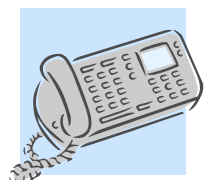
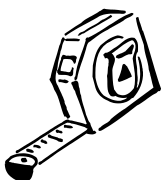


Made to Measure Murder Mystery

Lady Antonia Fotherington looked down lovingly at her cat and decided that it was time to change her will. Mr Kittywake from the local cats' home had visited her yesterday with the distressing news that their landlord had increased the rent. Who better to take over Fotherington Towers when she was gone? Her children were all grown up and had jobs. Just imagine hundreds of poor unwanted cats finding a happy home at Fotherington Towers.

Her mind made up, she telephoned her solicitor, Edward Rumples to arrange for him to change her will. She then telephoned each of her sons and daughters to fill them in on the good news for cats. Strangely, none of them seemed to share her enthusiasm. It was going to be a busy day: Edward Rumples was due at 11am and each of her sons and daughters had said that they would come and talk to her as well.

At 11am prompt, Edward Rumples knocked on the door. No one answered but 30 seconds later, there was a loud gun shot. Edward pushed open the door and raced inside. Lying dead on the sitting room floor was Lady Fotherington. Edward Rumples saw a movement by the stairs and then heard a step creak before the murderer ran out of the back door unseen. He dialled 999 and 30 minutes later the police arrived. All of Lady Fotherington's sons and daughters were also there.



Police Work

Three weeks later, Detective Inspector Marples was looking through the evidence. It seems that there were 5 clues and each clue removed at least one of the 6 suspects. He drew a chart to help him decide who the murderer was:

Name	Clue 1	Clue 2	Clue 3	Clue 4	Clue 5
Algy					
Hubert					
Daphne					
Bertie					
Enid					
Sapphire					

Clue 1: Dial M for Murder.

The police had requested the phone records from the telephone company. They discovered that Lady Fotherington had phoned her sons and daughters at these times:

Name	Phone call started	Length of phone call	Phone call finished
Algy	6.57am	18 mins	
Hubert	7.18am	22 mins	
Daphne	7.43am	12 mins	
Bertie	7.58am	22 mins	
Enid	8.21am	14 mins	
Sapphire	8.38am	17 mins	

The police had also worked out how far each person lived from Fotherington Towers and the maximum speed which could be travelled along the route.

Name	Place	Distance from Fotherington (miles)	Maximum speed for whole journey (mph)	Time for journey	Time of arrival
Algy	Bigbury	105	30		
Hubert	Smallbury	150	50		
Daphne	Dimpleforth	75	30		
Bertie	Little Budbury	60	20		
Enid	Rumpletoft	60	30		
Sapphire	Davenbridge	80	40		

It seemed to the Inspector that one of the suspects could not have been at Fotherington at the time of the murder. But who?

Clue 2: Weighing the evidence.

Police forensic experts examined the stairs from the living room. They found one step which creaked. Tests showed that a weight of 60kg was needed to make it creak and that a weight of 110kg would break it.

All the suspects were weighed as were the cases they were carrying that day. These are the results:

Name	Weight (kg)	case weight (g)	Total weight (kg)
Algy	70kg	4,000g	
Hubert	107kg	3,500g	
Daphne	56kg	5,650g	
Bertie	92kg	8,500g	
Enid	106kg	3,500g	
Sapphire	82kg	2,500g	

Would all the suspects have made the stair creak?

Clue 3: Don't bottle it.

The detectives found a tray with two cups on. These cups had been used by Lady Antonia and the murderer. Beatrice the maid remembered clearly pouring the milk into the milk jug from a full 1 litre bottle. She did not however see who Lady Antonia shared the drink with. Detectives measured how much milk was in the bottle and how much was in the jug. Lady Antonia and each of her sons and daughters always drank exactly the same number cups of a particular strength of tea or coffee.

Milk left in 1 litre bottle	850ml
Milk left in jug	125ml
Milk left in jug and bottle	
Milk used in tea/coffee	

Type of drink	Weak	Medium	Strong
Milk needed in tea (ml)	15	10	5
Milk needed in coffee (ml)	15	7.5	6

Name	Cups Drank	Type of drink	Milk used
Lady Antonia	1	Medium tea	
Algy	2	Medium tea	
Hubert	3	Strong tea	
Daphne	1	Weak tea	
Bertie	1½	Medium tea	
Enid	2	Medium coffee	
Sapphire	1	Weak coffee	

	Milk used by son/daughter	+	Milk used by Lady Antonia	Total milk used
Algy				
Hubert				
Daphne				
Bertie				
Enid				
Sapphire				

Who could not have shared a drink with Lady Antonia?



M

B



D

Scale: 1cm = 2 miles

C

D

E

F

P



Clue 4: Getting to the “route” of the case.

At 1pm all the suspects were asked to drive to the main police station to be finger printed and interviewed. Sergeant Biggins noted down the mileage on their cars at the manor. At 4pm, while all the suspects were still being interviewed, the murder weapon was found at a lay by in a bin (see map). There are several ways to get to the police station from the Manor. Did all the suspects travel past the lay by?

Name	Mileage at manor	Mileage at station	Miles travelled between	Route travelled	Did route pass gun?
Algy	15228	15289			
Hubert	20189	20240			
Daphne	16472	16564			
Bertie	5148	5205			
Enid	2167	2222			
Sapphire	58751	58811			

Route	cm	miles
M-B-C-D-P		
M-D-C-D-P		
M-D-E-F-P		
M-D-C-F-P		
M-D-E-F-C-D-P		
M-B-C-F-P		

Clue 5: That takes the biscuit.

In the kitchen was a plate of biscuits. These had been requested by Lady Antonia by internal phone when the murderer arrived. However, the maid forgot to take them through.

Sargent Pickles, measured them and feeling a little bored, worked out that the area of biscuits on the plate was 100cm^2 . A few minutes later, one of the constables, feeling a little hungry, ate them all. The maid was too shocked to remember the number and type of biscuits requested for the guest. She had put on 2 Very Rich Tea biscuits for Lady Antonia as usual. Sargent Pickles lost all his measurements except the total area.

Each of the suspects always eats a certain number of a particular type of biscuit. All the biscuits have straight sides and 4 right angles.

Name	Biscuit type	Biscuit length (cm)	Biscuit width (cm)	Number usually eaten	Area of biscuits (cm^2)
Lady Antonia	Very Rich Tea	7	2	2	
Algy	Hob Nob	6	4	3	
Hubert	Choccy squares	3		8	
Bertie	Longbread	6	6	2	
Enid	Indigestives	9	2	4	
Sapphire	Kat Kit	7	5	2	
Daphne	Garybaldy	8	1.5	6	

	Area of biscuits ordered by son/daughter	+	Area of biscuits ordered by Lady Antonia	Total biscuit area
Algy				
Hubert				
Daphne				
Bertie				
Enid				
Sapphire				

We know 2 of the biscuits on the plate were for Lady Antonia but which of the suspects would not have biscuits of the right area to total 100cm^2 ?

Police Work

Three weeks later, Detective Inspector Marples was looking through the evidence. It seems that there were 5 clues and each clue removed at least one of the 6 suspects. He drew a chart to help him decide who the murderer was:

Name	Clue 1	Clue 2	Clue 3	Clue 4	Clue 5
Algy			x		
Hubert		x		x	
Daphne					
Bertie	x				
Enid				x	
Sapphire					x

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Name	Phone call started	Length of phone call	Phone call finished
Algy	6.57am	18 mins	7:15
Hubert	7.18am	22 mins	7:40
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Enid	8.21am	14 mins	8:35
Sapphire	8.38am	17 mins	8:55

The police had also worked out how far each person lived from Fotherington Towers and the maximum speed which could be travelled along the route.

Name	Place	Distance from Fotherington (miles)	Maximum speed for whole journey (mph)	Time for journey	Time of arrival
Algy	Bigbury	105	30	3hr 30	10:45
Hubert	Smallbury	150	50	3 hr	10:40
Daphne	Dimpleforth	75	30	2hr 30	10:25
Bertie	Little Budbury	60	20	3hr	11:20
Enid	Rumpletoft	60	30	2hr	10:35
Sapphire	Davenbridge	80	40	2hr	10:55

It seemed to the Inspector that one of the suspects could not have been at Fotherington at the time of the murder. But who?

Clue 2: Weighing the evidence.

Police forensic experts examined the stairs from the living room. They found one step which creaked. Tests showed that a weight of 60kg was needed to make it creak and that a weight of 110kg would break it.

All the suspects were weighed as were the cases they were carrying that day. These are the results:

Name	Weight (kg)	case weight (g)	Total weight (kg)
Algy	70kg	4,000g	74
Hubert	107kg	3,500g	110.5
Daphne	56kg	5,650g	61.650
Bertie	92kg	8,500g	102.5
Enid	106kg	3,500g	109.5
Sapphire	82kg	2,500g	84.5

Would all the suspects have made the stair creak?

Clue 3: Don't bottle it.

The detectives found a tray with two cups on. These cups had been used by Lady Antonia and the murderer. Beatrice the maid remembered clearly pouring the milk into the milk jug from a full 1 litre bottle. She did not however see who Lady Antonia shared the drink with. Detectives measured how much milk was in the bottle and how much was in the jug. Lady Antonia and each of her sons and daughters always drank exactly the same number cups of a particular strength of tea or coffee.

Milk left in 1 litre bottle	850ml
Milk left in jug	125ml
Milk left in jug and bottle	975ml
Milk used in tea/coffee	25 ml

Type of drink	Weak	Medium	Strong
Milk needed in tea (ml)	15	10	5
Milk needed in coffee (ml)	15	7.5	6

Name	Cups Drank	Type of drink	Milk used
Lady Antonia	1	Medium tea	10
Algy	2	Medium tea	20
Hubert	3	Strong tea	15
Daphne	1	Weak tea	15
Bertie	1½	Medium tea	15
Enid	2	Medium coffee	15
Sapphire	1	Weak coffee	15

Who could not have shared a drink with Lady Antonia?



M

7cm

3.5cm

B



Scale: 1cm = 2 miles

D

7.5cm

8cm

C

13cm

7cm

9cm

D

E

3cm

F

7cm

7cm

P



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At 1pm all the suspects were asked to drive to the local police station to be finger printed and interviewed. Seargent Biggins noted down the mileage on their cars at the manor. At 4pm, while all the suspects were still being interviewed, the murder weapon was found at a lay by in a bin (see map). There are several ways to get to the police station from the Manor. Did all the suspects travel past the lay by?

Name	Mileage at manor	Mileage at station	Miles travelled between	Route travelled	Did route pass gun?
Algy	15228	15289	61	M-D-C-F-P	Yes
Hubert	20189	20240	51	M-B-C-D-P	No
Daphne	16472	16564	92	M-D-E-F-C-D-P	Yes
Bertie	5148	5205	57	M-D-C-D-P	Yes
Enid	2167	2222	55	M-B-C-F-P	No
Sapphire	58751	58811	60	M-D-E-F-P	Yes

Route	cm	miles
M-B-C-D-P	25.5	51
M-D-C-D-P	28.5	57
M-D-E-F-P	30	60
M-D-C-F-P	30.5	61
M-D-E-F-C-D-P	46	92
M-B-C-F-P	27.5	55

Clue 5: That takes the biscuit.

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Lady Antonia	Very Rich Tea	7	2	2	28
Algy	Hob Nob	6	4	3	72
Hubert	Choccy squares	3		8	72
Bertie	Longbread	6	6	2	72
Enid	Indigestives	9	2	4	72
Sapphire	Kat Kit	7	5	2	70
Daphne	Garybaldy	8	1.5	6	72

We know 2 of the biscuits on the plate were for Lady Antonia but which of the suspects would not have biscuits of the right area?