

# Maths- Skills- 9/2/21

Yesterday we solved a mystery together, solving problems and finding the correct suspect.

Can you have a go at completing this mystery alone. Follow the slides like yesterday.

Feel free to download the 'suspects list' sheet if you would like to whittle down your suspects as you go!

Learning objective; To review my knowledge around prime numbers.

# Prime numbers

The focus around this mystery is all about prime numbers.

A prime number is a special number which only has 2 factors; one and itself.

It can not be divided into any other numbers with a whole number as a result. Here are the prime numbers up to 100.

As a year 5 we are expected to know them up to 30.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



# The Mystery of the Great Bakes Thief



Great Bakes is a popular local bakery that makes the most delicious cakes and every Saturday, hundreds of people visit it to buy doughnuts, cream cakes and other goodies to enjoy at the weekend. However, last night there was a burglary at Great Bakes and now the shelves are empty. The police have been investigating what happened.

As the Detective Chief Inspector, it is your job to find out who the greedy thief is. Your officers have taken down the names of possible suspects. Your task is to solve the clues and find out who the thief is.

Today you are going to answer some mathematical questions to try and uncover who has pinched the dragon head. Use the answers to solve the mystery and reveal our thief!

Police have visited the 'Greta Bakes' bakery and collected information from all of the suspects.

The clues will point to information about the culprit.

As we reveal information we will revisit the suspect list eliminating those innocent dancers.

<b>Name</b>	<b>Gender</b>	<b>Height</b>	<b>Right or left-handed</b>
Hannah Brown	female	short	right
Susan Granger	female	tall	right
Henry Jones	male	short	left
Yavna Chowdhury	female	short	right
Simon King	male	tall	right
Tan Yong	male	short	right
Helen Edwards	female	short	left
Toby Ply	male	tall	right
Jack Grande	male	tall	left
Temi Howler	female	short	left
Patrick Jenson	male	tall	right

# Male or female?

This clue will identify if the thief was a male or female.

Count how many prime numbers there are.

If there are an even number of prime numbers the suspect is male.

If there are an odd number of prime numbers the suspects is female.

## **Clue One**

Circle all of the prime numbers in the list below. If you have an even number of prime numbers, the suspect is male. If you have an odd number of prime numbers, the suspect is female.

2	14	9	10	15	8
3	18	7	13	19	5
4	17	11	16	6	12

# What have we found?

## The Mystery of the Great Bakes Thief - **Answers**

### Clue One

Circle all of the prime numbers in the list below. If you have an even number of prime numbers, the suspect is male. If you have an odd number of prime numbers, the suspect is female.

②      14      9      10      15      8  
③      18      ⑦      ⑬      ⑲      ⑤  
4      ⑰      ⑪      16      6      12

8 prime numbers

8 is even so our suspect is male.

Name	Gender	Height	Right or left-handed
Hannah Brown	female	short	right
Susan Granger	female	tall	right
Henry Jones	male	short	left
Yavna Chowdhury	female	short	right
Simon King	male	tall	right
Tan Yong	male	short	right
Helen Edwards	female	short	left
Toby Ply	male	tall	right
Jack Grande	male	tall	left
Temi Howler	female	short	left
Patrick Jenson	male	tall	right

So who can we eliminate from our investigation?

# What have we found?

## The Mystery of the Great Bakes Thief - **Answers**

### Clue One

Circle all of the prime numbers in the list below. If you have an even number of prime numbers, the suspect is male. If you have an odd number of prime numbers, the suspect is female.

②      14      9      10      15      8  
③      18      ⑦      ⑬      ⑲      ⑤  
4      ⑰      ⑪      16      6      12

8 prime numbers

8 is even so our suspect is male.

Name	Gender	Height	Right or left-handed
<del>Hannah Brown</del>	female	short	right
<del>Susan Granger</del>	female	tall	right
Henry Jones	male	short	left
<del>Yvona Chowdhary</del>	female	short	right
Simon King	male	tall	right
Tan Yong	male	short	right
<del>Helen Edwards</del>	female	short	left
Toby Ply	male	tall	right
Jack Grande	male	tall	left
<del>Terril Fowler</del>	female	short	left
Patrick Jenson	male	tall	right

# Right or Left

This clue will let us know if our thief is right or left handed.

Look at the sequences, one prime number is missing.

Add up the total from each missing prime number.

If the total is a prime number, they are right handed.

If the total is not a prime number, they are left handed.

## Clue Two

Write the missing prime numbers in the sequences below then add them up. If the total is a prime number, the suspect is right-handed. If the total is not a prime number, the suspect is left-handed.

5	7		13
---	---	--	----

2	3		7
---	---	--	---

11	13	17	
----	----	----	--

13	11		5
----	----	--	---

	3	5	7
--	---	---	---

5		11	13
---	--	----	----





**Clue Two**

Write the missing prime numbers in the sequences below then add them up. If the total is a prime number, the suspect is right-handed. If the total is not a prime number, the suspect is left-handed.

5	7	11	13
---	---	----	----

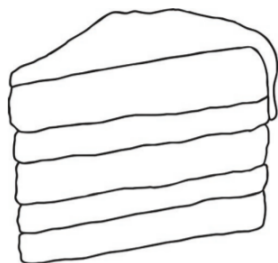
2	3	5	7
---	---	---	---

11	13	17	19
----	----	----	----

13	11	7	5
----	----	---	---

2	3	5	7
---	---	---	---

5	7	11	13
---	---	----	----



$$11 + 5 + 19 + 7 + 2 + 7 = 51$$

The guilty suspect is **left-handed**.

So who can we eliminate from our investigation?

Name	Gender	Height	Right or left-handed
<del>Hannah Brown</del>	<del>female</del>	<del>short</del>	<del>right</del>
<del>Susan Granger</del>	<del>female</del>	<del>tall</del>	<del>right</del>
Henry Jones	male	short	left
<del>Yvona Chowdhary</del>	<del>female</del>	<del>short</del>	<del>right</del>
Simon King	male	tall	right
Tan Yong	male	short	right
<del>Helen Edwards</del>	<del>female</del>	<del>short</del>	<del>left</del>
Toby Ply	male	tall	right
Jack Grande	male	tall	left
<del>Terri Fowler</del>	<del>female</del>	<del>short</del>	<del>left</del>
Patrick Jenson	male	tall	right

**Clue Two**

Write the missing prime numbers in the sequences below then add them up. If the total is a prime number, the suspect is right-handed. If the total is not a prime number, the suspect is left-handed.

5	7	11	13
---	---	----	----

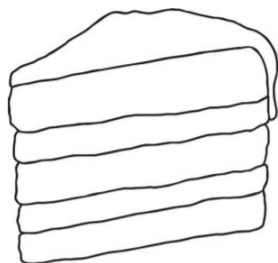
2	3	5	7
---	---	---	---

11	13	17	19
----	----	----	----

13	11	7	5
----	----	---	---

2	3	5	7
---	---	---	---

5	7	11	13
---	---	----	----



$$11 + 5 + 19 + 7 + 2 + 7 = 51$$

The guilty suspect is **left-handed**.

Name	Gender	Height	Right or left-handed
<del>Hannah Brown</del>	<del>female</del>	<del>short</del>	<del>right</del>
<del>Susan Granger</del>	<del>female</del>	<del>tall</del>	<del>right</del>
Henry Jones	male	short	left
<del>Navna Chowdhary</del>	<del>female</del>	<del>short</del>	<del>right</del>
<del>Simon King</del>	<del>male</del>	<del>tall</del>	<del>right</del>
<del>Tan Yong</del>	<del>male</del>	<del>short</del>	<del>right</del>
<del>Helen Edwards</del>	<del>female</del>	<del>short</del>	<del>left</del>
<del>Toby Ply</del>	<del>male</del>	<del>tall</del>	<del>right</del>
Jack Grande	male	tall	left
<del>Femi Howler</del>	<del>female</del>	<del>short</del>	<del>left</del>
<del>Patrick Jenson</del>	<del>male</del>	<del>tall</del>	<del>right</del>

# How's their height?

## Clue Three

Find a way through the maze by colouring statements that are true. You can only go up or down, left or right.

The path will lead to a clue about the height of the guilty suspect.

<b>Start</b>	11 is a prime number	9 is a prime number	3 is a prime number
17 is not a prime number	19 is a prime number	15 is not a prime number	all prime numbers are odd
10 is a prime number	13 is not a prime number	7 is a prime number	15 is a prime number
5 is a prime number	7 is not a prime number	8 is not a prime number	2 is the only even prime number
11 is not a prime number	3 is not a prime number	9 is an odd prime number	3 is a prime number
They are tall.	They are short.	They are tall.	They are short.

Instead of colouring in, I would advise you write the 'true' statements in your book.

Following the path until you find the height of the suspect.

### Clue Three

Find a way through the maze by colouring statements that are true. You can only go up or down, left or right.

The path will lead to a clue about the height of the guilty suspect.

<b>Start</b>	<b>11 is a prime number</b>	9 is a prime number	3 is a prime number
17 is not a prime number	<b>19 is a prime number</b>	<b>15 is not a prime number</b>	all prime numbers are odd
10 is a prime number	13 is not a prime number	<b>7 is a prime number</b>	15 is a prime number
5 is a prime number	7 is not a prime number	<b>8 is not a prime number</b>	<b>2 is the only even prime number</b>
11 is not a prime number	3 is not a prime number	9 is an odd prime number	<b>3 is a prime number</b>
They are tall.	They are short.	They are tall.	<b>They are short.</b>

Name	Gender	Height	Right
<del>Hannah Brown</del>	female	short	right
<del>Susan Granger</del>	female	tall	right
Henry Jones	male	short	left
<del>Navna Chowdhary</del>	female	short	right
<del>Simon King</del>	male	tall	right
<del>Tan Yong</del>	male	short	right
Helen Edwards	female	short	left
<del>Toby Ply</del>	male	tall	right
Jack Grande	male	tall	left
<del>Temi Howler</del>	female	short	left
<del>Patrick Jenson</del>	male	tall	right

As we remove any suspects who are tall, who have we been left with?

Well done You have found the thief with your strong knowledge of prime numbers.

Henry has been sentenced for his horrific crime, can you work out how long he will be behind bars?

**'The number of years is a prime number, the digit total of this prime number, is also a prime number.**

**The number of year is below 50.**

**Of the possible options, it is the larger prime number.'**

How long will Henry spend in prison?

Name	Gender	Height	Right or left-handed
<del>Hannah Brown</del>	<del>female</del>	<del>short</del>	<del>right</del>
<del>Susan Oranger</del>	<del>female</del>	<del>tall</del>	<del>right</del>
Henry Jones	male	short	left
<del>Yavna Chowdhary</del>	<del>female</del>	<del>short</del>	<del>right</del>
<del>Simon King</del>	<del>male</del>	<del>tall</del>	<del>right</del>
<del>Fan Yong</del>	<del>male</del>	<del>short</del>	<del>right</del>
<del>Helen Edwards</del>	<del>female</del>	<del>short</del>	<del>left</del>
<del>Toby Piy</del>	<del>male</del>	<del>tall</del>	<del>right</del>
<del>Jack Grande</del>	<del>male</del>	<del>tall</del>	<del>left</del>
<del>Femi Howler</del>	<del>female</del>	<del>short</del>	<del>left</del>
<del>Patrick Jensen</del>	<del>male</del>	<del>tall</del>	<del>right</del>