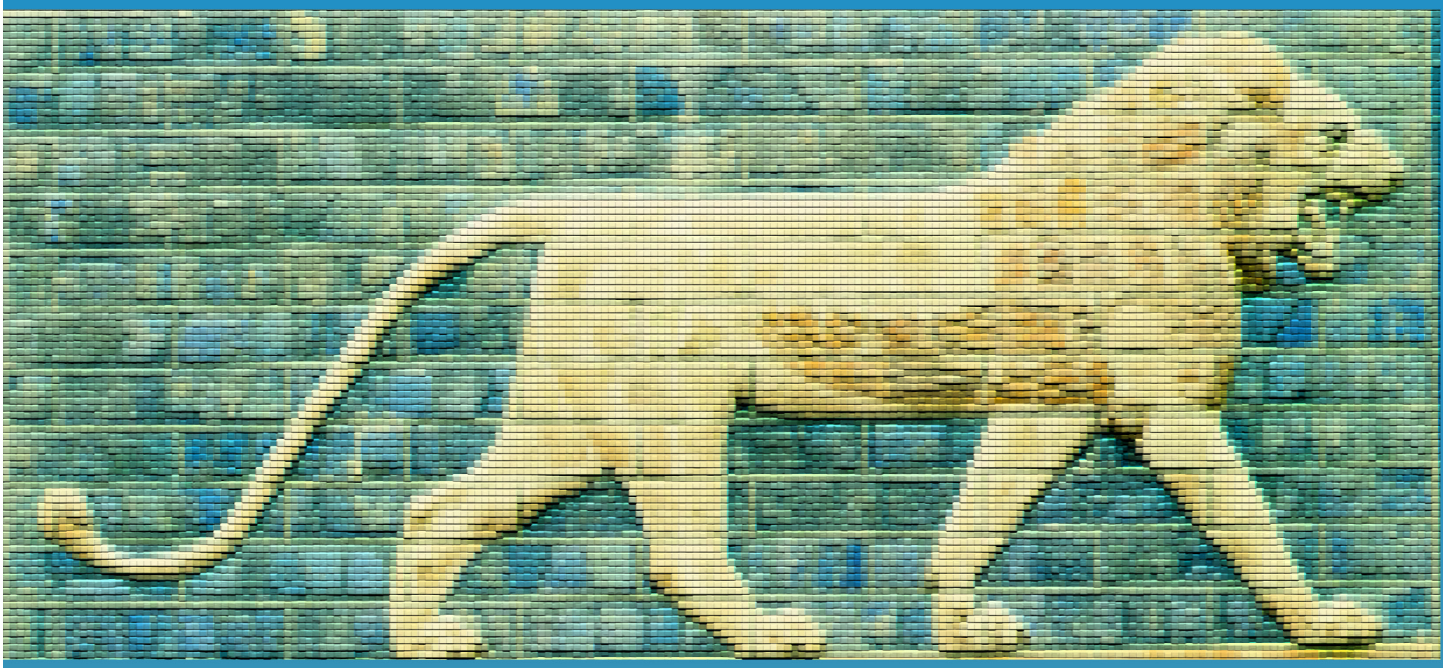

BABYLONIAN NUMERALS

OVERVIEW

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Teacher Notes

	1	2	3	4	5	6	7	8	9	10
1-10										
11-20										
21-30										
31-40										
41-50										
51-60										
61-70										

x 3600	x 60	Units	Value
			1
			1 + 1 = 2
			10
			10 + 1 = 11
			10 + 10 = 20
			60
			60 + 1 = 61
			60 + 1 + 1 = 62
			60 + 10 = 70
			60 + 10 + 1 = 71
			2 x 60 = 120
			2 x 60 + 1 = 121
			10 x 60 = 600
			10 x 60 + 1 = 601
			10 x 60 + 10 = 660
			3600 (60 x 60)
			2 x 3600 = 7200

Like the Egyptians, the Babylonians used two ones to represent two, three ones for three, and so on, up to nine. However, they tended to arrange the symbols into neat piles. Once they got to ten, there were too many symbols, so they turned the stylus on its side to make a different symbol. Eleven was ten and one, twelve was ten and one and one, twenty was ten and ten, just like the Egyptians. This is a unary system. However, something strange happened at sixty (see below). The symbol for sixty seems to be exactly the same as that for one. Sixty one is sixty and one, which therefore looks like one and one, and so on. Surely this is very confusing! However, the Babylonians were working their way towards a positional system.

A positional number system is one where the numbers are arranged in columns. We use a positional system, and our columns represent powers of ten. So the right hand column is units, the next is tens, the next is hundreds, and so on. If you want to add large numbers (and you've lost your calculator!) you line the numbers up so their units are in the same column. Then you can add each column, carrying forward to the next, if necessary. The Babylonians had the same system, but they used powers of sixty rather than ten. So the left-hand column were units, the second, multiples of 60, the third, multiplies of 3,600, and so on.
(Joe Edkins, 2006)

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Answer Key

Set 1

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

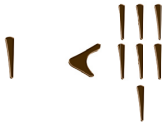
22

30

40

50

60


77

63

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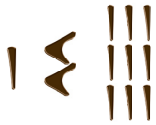
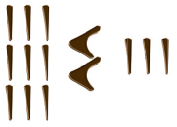
Set 2

	(1 x 60) + (2 x 10) + 7	87
	(2 x 60) + (5 x 10) + 5	175
	(4 x 60) + (0 x 10) + 3	243
	(4 x 60) + (4 x 10) + 3	283
	(2 x 60) + (2 x 10) + 9	149
	(2 x 60) + (2 x 10) + 2	142
	(1 x 60) + (2 x 10) + 9	89
	(3 x 60) + (4 x 10) + 3	223
	(6 x 60) + (5 x 10) + 5	415
	(9 x 60) + (2 x 10) + 3	563

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Set 3

(13 x 60) + (2 x 10) + 6

806

(25 x 60) + (0 x 10) + 7

1,507

(55 x 60) + (2 x 10) + 6

3,326

(43 x 60) + (2 x 10) + 9

2,609

(55 x 60) + (1 x 10) + 3

3,313

(11 x 60) + (1 x 10) + 3

673

(46 x 60) + (2 x 10) + 5

2,785

(31 x 60) + (2 x 10) + 2

1,882

(17 x 60) + (4 x 10) + 1

1,061

(14 x 60) + (1 x 10) + 3

853

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Set 4

	(2 x 3600) + (12 x 60) + (4 x 10) + 5	7,965
	(2 x 3600) + (15 x 60) + (4 x 10) + 6	8,146
	(1 x 3600) + (44 x 60) + (1 x 10) + 3	6,253
	(2 x 3600) + (40 x 60) + (2 x 10) + 7	9,627
	(9 x 3600) + (36 x 60) + (0 x 10) + 2	34,562
	(6 x 3600) + (37 x 60) + (0 x 10) + 3	23,823
	(3 x 3600) + (55 x 60) + (2 x 10) + 5	14,125
	(3 x 3600) + (6 x 60) + (4 x 10) + 4	11,204
	(4 x 3600) + (21 x 60) + (1 x 10) + 1	15,671
	(5 x 3600) + (22 x 60) + (2 x 10) + 9	19,349

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Set 5

29 > 22

854 = 854

21 > 11

3,256 = 3,256

404 > 162

1,572 = 1,572

325 > 79

659 = 659

573 < 32,433

11,484 < 22,299

1,002 < 1,482

2,564 > 1,367

6,523 < 6,623

342 < 872

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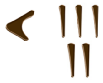
Set 6

	365 + 597	962
	214 + 325	539
	450 + 303	753
	263 + 441	704
	424 + 181	605
	326 + 432	750
	615 + 425	1,040
	342 + 213	555

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Set 7

634 – 212

422

542 – 316

226

452 – 424

28

523 – 145

378

453 – 322

131

628 – 412

216

56 – 32

24

323 – 142

181

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