

**Maths Mansion Part 4** is a unit of ten 10-minute programmes designed to support key objectives in the mathematics curriculum, particularly aspects of the National Numeracy Framework. The Maths Mansion Part 4 package consists of a video, a Teachers' Guide, an Activity Book and a website: [www.channel4.com/mathsmansion](http://www.channel4.com/mathsmansion)

A feature of the programmes is the opportunity for pupils to collect special maths cards. These can be collected by answering the maths challenge in each programme and visiting the above website.

It is recommended that teachers preview the programmes to note the places they might 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 31: All the Way Round**  
Calculating the perimeter of simple compound shapes that can be split into rectangles

Sad Man tells a story about a farmer who went out of business because he didn't mend the perimeter fence around his farm. In the warm-up session, the contestants review their knowledge of rectangles. A song reminds viewers that the opposite sides of a rectangle are of equal length. Bad Man confuses a sunbather by asking her to stay inside her perimeter fence. Sad Man demonstrates how to find the perimeter of a field by dividing it into rectangular parts. In the Great Hall, the contestants find the perimeter of a compound shape by dividing it into rectangles.

**Programme 32: The Worms Return**  
Calculating the area of simple compound shapes that can be split into rectangles

Sad Man reminds viewers that the area of a rectangle is calculated by multiplying the length and breadth. In the warm-up session, the contestants successfully calculate the area of a rectangle. Sad Man interrupts to show them how to calculate the area of a compound shape by splitting it into rectangles. The catchy song reiterates his advice. In the park, Bad Man and his assistant confuse several people as they try to fence everyone off. Back in the Great Hall for the final challenge, the contestants have to calculate the area of several compound shapes. They do well initially but are beaten by the clock.

**Programme 33: A Very Fine Pet is a Polyhedron**  
Describing and visualising 3D shapes

Sad Man thinks he's found the perfect pet – a polyhedron. He shows viewers a selection of polyhedrons and introduces a song that describes a prism, a hexahedron and an octahedron. In the warm-up session, the contestants meet Bad Man's challenge and show the faces, parallel edges and perpendicular faces on a cube. Following the song 'Yes a Very Fine Pet is a Polyhedron', Bad Man visits a pet shop and upsets the owner by asking for advice on his pet polyhedron. In the Great Hall, the final challenge is about the attributes of different 3D shapes. The contestants spot Bad Man's trick and gain another maths card.

**Programme 34: Better Get Back into Shape and be a Square**  
Naming and classifying quadrilaterals

Sad Man introduces some parallelograms. He reveals that rectangles are special parallelograms because they have four right angles. The song is about the attributes of a parallelogram. Bad Man introduces the quadrilateral. In the warm-up session, the contestants show what they know about parallelograms. Sad Man sings about the rhombus. He points out that a square is a rhombus and also a parallelogram. Bad Man disturbs a passer-by in a park when he asks him if he has seen any shapes running loose. In the final test, Bad Man introduces another quadrilateral – the kite. The contestants successfully complete the final challenge.

**Programme 35: Angelman!**  
Using a protractor to measure angles to the nearest degree

Sad Man shows off his angle bangle with its built-in protractor. He shows how he uses it to estimate then measure angles. In the warm-up session, the contestants sort angles into acute, obtuse and right angles. Sad Man shows how to estimate and measure angles. In the street, Bad Man has a larger protractor and intrigues a passer-by by asking her to make an obtuse angle. For the final challenge, the contestants have to sort angles into acute and obtuse angles, estimate their size and then measure them. They are successful but miss out on their maths card because of Bad Man's last-minute trick.

**Programme 36: The X and Y Files**  
Reading and plotting co-ordinates in the four quadrants

Sad Man introduces his 'co-ordinator dater' machine. Snorter and Decimole volunteer to try it out. In the warm-up session, the contestants have to plot co-ordinates on a grid. Sad Man tests Mr Girhalf on the dater machine. His score is in negative numbers. Sad Man uses a similar dater machine to survey some passers-by in the street. He asks them to estimate their friends' score on the machine. Back in the Great Hall, the contestants have to cope with a grid with four quadrants. They meet the challenge just in time to get a maths card.

**Programme 37: Makeover**  
Recognising translations

Snorter and Decimole have undergone a complete makeover in an attempt to gain higher scores on the dater machine. In the warm-up session, the two contestants are asked to translate points on a grid by moving them left, right, up and down. Sad Man makes a successful transformation of a right-angled triangle. The Translator, one of the Maths Monster Machines, appears to sing the 'Translation' song. Bad Man meets some children in a school and gets them to play 'translations'. In the Great Hall for the final test, the contestants have to translate a triangle to different positions. They are successful and win a maths card.

**Programme 38: Turning Points**  
Recognising rotations

Sad Man demonstrates how a triangle rotates clockwise and anti-clockwise. A song describes what happens to the three vertices as a triangle is rotated. In the warm-up session, the contestants have to say what happens to the different vertices of a triangle as it is rotated. The Rotation machine demonstrates what it can do on a building site. Sad Man gives the contestants a second warm-up session before the final test. Back in the Great Hall for the final challenge, the contestants have to rotate a rectangle  $90^\circ$  clockwise and anti-clockwise. The two contestants succeed in the first task but take too long over the second task, so they fail to win a maths card.

**Programme 39: On Reflection**  
Recognising reflections

The children in Maths Mansion suspect there is some connection between Bad Man and Sad Man, but Sad Man denies it. Sad Man demonstrates that his reflection is as far behind the mirror as he is in front. In the warm-up session, the contestants have to place markers to show the reflection of a triangle. Sad Man decides to take a further look at his reflection, this time using a photograph. He predicts where the reflection should be, then measures to check. Bad Man has some school children moving around a grid taking up different positions. Back in the Great Hall, the final test involves the contestants drawing reflections of different shapes. The contestants succeed in the task and win another maths card.

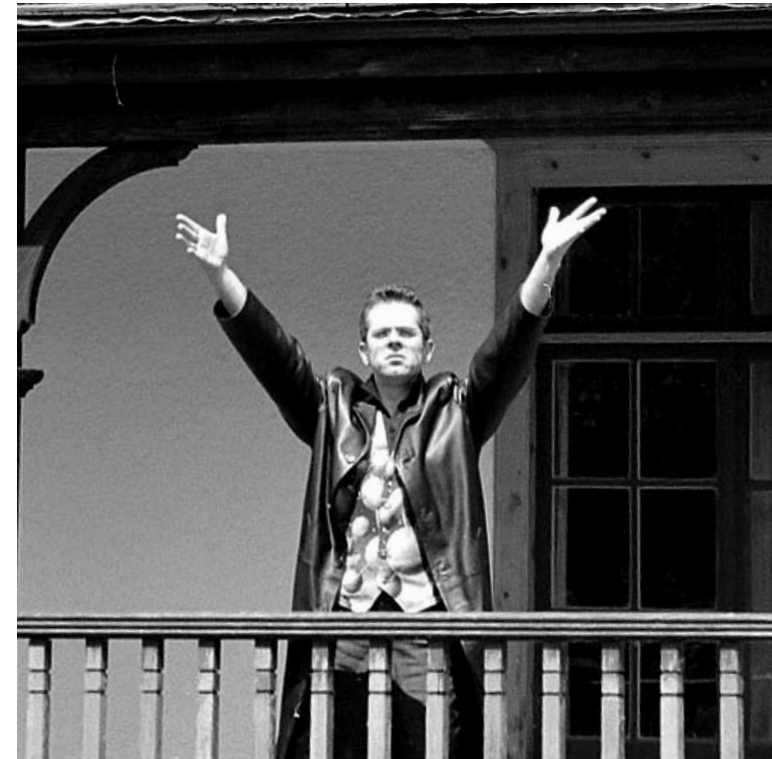
**Programme 40: Pie Pie Everyone**  
Solving a problem by extracting and interpreting information in pie charts

The children in Maths Mansion are now convinced there is some close connection between Sad Man and Bad Man. Sad Man shows a pizza he is preparing with different toppings to suit his different animal friends. In the warm-up session, Bad Man tests the contestants' knowledge of pie charts. Sad Man and his animal friends put on a fashion show to model different fractional amounts of a pie chart. Some school children show how to make a 'living' pie chart. In the Great Hall, the final challenge is to construct a pie chart. The contestants work carefully and are rewarded with the maths card that allows them to leave Maths Mansion. At the end, Bad Man gets his comeuppance from a vicious Decimole.

The viewers' challenges for these programmes are available online.  
Go to: [www.channel4.com/mathsmansion](http://www.channel4.com/mathsmansion)

Mathematics for 10–11 year olds

# Maths Mansion Part 4



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**Support material for Maths Mansion Part 4**

Teachers' Guide: 400032 £3.95 • Activity Book: 400033 £6.95  
Maths Mansion website: [www.channel4.com/mathsmansion](http://www.channel4.com/mathsmansion)

For information and orders, consult 4Learning's annual brochure or visit [www.channel4.com/learningshop](http://www.channel4.com/learningshop)  
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