

Maths Mansion Part 2 is a unit of ten 10-minute programmes designed to support key objectives in the mathematics curriculum and in particular, aspects of the National Numeracy Framework. The Maths Mansion Part 2 package consists of a video, a Teachers' Guide, an Activity Book and a website: www.4learning.co.uk/mathsmansion

A particular feature of the programmes is the opportunity to collect special maths cards. Pupils can collect the cards by answering the maths challenge in each programme at the Maths Mansion website. They can then download and print out the cards. Alternatively, teachers can photocopy the sheets of cards printed in the back of the teacher's guide to award in class.

It is recommended that teachers preview the programmes to note the places they may wish to stop the tape to encourage discussion. The programmes could be used as part of the introductory class or main teaching activity. After viewing, there could be a whole-class discussion of the maths challenge presented at the end of each programme. Pupils could then do follow-up work on related activities.

The programmes would be very useful as part of the bank of resources available to support mathematics in school and can be used to introduce, consolidate or extend work on a particular topic.

Programme 11: Take it Easy
Strategies for calculating differences mentally

Decimole helps Sad Man to find the difference between two numbers by counting on from the lower number. On the college campus, Bad Man asks passers-by to subtract numbers by jumping along his number line. The Jumper, the latest Maths Monster Machine, sings 'Do the Jump'. In the Great Hall for the final challenge, the contestants follow Jumper's advice and win a maths card.

Viewers' challenge: Work out mentally the subtraction: 7007 minus 4994 .

Programme 12: Nine Nits is All There's Room For
Addition and subtraction of two integers less than 10 000

Sad Man introduces the Nits and Hens and a silly song, 'Nine Nits is All There's Room For'. The contestants complete a couple of additions in the warm-up session by remembering Sad Man's silly song. Bad Man bemuses a passer-by when he asks if he likes handling money. Sad Man returns to remind viewers that Nits can turn into Hens and Hens can turn into Nits when subtracting. In the Great Hall, contestants follow the rules they have learned and cope with the subtraction of 3-digit numbers to win another maths card.

Viewers' challenge: First add 864 and 468, then subtract 468 from 864.

Programme 13: Breaking Up is Easy to Do
Multiplication facts to 10×10 and working out unknown facts from known facts

Sad Man finds some times table hot cross buns that Decimole wants to eat. His tip for learning tables is to use what you know to work out what you don't know. The warm-up session involves knowledge of table facts. Bad Man spends time with some children in a playground working out tables on a chalked number square. The Breaker, another Maths Monster Machine, shows how to break up multiplications into manageable bits. In the Great Hall, the contestants have to work against the clock to find different ways of working out six times seven. They run out of time and fail to get a maths card.

Viewers' challenge: Find three different ways of working out 5×9 .

Programme 14: You Ain't Nothing but a Houndred
Multiplying a 3-digit number by a single digit number

Sad Man adds the Red Houndred to his collection of Nits and Hens. In the warm-up session, contestants have to multiply a 3-digit number by a single digit number. Sad Man interrupts with his song 'When it Comes to Multiplying'. Bad Man interviews members of the public for estimates of 257×9 . In the final contest, Bad Man changes the rules. The contestants manage the estimates but are too slow to get the answers, so do not get a maths card.

Viewers' challenge: Find the answers to the following: 444×4 , 666×6 and 888×8 .

Programme 15: Dividing We Stand
Dividing 3-digit numbers by a single digit number

Sad Man demonstrates dividing by four using the Houndreds, Hens and Nits. In the Great Hall, Bad Man tests the contestants on dividing by four. He reminds them about the importance of estimating before doing the calculation. Sad Man introduces his song 'When You Come to Do Dividing'. Bad Man challenges three people in the street to divide 365 sweets between them. For the final challenge the contestants have to divide by six. They work quickly and confidently and win one of the valuable maths cards.

Viewers' challenge: Find $345 \div 2$ and $789 \div 6$.

Programme 16: Double Digit Dating
Multiplying 2-digit numbers by 2-digit numbers

Sad Man has noticed the Nits and Hens in his hair are multiplying. He sings a sad song about the things he has noticed. Bad Man presents the contestants with the challenge of multiplying a 2-digit number by a 2-digit number. The contestants do very well and Sad Man goes over the method they used. Bad Man asks some passers-by to help him multiply 36 by 24, much to their amazement. In the Great Hall, the final challenge is against the clock. The contestants have to multiply 53 by 42. They work quickly and accurately and win another maths card.

Viewers' challenge: What is 98×76 and 54×32 ?

Programme 17: Six Flat Worms
Finding areas of rectangles

Sad Man has six paper worms that he puts to bed. He wants to know how much material he would need to make a bedspread to cover the worms. Bad Man provides the answer – a rectangle, $10\text{cm} \times 6\text{cm}$ with an area of 60 square centimetres. In the warm-up session, the contestants have to measure several rectangular objects. Bad Man rearranges their measurements to display the formula: area = length \times breadth. Bad Man upsets some people by talking of a PAT tax – a tax for the area of ground they or their pets cover. In the Great Hall, the contestants succeed with the test to estimate then measure some more items. They are pleased to get another maths card.

Viewers' challenge: How much paper would be needed to cover exactly the faces of a brick with the dimensions 21cm x 10cm x 8cm?

Programme 18: Learn Your Lines
Recognising properties of parallel and perpendicular lines

Sad Man and the animals are making words out of straws. Sad Man points out some parallel lines in them. In the warm-up session, the contestants have to make some parallel lines. Bad Man visits a sports centre, scanning for parallel lines with his line detector. Sad Man, meanwhile, has been exploring perpendicular lines. The Line Lizard makes an appearance and sings a song about eating lines. The final challenge in the Great Hall is to mark the parallel and perpendicular lines in a number of geometric shapes. The contestants do not beat the clock, so fail to win a maths card.

Viewers' challenge: How many letters on a computer keyboard have:

- parallel lines?
- perpendicular lines?
- both parallel and perpendicular lines?
- neither parallel nor perpendicular lines?

Programme 19: Rectangle Delight
Recognising the properties of rectangles

Sad Man and the animals are making some rectangular sandwiches for a party. In the Great Hall, Bad Man tells the contestants they have to make rectangles from some lines and angles on a screen. Bad Man visits a supermarket and confuses customers by telling them that only rectangles are allowed at one of the tills. Rector, the Sniffer Dog, sings a song about sniffing out rectangles. In the Great Hall, the contestants have to produce rectangles from a collection of shapes. They complete the task and win a maths card.

Support material for Maths Mansion Part 2

Teachers' Guide: 206904 £3.95 • Activity Book: 206898 £6.95
Maths Mansion website: www.4learning.co.uk/mathsmansion

For information and orders, consult 4Learning's annual brochure or visit www.4learning.co.uk • Email: sales@4learning.co.uk
4Learning, PO Box 444, London SW1P 2WD

Viewers' challenge: Connect up the outside points of each letter on a computer keyboard. How many letters have:

- no rectangles?
- one rectangle?
- more than one rectangle?

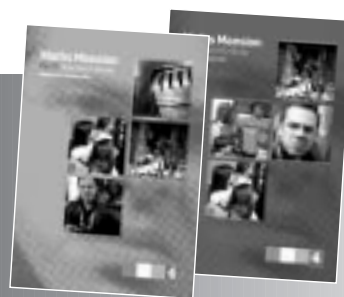
Programme 20: Triangle Delight
Recognising the properties of triangles

Sad Man and the animals sing a sad song about the different sorts of triangles. They are having fun until Decimole demolishes all the triangles. In the Great Hall, the contestants have to make different triangles from lines on a screen. Sad Man reappears and demonstrates how to make an equilateral triangle from A4 paper. Bad Man startles some passers-by in a park by asking them if they have seen any escaped triangles. The triangles sing their catchy song. In the Great Hall, the contestants construct a right-angled triangle and a scalene triangle and so win the last maths card they need to escape from Maths Mansion.

Viewers' challenge: Connect up the outside points of each letter on a computer keyboard. How many of each of the following triangles can you find?

- equilateral
- isosceles
- scalene
- right-angled

How many letters have no triangles?



Mathematics for 9–10 year olds

Maths Mansion Part 2



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