldofescher.com/
The Geometry Junkyard	http://www.ics.uci.edu/~eppstein/junkyard/

Appendix – Contact Details

Contact details for all the organisations and companies mentioned in this booklet.

Association of Teachers of Mathematics,

7 Shaftesbury Street, Derby DE28 8YB

Tel: 01332 346599, Web: <http://www.atm.org.uk/>

Circa Maths

10 Narcissus Road, London, NW6 1TH

Tel: 020 7433 1231, Email: cjsnape@aol.com

Web: <http://www.circamaths.co.uk/>

Claire Publications

Unit 8, Tey Brook Craft Centre, Great Tey, Colchester, Essex, CO6 1JE

Web: <http://www.clairepublications.com/>

Education Extra – The Foundation for After-School Activities

17 Old Ford Road, London, E2 9PL

Tel: 0208 709 9912, e-mail: s.donovan@educationextra.org.uk

Web: <http://www.educationextra.org.uk/>

Edinburgh Centre for Mathematics Education (ECME),

Faculty of Education, The University of Edinburgh, Holyrood Road, Edinburgh, EH8 8AQ

Edinburgh Mathematical Society

Department of Mathematics and Statistics, Edinburgh University, Edinburgh, EH9 3JZ

Web: <http://www.maths.ed.ac.uk/~edmathsoc/>

Film Education

Alhamra House, 27-31 Charing Cross Road, London. WC2H 0AU

Tel: 020 7976 2291

Web: <http://www.filmeducation.org/>

Glasgow Science Centre

50 Pacific Quay, Glasgow, G51 1EA

Tel: 0141 420 5010

Web: <http://www.gsc.org.uk/>

Highland Games

Old Post Office, Tomatin, IV13 7YN

Email: high@halfpast.demon.co.uk

Web: <http://www.halfpast.demon.co.uk/>

Learning and Teaching Scotland

74 Victoria Crescent Road, Glasgow, G12 9JN

Tel: 0141 337 5000, Fax: 0141-337-5050

Web: <http://www.LTScotland.com/>

The Liverpool Mathematical Society

c/o Ian Porteous, Dept. of Mathematical Sciences, The University of Liverpool, Liverpool, L69 7ZL

Tel: 0151 794 4066/4012, Email: porteous@liverpool.ac.uk

The Mathematical Association

259 London Road, Leicester. LE2 3BE

Tel: 0116 2210013

Web: <http://www.m-a.org.uk/>

Maths on the London Underground

Web: <http://www.newton.cam.ac.uk/wmy2kposters/>

Our Dynamic Earth

Holyrood Road, Edinburgh, EH8 8AS

Tel: 0131 550 7800, Email: enquiries@dynamicearth.co.uk

Web: <http://www.dynamicearth.co.uk/>

Polydron International Limited, Kemble, Cirencester, Gloucestershire, GL7 6FD

Tel: 01285 770055, Fax: 01285 770171

Web: <http://www.polydron.com/>

QED Books and Griffin Multimedia

Pentagon Place, 195B Berkhamsted Road, Chesham, Bucks, HP5 3AP

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Maths Year 2000 Scotland
ICMS, 14 India Street, Edinburgh, EH3 6EZ
Telephone: 0131 220 1777
Fax: 0131 220 1053
Email: info@mathsyear2000scotland.org.uk
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