Unit I: Place value within I00,000

Lesson I: Numbers to I0,000

→ pages 6–8

1. a) There are 1 thousands, 2 hundreds, 5 tens and
      3 ones.
      1,000 + 200 + 50 + 3 = 1,253
      The number is 1,253.
   b) There are 2 thousands, 4 hundreds, 4 tens and
      0 ones.
      The number is 2,440.

2. a) Children should add counters: 1 thousand,
      3 hundreds, 0 tens and 1 one.
   b) 5,632 = 5,000 + 600 + 30 + 2

3. Box crossed out which says in words: Four thousand,
   two hundred and twenty-five.

4. a) 6,230   3,575   9,499   7,009
   b) 3,230   575   6,499   4,009

5. Andy's number is 8,520.

   Kate's number is 5,208.

Reflect

7,562 = 7,000 + 500 + 60 + 2

Explanations will vary; for example: Only the digit 7
(value 7,000) will change: 3,000 less than 7,000 is 4,000,
so the 7 in the thousands column will change to a 4. The
other digits will stay the same so:

3,000 less than 7,562 will be 4,562.

Lesson 2: Rounding to the nearest I0, I00 and I,000

→ pages 9–11

1. a) The number is 6,483.
   b) 6,483 is between 6,000 and 7,000.
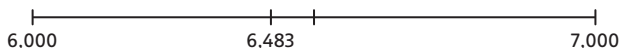
      It is closer to 6,000.
      The number rounds to 6,000 to the nearest 1,000.
   c) 6,480
   d) 6,500

2. Circled numbers: 2,850   2,909   2,949

3. a) 10,000
   b) Answers may vary; children should mark four
      numbers between 9,000 and 9,499 (just before half-
      way along the number line) on the number line.

4. Table completed with the following amounts in the
   empty fields:
   Charity A: £4,700   £4,700
   Charity B: £5,350   £5,000

5. a) Accept answers between 7,525 and 7,925.
   b) Accept answers between 6,100 and 6,140.
   c) Accept answers between 945 and 949.
   d) 6,501
   e) 1,000
   f) 10

6. Two counters added to the hundreds column.

7. The number could be any number between 2,650 and
   2,659.

   The number could **not** be any number outside of that
   range.

Reflect

Answers may vary.

Some possible similarities include: Rounding involves
writing a number which is close to the given number.
When you round a number to the nearest 10, 100 or 1,000
it will give a number with a zero in the ones column.

Some possible differences include: When you round
to the nearest 10, the answer will be a multiple of 10.
When you round to the nearest 100, the answer will be
a multiple of 100. When you round to the nearest 1,000,
the answer will be a multiple of 1,000.

Lesson 3: I0,000s, I,000s, I00s, I0s and Is (I)

→ pages 12–14

1. a) 5,000
      10
      80,000
      0
   b) 58,013
      Fifty-eight thousand and thirteen

2. Lines drawn to match:
   43,250 ➜ 40,000
   32,409 ➜ 400
   34,250 ➜ 4,000
   23,546 ➜ 40

3. Counters added into columns:

TTh	Th	H	T	O
1	1	0	1	2

4. Numbers written in to complete part-whole models:
   a) 50,000   5,000   7
   b) 10,000   300
   c) 20,090

5. a) 14,572
   b) 13,672
   c) 13,372
   d) 63,572

6. First card: 5   Second card: allow 6–9
Third card: any digit

Examples given should contain the digits the child
has chosen plus 2 and 0:

Any 5-digit number greater than 60,000.

Any 5-digit number with an even digit in the tens
position.

Any 5-digit number with 5 in the thousands position.

Reflect

Answers may vary; for example:
64,231 = 60,000 + 4,000 + 200 + 30 + 1

Lesson 4: 10,000s, 1,000s, 100s, 10s and 1s (2)

→ pages 15–17

1. a) 86,521
   b) 40,070

2. Boxes completed:
   a) 53,604   3   6   4
   b) 53,604   600   4
   c) 53,604   100
   d) 53,604   104

3. a) Boxes completed:
      Above number line: 30,000   82
      Below number line: 30,500
   b) 30,000 + 500 + 82 = 30,582

4. Boxes completed:
   8,000   300   50
   (or any three numbers that total 8,350)

   Any four numbers that total 68,359.
   Any three numbers that total 68,359.
   Any two numbers that total 68,359.

5. Buckets circled: 7,000 ml   9,000 ml   2,750 ml

6. Answers may vary.

   Numbers in each column must total 5,400. Only
   numbers greater than, or equal to, 1,000 can be used,
   for example:

Ship	Solution 1	Solution 2
Voyager	1,000	1,200
Princess	1,000	2,200
Neptune	3,400	2,000

Reflect

Explanations may vary; for example:

Because 20,000 + 6,000 = 10,000 + 16,000
and 500 + 30 + 2 = 500 + 32.

Lesson 5: The number line to 100,000

→ pages 18–20

1. Numbers on number line from left to right:
   23,000   25,500   27,000   29,900 (approximately)

2. a) Point A is 65,000 (approximately).
      Point B is 29,000 (approximately).
   b) Any three numbers between 45,000 and 55,000.
   c) 47,300 marked on line just under $\frac{3}{4}$ of the way
      between 40,000 and 50,000.
   d) Explanations may vary; for example:
      Because the number with the greatest place value
      in both numbers is the ten thousands number.
      98,500 has 9 in this position (value 90,000) but
      89,500 only has 8 (value 80,000).

3. B circled.

4. 76,100 circled.

5. Answers may vary; for example:
   A = 35,000
   B = 16,000
   C = 52,000
   D = 47,000
   (Allow +/− 2,000)

6. a) Possible answers:
      6,023   6,027   6,032   6,037   6,072   6,073
   b) Possible answers: 36,027   36,207
   c) Any number made from the 5 digits (apart from
      those with 76 thousands).
   d) 72,360

Reflect

Answers may vary; for example:
They are all between 40,000 and 50,000.

Lesson 6: Comparing and ordering numbers to 100,000

→ pages 21–23

1. 84,054 (bottom number) > 84,045
   Explanations may vary; for example:
   Both numbers have same numbers of ten thousands,
   thousands and hundreds, but the bottom number has
   1 more ten so it is the larger number.

2. 6,432 < 23,460 < 26,034 < 32,604

3. 51,795 or 51,975   54,500 or 63,124

4. a) False
   b) True
   c) False
   Explanations may vary; for example:
   The first number has 9,000 while the second has 12,000 and 12,000 > 9,000.

5. 9,999 km   11,561 km   11,651 km   13,200 km
   13,320 km

6. 56,787 < 56,794   or   56,787 < 56,974

7. Answers may vary; for example:
   Car A: £24,510   Car B: £24,150

Reflect

8,976   67,559   74,030   74,300   76,955

Children should mention comparing the digit in the place of largest value first (ten thousands). Where the digit in this place is the same, they need to look at the digit in the next place (thousands), etc.

Lesson 7: Rounding numbers within 100,000

➜ pages 24–26

1. a) 90,000   100,000
   b) 90,000   100,000
      90,000

2. 96,304   100,000   96,000   96,300   96,300

3. a) Number between 39,001 and 39,499.
   b) Number between 39,500 and 39,999.

4. a) 45,300
   b) 90,000
   c) 20,010

5. a) Number between 5 and 9.
   b) Number between 0 and 4.
   c) 8
   d) Possible answers: 50, 51, 52, 53 or 54.

6. Amounts circled: £19,450   £19,549   £19,488

7. Answers may vary.
   Top row: digits in the thousands and ones positions are between 5 and 9;
   digits in the hundreds and tens positions are between 0 and 4.
   Bottom row: digits in the thousands and ones positions are between 0 and 4;
   digits in the hundreds and tens positions are between 5 and 9.

Reflect

hundreds
10,000
10
tens

Explanations may vary; for example:
The number 87,500 is between 87,000 and 88,000. Look at the hundreds digit – this is 5, so 87,500 will round up to 88,000.

Lesson 8: Roman numerals to 10,000

➜ pages 27–29

1.

100	C	600	DC
200	CC	700	DCC
300	CCC	800	DCCC
400	CD	900	CM
500	D	1,000	M

2. a) 1,000 + 1,000 + 100 + 10 + 1 = 2,111
   b) 500 + 100 + 100 + 50 = 750
   c) 100 + 100 − 10 + 5 = 195

3. Part-whole diagrams completed:
   a) CD   LXX
   b) 1,047 (whole)
      40   7 (parts)

4. a) MCCXI   ➜ 1211
   b) MDXLV   ➜ 1545
   c) MCDLXI   ➜ 1461
   d) MCMI   ➜ 1901

5. Lexi is wrong.
   MCX = 1,000 + 100 + 10 = 1,110
   CMX = 1,000 − 100 + 10 = 910

6. a) MCMLXXV
   b) MDLXXX
   c) MMXII

7. MCDXCV   1,495

8. a) There are three possible solutions:
      Solution 1:
      L (to give MDCLIX) = 1,659
      D (to give MCDVI) = 1,406
      X (to give DCCLX) = 760
      C (to give CDXXI) = 421
      V (to give CCCXV) = 315
      Solution 2:
      L (MDCLIX) = 1,659
      D (to give MCDVI) = 1,406
      V (to give DCCLV) = 755
      C (to give CDXXI) = 421
      X (to give CCCXX) = 320

Solution 3:
X (MDCXIX) = 1,619
D (to give MCDVI) = 1,406
V (to give DCCLV) = 755
C (to give CDXXI) = 421
L (to give CCCXL) = 340

b) 315/320/340 < 421 < 760/755/755 < 1,406
   < 1,659/1,619

Reflect

1,000
500   50

Together, MDXL represents the number 1,540 because
M = 1,000, D = 500 and XL = 50 − 10 = 40.

End of unit check

→ **pages 30–31**

My journal

1. Children may describe the number 12,546 in many
ways. For example:

12,546 is a 5-digit number because it has a digit in the
10,000s place;
12,546 is 546 more than 12,000;
12,546 is between the multiples 12,000 and 13,000;
12,546 is a little more than half-way between 12,000
and 13,000;
12,546 rounds to 13,000 to the nearest 1,000;
12,546 rounds to 10,000 to the nearest 10,000.

Representations could include place value grids and
partitioning in part-whole models, on number lines or
as abstract number sentences.