12a. Blue Metro

I can count in 10s from any number forward or backwards. **eg 54, 64, 74, 84, 94, 104** **eg 77, 67, 57, 47, 37, 27, 17, 7**	I know by heart all number bonds of multiples of 10 up to 100. **0 + 100 = 100** **10 + 90 = 100** **20 + 80 = 100** **30 + 70 = 100** **40 + 60 = 100** **50 + 50 = 100** **60 + 40 = 100** **70 + 30 = 100** **80 + 20 = 100** **90 + 10 = 100** **100 + 0 = 100**
I can recognize any multiple of 2, 5 or 10. **Multiples of 2: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100….** **Multiples of 5: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100…..** **Multiples of 10: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100…..**	I can find 1, 10 or 100 more or less from any 3-digit number. e.g. 1more than 234 is 235 1 less than 151 is 150 10 more than 436 is 446 10 less than 612 is 602 100 more than 520 is 620 100 less than 780 is 680

13. Prague

I can double any number to double 20.

1 ☛ 2	11 ☛ 22
2 ☛ 4	12 ☛ 24
3 ☛ 6	13 ☛ 26
4 ☛ 8	14 ☛ 28
5 ☛ 10	15 ☛ 30
6 ☛ 12	16 ☛ 32
7 ☛ 14	17 ☛ 34
8 ☛ 16	18 ☛ 36
9 ☛ 18	19 ☛ 38
10 ☛ 20	20 ☛ 40

I can count forwards and backwards in multiples of 6.

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

I know by heart all multiplication facts for 6 up to 6 x 12

1 x 6 = 6	6 x 1 = 6
2 x 6 = 12	6 x 2 = 12
3 x 6 = 18	6 x 3 = 18
4 x 6 = 24	6 x 4 = 24
5 x 6 = 30	6 x 5 = 30
6 x 6 = 36	6 x 6 = 36
7 x 6 = 42	6 x 7 = 42
8 x 6 = 48	6 x 8 = 48
9 x 6 = 54	6 x 9 = 54
10 x 6 = 60	6 x 10 = 60
11 x 6 = 66	6 x 11 = 66
12 x 6 = 72	6 x 12 = 72

I know by heart all division facts for 6 up to 72.

72 ÷ 6 = 12
66 ÷ 6 = 11
60 ÷ 6 = 10
54 ÷ 6 = 9
48 ÷ 6 = 8
42 ÷ 6 = 7
36 ÷ 6 = 6
30 ÷ 6 = 5
24 ÷ 6 = 4
18 ÷ 6 = 3
12 ÷ 6 = 2
6 ÷ 6 = 1
0 ÷ 6 = 0

14. Warsaw

I can count forwards and backwards in multiples of 9.

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

All the digits in the product (answer) for the 9 times table will add up to 9. For example:
9 x 2 = 18. 1+8=9;
5 x 9 = 45. 4+5=9.

I know by heart all multiplication facts for 9 up to 9 x 12.

1 x 9 = 9
2 x 9 = 18
3 x 9 = 27
4 x 9 = 36
5 x 9 = 45
6 x 9 = 54
7 x 9 = 63
8 x 9 = 72
9 x 9 = 81
10 x 9 = 90
11 x 9 = 99
12 x 9 = 108

When the sum of the number's digits is divisible by 9. For example 81 is 8+1=9 so is in the 9 times table.

I know by heart all division facts for 9 up to 108.

108 ÷ 9 = 12
99 ÷ 9 = 11
90 ÷ 9 = 10
81 ÷ 9 = 9
72 ÷ 9 = 8
63 ÷ 9 = 7
54 ÷ 9 = 6
45 ÷ 9 = 5
36 ÷ 9 = 4
27 ÷ 9 = 3
18 ÷ 9 = 2
9 ÷ 9 = 1
0 ÷ 9 = 0

I can count forwards and backwards in multiples of 7.

0	84
7	77
14	70
21	63
28	56
35	59
42	42
49	35
56	28
63	21
70	14
77	7
84	0

I know by heart all multiplication facts for 7 up to 7 x 12.

1 x 7 = 7
2 x 7 = 14
3 x 7 = 21
4 x 7 = 28
5 x 7 = 35
6 x 7 = 42
7 x 7 = 49
8 x 7 = 56
9 x 7 = 63
10 x 7 = 70
11 x 7 = 77
12 x 7 = 84

I know by heart all division facts for 7 up to 84.

84 ÷ 7 = 12
77 ÷ 7 = 11
70 ÷ 7 = 10
63 ÷ 7 = 9
56 ÷ 7 = 8
49 ÷ 7 = 7
42 ÷ 7 = 6
35 ÷ 7 = 5
27 ÷ 7 = 4
21 ÷ 7 = 3
14 ÷ 7 = 2
7 ÷ 7 = 1
0 ÷ 7 = 0

15. Amsterdam

I can count forwards and backwards in multiples of 11.

0	132
11	121
22	110
33	99
44	88
55	77
66	66
77	55
88	44
99	33
110	22
121	11
132	0

I know by heart all multiplication facts for 11 up to 11x 12.

0 x 11 = 0	11 x 0 = 0
1 x11 = 11	11 x1 = 11
2 x 11= 22	11 x 2= 22
3 x 11 = 33	11 x 3 = 33
4 x 11 = 44	11 x 4 = 44
5 x 11 = 55	11 x 5 = 55
6 x 11 = 66	11 x 6 = 66
7 x 11 = 77	11 x 7 = 77
8 x 11 = 88	11 x 8 = 88
9 x 11 = 99	11 x 9 = 99
10 x 11 = 110	11 x 10 = 110
11 x 11 = 121	11 x 11 = 121
12 x 11 = 132	11 x 12 = 132

I know by heart all division facts for 11 up to 132.

132 ÷ 11 = 12
121 ÷ 11 = 11
110 ÷ 11 = 10
99 ÷ 11 = 9
88 ÷11 = 8
77 ÷ 11 = 7
66 ÷ 11 = 6
55 ÷ 11 = 5
44 ÷ 11 = 4
33 ÷ 11 = 3
22 ÷ 11 = 2
11 ÷ 11 = 1
0 ÷ 11 = 0

I can count forwards and backwards in multiples of 12 to 12 x 12.

0	144
12	132
24	120
36	108
48	96
60	84
72	72
84	60
96	48
108	36
120	24
132	12
144	0

I know by heart all division facts for 12 to 144.

144 ÷ 12 = 12
132 ÷ 12 = 11
120 ÷ 12 = 10
108 ÷ 12 = 9
96 ÷ 12 = 8
84 ÷ 12 = 7
72 ÷ 12 = 6
60 ÷ 12 = 5
48 ÷ 12 = 4
36 ÷ 12 = 3
24 ÷ 12 = 2
12 ÷ 12 = 1

16. Copenhagen

I can recall all multiplication and division facts for all multiplication tables up to 12 x 12 e.g.

0 x 12 = 0
1 x12 = 12
2 x 12 = 24
3 x 12 = 36
4 x 12 = 48
5 x 12 = 60
6 x 12 = 72
7 x 12 = 84
8 x 12 = 96
9 x 12 = 108
10 x 12 = 120
11 x 12 = 132
12 x 12 = 144

144 ÷ 12 = 12
132 ÷ 12 = 11
120 ÷ 12 = 10
108 ÷ 12 = 9
96 ÷12 = 8
84 ÷ 12 = 7
72 ÷ 12 = 6
60 ÷ 12 = 5
48 ÷ 12 = 4
36 ÷ 12 = 3
24 ÷ 12 = 2
12 ÷ 12 = 1
0 ÷ 12= 0

I can multiply 3 single digit numbers. *The first two should be done mentally but multiplying by the third might need jottings.*

3 x 5 x 7 = 105
Don't forget that multiplication can be done in any order, so 5 x 7 = 35
35 x 3 =
[3 x 30 = 90, 3 x 5 = 15]

I can multiply and divide whole numbers and those involving decimals by 10 or 100 and explain the effect.

Use a place value grid.
Multiply by:
10 ☚ the whole number moves 1 column to the left, for example 10 x 1.63 = 16.3
100 ☚ the whole number moves 2 columns to the left, for example 100 x 1.63 = 163

I can identify all factor pairs of any number up to 100.

A factor is a number that will go into another number without leaving a remainder. 2 is a factor of 10 because it goes in exactly 5 times.

3 is a factor of 60 because it goes into 60 without leaving a remainder.

I can round any number to the nearest 10, 100 or 1,000.

The rule is the same no matter which digits we are talking about.
*If the digit after the one you are rounding is 0, 1, 2, 3 or 4 then the digit you are rounding stays the same. (E.g. 5**6**39 rounded to the nearest 100 is 5600)
*If the digit after the one you are rounding is 5, 6, 7, 8 or 9 then the digit you are rounding goes up by 1. (E.g. **5**639 rounded to the nearest 1000 is 6000)

17. Oslo

I can count forwards and backwards in multiples of 1,000.

0
1,000 95,000
2,000 96,000
3,000 97,000
4,000 98,000
5,000 99,000
6,000 100,000
7,000
8,000
9,000
10,000

I can count forwards and backwards in multiples of 25.

Look for the pattern which is repeated and regular.

0
25 125 550
50 150 575
75 175 600
100 200 625

I can count forwards and backwards in hundredths (fractions and decimals).

0.01	0.1	$\frac{1}{10}$	$\frac{10}{10}$
0.02	0.09	$\frac{2}{10}$	$\frac{9}{10}$
0.03	0.08	$\frac{3}{10}$	$\frac{8}{10}$
0.04	0.07	$\frac{4}{10}$	$\frac{7}{10}$
0.05	0.06	$\frac{5}{10}$	$\frac{6}{10}$
0.06	0.05	$\frac{6}{10}$	$\frac{5}{10}$
0.07	0.04	$\frac{7}{10}$	$\frac{4}{10}$
0.08	0.03	$\frac{8}{10}$	$\frac{3}{10}$
0.09	0.02	$\frac{9}{10}$	$\frac{2}{10}$
0.1	0.01	$\frac{10}{10}$	$\frac{1}{10}$

I can count forwards and backwards with positive and negative numbers through zero.

The number system remains constant whether on the positive or negative side of 0. Look at the pattern. For example

-5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8

6 5 4 3 2 1 0 -1 -2 -3 -4 -5 -6 -7

18. Stockholm

I can double any 2-digit number

11 ☛ 22
12 ☛ 24
13 ☛ 26
14 ☛ 28
15 ☛ 30
16 ☛ 32
17 ☛ 34
18 ☛ 36
19 ☛ 38
20 ☛ 40

When doubling just remember place value: the value of 7 in 72 is 70 (140) and the value of the 2 is 2 (4) so double 72 is 144.

I can half any 2-digit number.

12 ☛ 6
14 ☛ 7
16 ☛ 6
18 ☛ 9
20 ☛ 10
22 ☛ 11
24 ☛ 12
26 ☛ 13
28 ☛ 14
30 ☛ 15

Be thoughtful when halving odd numbers – remember place value. To half 36: half of 30 is 15 and half 6 is 3 so half 36 is 18. Half of 15 is 7.5. (Half 14 is 7, half of 1 is 0.5)

I can double any number with up to 1 decimal place.

4.4	8.8	6.4	12.8
8.8	17.6	10.4	20.8
12.4	24.8	14.6	29.2
16.2	32.4	4.8	9.6

Remember place value and split the number up if it helps. For example 8.8: double 8 is 16; double 0.8 is 1.6 so double 8.8 is 17.6 when you add both parts together.

I can half any number with up to 1 decimal place.

4.4	2.2	6.4	3.2
8.8	4.4	10.4	5.2
12.4	6.2	14.6	7.3
16.2	8.1	4.8	2.4

Remember place value and split the number up if it helps. For example 8.8: half 8 is 4; half 0.8 is 0.4 so half 8.8 is 4.4 when you add both parts together.

I can count forward and backwards in steps of powers of 10 for any given number up to 1,000,000.

Any power of 10 means 10 or 10^2 (10x10=100), 10^3 (10x10x10) = 1,000) etc. For example counting forwards and backwards in 1,000,000 (10^6)
1,000,000,
2,000,000
3,000,000
4,000,000 and so on.

I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 and explain the effect.

Use place value grid!!!
Dividing by 10 – whole number moves one column to the right (smaller number); by 100 – the whole number 2 columns to right; by 1,000 move by 3 columns.
Multiplying by 10 – whole number moves 1 column to the left (bigger); by 100 two columns to the left; 1,000 3 columns to the left.
These rules never change no matter how big or small the number is.

19. Helsinki

I know by heart all the squares of numbers between 1 and 12 and use the notation squared (^{2}).

1^2 ☛ 1
2^2 ☛ 4
3^2 ☛ 9
4^2 ☛ 16
5^2 ☛ 25
6^2 ☛ 36
7^2 ☛ 49
8^2 ☛ 64
9^2 ☛ 81
10^2 ☛ 100
11^2 ☛ 121
12^2 ☛ 144

I know all squares of numbers of multiples of 10 to 100.

10^2 ☛ 100
20^2 ☛ 400
30^2 ☛ 900
40^2 ☛ 1,600
50^2 ☛ 2,500
60^2 ☛ 3,600
70^2 ☛ 4,900
80^2 ☛ 6,400
90^2 ☛ 8,100
100^2 ☛ 10,000

Remember place value. For example, 20x 20 broken down would be:
2 x 2 = 4
4 x 10 = 40
40 x 10 = 400

I can recognize and use cube numbers and use the notation for cubed (^{3}).

$1^3 = 1 \times 1 \times 1 = 1$
$2^3 = 2 \times 2 \times 2 = 8$
$3^3 = 3 \times 3 \times 3 = 27$
$4^3 = 4 \times 4 \times 4 = 64$
$5^3 = 5 \times 5 \times 5 = 125$
$6^3 = 6 \times 6 \times 6 = 216$
$7^3 = 7 \times 7 \times 7 = 343$
$8^3 = 8 \times 8 \times 8 = 512$
$9^3 = 9 \times 9 \times 9 = 729$
$10^3 = 10 \times 10 \times 10 = 1{,}000$

The first calculation should be done in your head, then jottings for the second multiplication
.

I can read Roman Numerals up to 1,000.

0 =
1 = I
2 = II
3 = III
4 = IV
5 = V
6 = VI
7 = VII
8 = VIII
9 = IX
10 = X

20 = XX
30 = XXX
40 = XL
50 = L
60 = LX
70 = LXX
80 = LXXX
90 = XC
100 = C

200 = CC
300 = CCC
400 = CD
500 = D
600 = DC
700 = DCC
800 = DCCC
900 = CM
1000 = M

I know the definition of a prime number and can recognize all prime numbers to 19.

A prime number has only two factors itself and 1. For example 3 is a prime because 3x1 or 1x3 are the only whole numbers that equal 3; 1 is NOT a prime number because it only has 1 factor; 2 is the only EVEN prime number.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10
11, 12, 13, 14, 15, 16, 17, 18, 19, 20

I can classify any number up to 100 as prime or composite.

Prime number is described in the previous target.

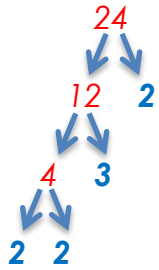
A composite number is any number that has more than two factors. For example 4 has 3 factors: 1x4 and 2x2 therefore 4 is composite.

20. Athens

I can find prime factors of any number up to 100.

A number under 100 is prime if it is not in the 2, 3, 5 or 7 times table.

To find the prime factors of 24, first find a prime number that 24 is divisible by.



The Prime factors of 24 can be written as 2x2x2x3

I can identify the highest common factor (HCF) of two numbers.

To find the HCF you need to find out which the highest whole number in both numbers. For example:

HCF for 15 and 40 would be 5: 5 x 3 = 15; 5 x 8 = 40

HCF for 9 and 4 would be 36: 9 x 4 = 36 and 4 x 9 = 36.

I can round any number to the nearest 10,000.

Rule: Between 1 and 4,999 rounds down, e.g. 12,568 rounded would round down to 10,000. 17,024 rounded would round up to 20,000.

I can convert a number with up to three decimal places (3dp) into a fraction.

Remember place value with decimal numbers (1/10th = 0.1; 1/100 = 0.01; 1/1,000 = 0.001).

So 0.123 would be 123/1,000;
0.45 would be 45/100
0.6 would be 6/10

I can multiply any multiple of 10 by a single digit number.

A multiple of 10 is any number that ends in a 0.

E.g. 6 x 30. To do this first do 6 x 3 = 18 then multiply the answer by 10 so 18 x 10 = 180.

20a. Red Metro

Using a rule, I can recognise any multiple of 3

To recognize a multiple of 3, add up all the digits and the total should be in the 3 times table.

45 -> 4+5 = 9 so 45 is a multiple of 3

44 -> 4+4 = 8 so 44 is **not** a multiple of 3

Using a rule, I can recognise any multiple of 4

To recognize a multiple of 4, you need to divide by 2 and then by 2 again. You are dividing by 4's prime factors! If the answer is a whole number, it is a multiple of 4.

88 ÷ 2 = 44
44 ÷ 2 = 22

The prime factors of 4 are 2x2

Using a rule, I can recognise any multiple of 9

To recognize a multiple of 9, add up all the digits and the total should be 9. You have to continue adding the digits until you are left with a single digit answer.

99 -> 9+9 = 18 -> 1+8 = 9

So 99 is a multiple of 9

Using a rule, I can recognise any multiple of 8

To recognize a multiple of 8, you need to divide by 2, by 2 again and then by 2 again. You are dividing by 8's prime factors! If the answer is a whole number, it is a multiple of 8.

88 ÷ 2 = 44
44 ÷ 2 = 22
22 ÷ 2 = 11

The prime factors of 8 are 2x2x2

Using a rule, I can recognise any multiple of 6

To recognize a multiple of 6, you need to divide by 2 and then by 3 again. You are dividing by 6's prime factors! If the answer is a whole number, it is a multiple of 6.

72 ÷ 2 = 36
36 ÷ 3 = 12

The prime factors of 6 are 2x3