Prior Weston

Going for Gold

Mental Maths Challenge
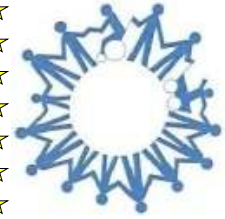
This booklet belongs to

_____

What is 'Going for Gold'?

Going for Gold is a challenge to help all children learn important Maths facts.

Why do we need to know Maths facts?

If you know facts quickly then you can answer questions quickly and correctly. They also help you to solve more difficult questions. If you know lots of facts you can feel more confident in Maths too.

What do I need to do?

You need to decide which level to start on. There are three levels; 1, 2 and 3. **You need to start with the bronze facts**. Practise them and make sure you could give an answer in 1 second! There are Practice Packs for each level. Once you think you know your facts you can ask to be tested.

How to I ask to be tested?

You need to put your name on a card and put it in the box outside Lorna's class. Year 1 and 2 children are tested on Wednesday lunchtimes, Year 3 and 4 on Thursday lunchtimes and Year 5 and 6 on Friday lunchtimes. Simone does also try to test children that missed their test in the afternoon.

What if I don't pass the test?

Don't worry! You will be told what you still need to practice.

What if I pass the test?

You will be given a certificate and badge. Then you can start learning the next set of facts!

Can I practice in school?

Yes, on Friday lunch times
.

What do I do if I've got a question or suggestion about 'Going for Gold'?

Please find Simone and tell her!

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Level 1

Bronze Facts

Counting:

0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Double Numbers to 5

1 + 1 = 2

2 + 2 = 4

3 + 3 = 6

4 + 4 = 8

5 + 5 = 10

Number bonds to 10

1 + 9 = 10

2 + 8 = 10

3 + 7 = 10

4 + 6 = 10

5 + 5 = 10

6 + 4 = 10

7 + 3 = 10

8 + 2 = 10

9 + 1 = 10

0 + 10 = 10

Don't forget that if you know your number bonds you also know these subtraction facts!

10 - 0 = 10

10 – 1 = 9

10 - 2 = 8

10 - 3 = 7

10 - 4 = 6

10 - 5 = 5

10 - 6 = 4

10 - 7 = 3

10 - 8 = 2

10 – 9 = 1

Can you find half of 2, 4, 6, 8 and 10?

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Level 1

Silver Facts

Counting:

0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

Number bonds to 20

$1 + 19 = 20$ $11 + 9 = 20$

$2 + 18 = 20$ $12 + 8 = 20$

$3 + 17 = 20$ $13 + 7 = 20$

$4 + 16 = 20$ $14 + 6 = 20$

$5 + 15 = 20$ $15 + 5 = 20$

$6 + 14 = 20$ $16 + 4 = 20$

$7 + 13 = 20$ $17 + 3 = 20$

$8 + 12 = 20$ $18 + 2 = 20$

$9 + 11 = 20$ $19 + 1 = 20$

$10 + 10 = 20$ $20 + 0 = 20$

Doubles to 10

$1 + 1 = 2$

$2 + 2 = 4$

$3 + 3 = 6$

$4 + 4 = 8$

$5 + 5 = 10$

$6 + 6 = 12$

$7 + 7 = 14$

$8 + 8 = 16$

$9 + 9 = 18$

$10 + 10 = 20$

Can you find half of 12, 14, 16, 18, and 20?

$20 - 19 = 1$

$20 - 18 = 2$

$20 - 17 = 3$

$20 - 16 = 4$

$20 - 15 = 5$

$20 - 14 = 6$

$20 - 13 = 7$

$20 - 12 = 8$

$20 - 11 = 9$

$20 - 10 = 10$

$20 - 9 = 11$

$20 - 8 = 12$

$20 - 7 = 13$

$20 - 6 = 14$

$20 - 5 = 15$

$20 - 4 = 16$

$20 - 3 = 17$

$20 - 2 = 18$

$20 - 1 = 19$

$20 - 0 = 20$

Don't forget that if you know your number bonds you also know these subtraction facts!

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Level 1

Gold Facts

Counting:

0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36

Important Facts!

60 minutes = 1 hour

24 hours = 1 day

Addition and Subtraction Facts

1 + 2 = 3	2 + 3 = 5	3 + 4 = 7	4 + 5 = 9	5 + 6 = 11	6 + 7 = 13	7 + 8 = 15
1 + 4 = 5	2 + 4 = 6	3 + 5 = 8	4 + 7 = 11	5 + 7 = 12	6 + 8 = 14	7 + 9 = 16
1 + 5 = 6	2 + 5 = 7	3+ 6 = 9	4 + 8 = 12	5 + 8 = 13	6 + 9 = 15	8 + 9 = 17
1 + 7 = 8	2 + 6 = 8	3 + 8 = 11	4 + 9 = 13	5 + 9 = 14		
1 + 8 = 9	2 + 7 = 9	3 + 9 = 12				
1 + 9 = 10	2 + 9 = 11					

You also need to know the related subtraction number sentences.

For example;

1 + 2 = 3 so 3 -2 = 1 and 3 – 1 = 2

6 + 9 = 15 so 15 – 9 = 6 and 15 – 6 = 9

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Level 1

Platinum Challenge

For the platinum challenge you will be given a magic square and you will have 2 minutes to work out the magic number and fill in the missing numbers. In a magic square all the rows, columns and diagonal add up to the same number. Each number can be used no more than twice in one magic square. Here are some for you to use to practice:

8	1	6
3	5	7
4	9	2

2	5	
7		1
3		6

	11	7
9		7
	5	10

The magic number is:

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Level 2

Bronze Facts

Counting:

0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40 ,44, 48, ….

0, 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96, ….

0, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, ….

0, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000,1100, …

Times Tables

Addition and Subtraction Facts

10 + 90 = 100	100-10 = 90	
20 + 80 = 100	100-20 = 80	
30 + 70 = 100	100-30 = 70	
40 + 60 = 100	100-40 = 60	
50 + 50 = 100	100 – 50= 50	
100 – 80 = 20	100-60 = 40	
100 – 90 = 10	100- 70 = 30	

0 x 2 = 0	0 x 10 = 0	0 x 5 = 0	0 x 3 = 0
1 x 2 = 2	1 x 10 = 10	1 x 5 = 5	1 x 3 = 3
2 x 2 = 4	2 x 10 = 20	2 x 5 = 10	2 x 3 = 6
3 x 2 = 6	3 x 10 = 30	3 x 5 = 15	3 x 3 = 9
4 x 2 = 8	4 x 10 = 40	4 x 5 = 20	4 x 3 = 12
5 x 2 = 10	5 x 10 = 50	5 x 5 = 25	5 x 3 = 15
6 x 2 = 12	6 x 10 = 60	6 x 5 = 30	6 x 3 = 18
7 x 2 = 14	7 x 10 = 70	7 x 5 = 35	7 x 3 = 21
8 x 2 = 16	8 x 10 = 80	8 x 5 = 40	8 x 3 = 24
9 x 2 = 18	9 x 10 = 90	9 x 5 = 45	9 x 3 = 27
10 x 2 = 20	10 x 10 = 100	10 x 5 = 50	10 x 3 = 30
11 x 2 = 22	11 x 10 = 110	11 x 5 = 55	11 x 3 = 33
12 x 2 = 24	12 x 10 = 120	12 x 5 = 60	12 x 3 = 36

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Level 2

Silver Facts

Counting:

0, 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, …

0, 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, ….

0, 9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99, 108, …

Multiplication Fact Families

1 x 2 = 2	**2 x 1 = 2**	**2 ÷ 1 = 2**	**2 ÷ 2 = 1**
2 x 2 = 4	**4 ÷ 2 = 2**		
3 x 2 = 6	**2 x 3 = 6**	**6 ÷ 2 = 3**	**6 ÷ 3 = 2**
4 x 2 = 8	**2 x 4 = 8**	**8 ÷ 4 = 2**	**8 ÷ 2 = 4**
5 x 2 = 10	**2 x 5 = 10**	**10 ÷ 5 = 2**	**10 ÷ 2 = 5**
6 x 2 = 12	**2 x 6 = 12**	**12 ÷ 6 = 2**	**12 ÷ 2 = 6**
7 x 2 = 14	**2 x 7 = 14**	**14 ÷ 7 = 2**	**14 ÷ 2 = 7**
8 x 2 = 16	**2 x 8 = 16**	**16 ÷ 8 = 2**	**16 ÷ 2 = 8**
9 x 2 = 18	**2 x 9 = 18**	**18 ÷ 2 = 9**	**18 ÷ 9 = 2**
10 x 2 = 20	**2 x 10 = 20**	**20 ÷ 2 = 10**	**20 ÷ 10 = 2**

0 x 4 = 0	0 x 8 = 0
1 x 4 = 4	1 x 8 = 8
2 x 4 = 8	2 x 8 = 16
3 x 4 = 12	3 x 8 = 24
4 x 4 = 16	4 x 8 = 32
5 x 4 = 20	5 x 8 = 40
6 x 4 = 24	6 x 8 = 48
7 x 4 = 28	7 x 8 = 56
8 x 4 = 32	8 x 8 = 64
9 x 4 = 36	9 x 8 = 72
10 x 4 = 40	10 x 8 = 80
11 x 4 = 44	11 x 8 = 88
12 x 4 = 48	12 x 8 = 96

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Level 2

Gold Facts

Counting:

0, 25, 50, 100, 125, 150, 175, 200, 225, 250, 275, 300, ……

0, 1000, 2000, 3000, 4000, 5000, 6000, 7000, ……

5, 4, 3, 2, 1, 0 -1, -2, -3, -4, -5, -6, -7, -8, -9, -10, …..

0 x 6 = 0	0 x 7 = 0	0 x 9 = 0	0 x 11 = 0	0 x 12 = 0
1 x 6 = 6	1 x 7 = 7	1 x 9 = 9	1 x 11 = 11	1 x 12 = 12
2 x 6 = 12	2 x 7 = 14	2 x 9 = 18	2 x 11 = 22	2 x 12 = 24
3 x 6 = 18	3 x 7 = 21	3 x 9 = 27	3 x 11= 33	3 x 12 = 36
4 x 6 = 24	4 x 7 = 28	4 x 9 = 36	4 x 11= 44	4 x 12 = 48
5 x 6 = 30	5 x 7 = 35	5 x 9 = 45	5 x 11= 55	5 x 12 = 60
6 x 6 = 36	6 x 7 = 42	6 x 9 = 54	6 x 11= 66	6 x 12 = 72
7 x 6 = 42	7 x 7 = 49	7 x 9 = 63	7 x 11= 77	7 x 12 = 84
8 x 6 = 48	8 x 7 = 56	8 x 9 = 72	8 x 11= 88	8 x 12 = 96
9 x 6 = 54	9 x 7 = 63	9 x 9 = 81	9 x 11= 99	9 x 12 = 108
10 x 6 = 60	10 x 7 = 70	10 x 9 = 90	10 x 11 = 110	10 x 12 = 120
11 x 6 = 66	11 x 7 = 77	11 x 9 = 99	11 x 11 = 121	11 x 12 = 132
12 x 6 = 72	12 x 7 = 84	12 x 9 = 108	12 x 11 = 132	12 x 12 = 144

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Level 2

Platinum Challenge

By the end of Level 2 you should know all of your times tables for the platinum level you need to use these to multiply larger numbers. **For the platinum challenge you will be given 2 minutes to complete a grid like the ones below.** The numbers along the top will always be multiples of 10 and the numbers in the rows will always be numbers between 1-9. Here are some for you to practice:

x	20	70	30
4	80	280	120
3			
6			
7			
9			

x	30	80	60
2			
6			
5			
8			
4			

x	40	90	100
5			
8			
9			
7			
4			

x			

x			

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Level 3

Bronze Facts

Counting:

0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, …

0, ½, 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, ….

All times tables to 12 and all related division facts.
These are just some of them:

DIVISIONS

1 ÷ 1 = 1	2 ÷ 2 = 1	3 ÷ 3 = 1	4 ÷ 4 = 1	5 ÷ 5 = 1	6 ÷ 6 = 1
2 ÷ 1 = 2	4 ÷ 2 = 2	6 ÷ 3 = 2	8 ÷ 4 = 2	10 ÷ 5 = 2	12 ÷ 6 = 2
3 ÷ 1 = 3	6 ÷ 2 = 3	9 ÷ 3 = 3	12 ÷ 4 = 3	15 ÷ 5 = 3	18 ÷ 6 = 3
4 ÷ 1 = 4	8 ÷ 2 = 4	12 ÷ 3 = 4	16 ÷ 4 = 4	20 ÷ 5 = 4	24 ÷ 6 = 4
5 ÷ 1 = 5	10 ÷ 2 = 5	15 ÷ 3 = 5	20 ÷ 4 = 5	25 ÷ 5 = 5	30 ÷ 6 = 5
6 ÷ 1 = 6	12 ÷ 2 = 6	18 ÷ 3 = 6	24 ÷ 4 = 6	30 ÷ 5 = 6	36 ÷ 6 = 6
7 ÷ 1 = 7	14 ÷ 2 = 7	21 ÷ 3 = 7	28 ÷ 4 = 7	35 ÷ 5 = 7	42 ÷ 6 = 7
8 ÷ 1 = 8	16 ÷ 2 = 8	24 ÷ 3 = 8	32 ÷ 4 = 8	40 ÷ 5 = 8	48 ÷ 6 = 8
9 ÷ 1 = 9	18 ÷ 2 = 9	27 ÷ 3 = 9	36 ÷ 4 = 9	45 ÷ 5 = 9	54 ÷ 6 = 9
10 ÷ 1 = 10	20 ÷ 2 = 10	30 ÷ 3 = 10	40 ÷ 4 = 10	50 ÷ 5 = 10	60 ÷ 6 = 10
11 ÷ 1 = 11	22 ÷ 2 = 11	33 ÷ 3 = 11	44 ÷ 4 = 11	55 ÷ 5 = 11	66 ÷ 6 = 11
12 ÷ 1 = 12	24 ÷ 2 = 12	36 ÷ 3 = 12	48 ÷ 4 = 12	60 ÷ 5 = 12	72 ÷ 6 = 12

7 ÷ 7 = 1	8 ÷ 8 = 1	9 ÷ 9 = 1	10 ÷ 10 = 1	11 ÷ 11 = 1	12 ÷ 12 = 1
14 ÷ 7 = 2	16 ÷ 8 = 2	18 ÷ 9 = 2	20 ÷ 10 = 2	22 ÷ 11 = 2	24 ÷ 12 = 2
21 ÷ 7 = 3	24 ÷ 8 = 3	27 ÷ 9 = 3	30 ÷ 10 = 3	33 ÷ 11 = 3	36 ÷ 12 = 3
28 ÷ 7 = 4	32 ÷ 8 = 4	36 ÷ 9 = 4	40 ÷ 10 = 4	44 ÷ 11 = 4	48 ÷ 12 = 4
35 ÷ 7 = 5	40 ÷ 8 = 5	45 ÷ 9 = 5	50 ÷ 10 = 5	55 ÷ 11 = 5	60 ÷ 12 = 5
42 ÷ 7 = 6	48 ÷ 8 = 6	54 ÷ 9 = 6	60 ÷ 10 = 6	66 ÷ 11 = 6	72 ÷ 12 = 6
49 ÷ 7 = 7	56 ÷ 8 = 7	63 ÷ 9 = 7	70 ÷ 10 = 7	77 ÷ 11 = 7	84 ÷ 12 = 7
56 ÷ 7 = 8	64 ÷ 8 = 8	72 ÷ 9 = 8	80 ÷ 10 = 8	88 ÷ 11 = 8	96 ÷ 12 = 8
63 ÷ 7 = 9	72 ÷ 8 = 9	81 ÷ 9 = 9	90 ÷ 10 = 9	99 ÷ 11 = 9	108 ÷ 12 = 9
70 ÷ 7 = 10	80 ÷ 8 = 10	90 ÷ 9 = 10	100 ÷ 10 = 10	110 ÷ 11 = 10	120 ÷ 12 = 10
77 ÷ 7 = 11	88 ÷ 8 = 11	99 ÷ 9 = 11	110 ÷ 10 = 11	121 ÷ 11 = 11	132 ÷ 12 = 11
84 ÷ 7 = 12	96 ÷ 8 = 12	108 ÷ 9 = 12	120 ÷ 10 = 12	132 ÷ 11 = 12	144 ÷ 12 = 12

Level 3

Silver Facts

To know..

Prime Numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, …

Square Numbers:, 1, 4, 9, 16, 25, 36, 49, 64, 81, 100

You need to know <u>factors</u> of all numbers to 144.

Factors are the numbers you multiply together to get another number: for example 2 × 6 = 12, but

also 3 × 4 = 12, and 1 × 12 = 12. **So 1, 2, 3, 4, 6 and 12 are factors of 12.**

<u>Time</u> .

1 millennium = 1000 years

1 century = 100 years

1 year = 12 months or 52 weeks or 365 days

1 leap year = 366 days

1 week = 7 days

1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds

<u>Measures</u>

1 kilometre = 1000 metres

1 metre = 100 centimetres or 1000 millimetres

1 centimetre = 10 millimetres

1 kilogram = 1000 grams

1 litre = 1000 millilitres

1 tonne = 1000 kilograms

1 litre = 100 centilitres

1 centilitre = 10 millilitres

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Level 3

Gold Facts

To know…

Cubed numbers: 1, 8, 27, 64, 125, 216, ….

Hundredths: 1.03, 1.02, 1.01, 1.00, 0.99, 0.98, 0.97, …..

<u>**Conversions between metric and imperial units**</u>
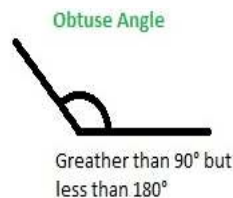
1 litre = 2 pints (more accurately 1 ¾ pints)

4.5 litres = 1 gallon or 8 pints

1 kilogram = 2 lb (more accurately 2.2lb)

28 grams = 1 oz

1.6 kilometres = 1 mile

<u>**Angles**</u>

Angles in a <u>straight line</u> = 180°

Angles in a <u>circle</u> = 360°

Total sum of angles in a <u>triangle</u> = 180°

Total sum of angles in a <u>quadrilateral</u> = 360°

Acute Angle — Less than 90°

Right Angle — Exactly 90°

Obtuse Angle — Greater than 90° but less than 180°

Fractions	Decimals	%
½	0.5	50%
¼	0.25	25%
¾	0.75	75%
1/3	0.333…	33%
2/3	0.666…	67%
1/10	0.1	10%
2/10	0.2	20%
1/5	0.2	20%
2/5	0.4	40%

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Level 3

Platinum Challenge

The platinum level challenge is to be able to complete a grid like the one below in <u>1 minute</u>. The grid that you are given could have any 2-digit number or even a decimal to multiply. Here are some for you to use to practice:

An example:

X	23
1	23
2	46
5	115
10	230
20	460
50	2300
100	4600

X	46
1	
2	
5	
10	
20	
50	
100	

X	57
1	
2	
5	
10	
20	
50	
100	

X	2.3
1	
2	
5	
10	
20	
50	
100	

My goals and achievements

		When I aim to achieve	When I achieved it!
Level 1	Bronze		
	Silver		
	Gold		
	Platinum		
Level 2	Bronze		
	Silver		
	Gold		
	Platinum		
Level 3	Bronze		
	Silver		
	Gold		
	Platinum		