Unit 1 – Numbers to 10

Sorting objects

→ pages 6–8

1. a to d: Children should have sorted groups of rabbits, tortoises, bicycles, footballs, eggs and cars, long ties and bow ties.

2. Children should have sorted groups of large strawberries and small strawberries.

3. a and b: Children should have sorted groups of balloons, faces, full bottles and empty bottles.

4. Children should have circled one item in each set as follows:
a) bicycle
b) pen
c) rugby ball
d) chair – alternative answers could be justified, e.g. bicycle because the others all have 4 of something (wheels or legs)

5. Children should have sorted the objects so that every item in each set shares a common feature. There are many possible answers, e.g. animals and non-animals or objects with wings and objects without wings.

Reflect

Children should have drawn objects organised into sets so that every item in each set shares a common feature. There are many possible answers, e.g. books and furniture. If it is not clear how children have sorted objects, you may need to ask them what is the same about every object in a set.

Counting objects to 10

→ pages 9–11

1. a) 1 chalk
b) 4 cotton reels
c) 8 ladybirds
d) 9 balls
e) 6 counters
f) 9 counters

2. Children should have coloured counters and written the numeral as follows:
a) 8
b) 4

3. Children should have coloured apples as follows:
a) 7
b) 5

4. There are 9 keys.

5. Children could have drawn 10 in a ten frame, with cubes, with a bead string or on dice faces.

Reflect

Children could have drawn a range of representations for their chosen number, e.g. using the ten frame, a bead string, the number written as a word or a set containing that number of objects.

Counting and writing numbers to 10

→ pages 12–14

1. a) 2
b) 3
c) 7
d) 8

2. 6
six

3. 5
five

4. Children should have coloured:
a) 5 trees
b) 7 umbrellas
c) 2 apples

5. 6 cupcakes
2 plates

6. a) 4
four
b) 4
four

Reflect

Children should have completed the number track:

1 one	2 two	3 three	4 four	5 five	6 six	7 seven	8 eight	9 nine	10 ten

Counting backwards from 10 to 0

→ pages 15–17

1. Children should have completed the number tracks as follows:

a)

8	7	6	5	4	3	2	1

b)

5	4	3	2	1	0

© Pearson Education 2020

2. Children should have completed the number tracks as follows:

a)

7	6	5	4	3	2	1	0

b)

10	9	8	7	6	5

c)

5	4	3	2	1

3. Six, five, four, three, two, one, zero

4. Children should have completed the sequences as follows:

a)

10	9	8	7	6

b)

4	3	2	1	0

c) 6 7 8 9 10

d)

1	2	3	4

5. Children should have completed the sequences as follows:

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

Reflect

Children will have written different sequences depending on the dice roll, e.g.

Count on to 10 from your dice number: 4, 5, 6, 7, 8, 9, 10

Count back to 0 from your dice number: 4, 3, 2, 1, 0

Counting one more

➜ pages 18–20

1. a) One more than 3 is 4.
b) One more than 7 is 8.
c) 9 is one more than 8.

2. Lee has 7 flowers.

3. a) 8 one more ➜ 9
b) 2 one more ➜ 3
c) 6 one more ➜ 7
d) four one more ➜ five

4. a) 8 one more ➜ 9 one more ➜ 10
b) 7 one more ➜ 8 one more ➜ 9
c) 6 one more ➜ 7 one more ➜ 8

5. Children are most likely to have coloured 8 counters on one ten frame and 7 on the other ten frame. However, some children might have chosen to colour 7 counters and then one more counter on the same frame in a different colour to make 8 altogether.

Reflect

Children should have completed the top number sentence so that the number in the right-hand box is one more than the number in the left-hand box, e.g. I know that one more than 5 is 6.

Children should have completed the bottom number sentence so that the number in the left-hand box is one more than the number in the right-hand box, e.g. 10 is one more than 9.

Counting one less

➜ pages 21–23

1. a) One less than 10 is 9.
One less than 1 is 0.
b) 3 is one less than 4.
8 is one less than 9.
c) 2 (counters) is one less than 3 (counters).

2. Lily has 4 sweets.

3. 10 one less ➜ 9
7 one less ➜ 6
8 one less ➜ 7

4. a) 5 is one less than 6.
b) 7 is one more than 6.

5. a)

one less	number	one more
7	8	9

b)

one less	number	one more
1	2	3

Reflect

Children should have held up one fewer finger than their friend, e.g. if their friend held up 4 fingers, they should have held up 3.

Children have been prompted towards understanding that if they are holding up one fewer finger than their friend, this means that their friend is holding up one more finger than they are.

Comparing groups

➜ pages 24–26

1. Children should have ticked the box next to the cup.

2. Children should have ticked the box next to the strawberry.

3. Children should have ticked the box next to the word 'No'.

© Pearson Education 2020

4. Children should have ticked the first and third sentences.

5. Children should have ticked the box next to the star.

Reflect

Children should have drawn 4 or fewer sweets.

Comparing numbers of objects

→ pages 27–29

1. a) Children should have ticked the box under the caterpillar.
b) Children should have ticked the box under the ladybird.

2. a) 7 > 4
b) 4 < 6
c) 2 = 2
d) 10 > 8

3. a) 2 < 5
b) 6 = 6

4. a) Children should have drawn 4 or more stars.
b) Children should have written a number sentence starting with '3 <' followed by the number of stars from their answer to part b, e.g. 3 < 4.

5. The following answers are possible: 6, 7, 8 or 9.

Reflect

Children should have ticked the box next to '4 > 3'.

Comparing numbers

→ pages 30–32

1. a) 6 < 8
b) 5 = 5
c) 3 < 10

2. a) 7 = 7
b) 0 < 4
c) 6 > 5
d) 10 > 2
e) 5 < 6
f) 8 > 3

3. Children should have circled the following numbers:
a) 8
b) 2
c) 10
d) 4

4. Children should have circled the following numbers:
a) 3
b) 4
c) 8
d) 1

5. Children should have completed the number sentences by writing in:
a) any number less than 6, e.g. 2 or 5
b) any number less than 10, e.g. 4 or 9
c) any number greater than 5, e.g. 6 or 8

Reflect

Children should have created a sequence where ongoing terms alternate between being greater than and less than the preceding term. There are many possible answers, e.g. 3, 5, 0, 10, 7, 8… or 0, 1, 0, 1, 0, 1…

Ordering objects and numbers

→ pages 33–35

1. Children should have circled the following:
a) box containing 8 eggs
b) dice showing 6 dots
c) ten frame containing 10 counters
d) bunch containing 7 flowers
e) 8
f) 10

2. Children should have circled the following:
a) box containing 5 oranges
b) cake with 2 candles
c) tower with 1 cube
d) 0
e) three
f) dice showing 1 dot

3. a) 5, 7, 8
b) 3, 1, 0
c) 1, 5, 9, 10
d) ten, six, five

4. Children should have written the following answers into the boxes:
a) 7
b) 2, 1 or 0
c) six or seven
d) 0, 1, 2, 3, 4, 5 or 6
e) 6 or 5 then 3, 2, 1 or 0

5. Children should have circled the tower on the right, which contains 6 small cubes.

Reflect

Children could have written 2, 7, 9 or 9, 7, 2 depending on whether they have chosen to start with the smallest or the greatest.

© Pearson Education 2020

First, second, third

→ pages 36–38

1. 2nd 1st
4th 3rd

2. a) Children should have coloured the 4th counter.
b) Children should have circled the 9th (last) duck.
c) Children should have circled the first 4 books.

3. a) Children should have selected the square.
b) Children should have selected the rectangle.

4. 7 8 5 7

5. ☆ ☆ △ ☆ ☆ △ ☆ ☆

Reflect

There are many possible answers. Children should have described which counters their friend coloured using ordinal numbers, e.g. second, third and fifth.

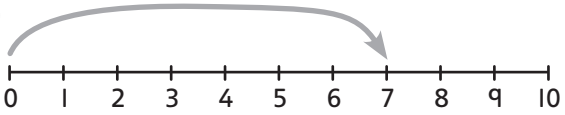
The number line

→ pages 39–41

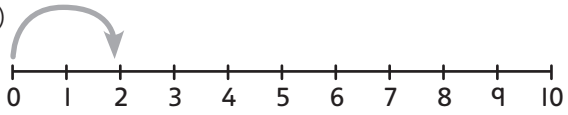
1. Answers from left to right as follows:
a) 5, 6, 7, 10
b) 0, 2, 5, 9
c) 3, 5, 8

2. Children should have drawn an arrow to the correct mark on the number line.

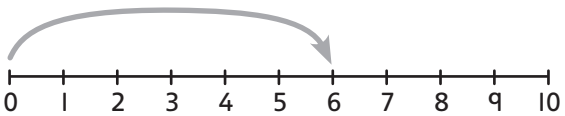
a)



b)



c)



3. a) 7
b) 2
c) 1

4. a) 6
b) 9
c) 0

5. a) 7
b) 4

6. 9, 8, 5, 1

Reflect

There are many possible answers, e.g.

I have learnt how to use a number line to put numbers in order.

I have learnt how to use a number line to find one less.

End of unit check

→ pages 42–43

My journal

Children should have coloured 5 balloons red and 1 balloon yellow.

Children should have coloured 3 balloons red and 3 balloons yellow.

There are many possible answers, e.g.

What is the same? Bea and Seth have the same number of balloons. Bea and Seth both have red and yellow balloons.

What is different? Bea has more red balloons than Seth. Seth has 3 yellow balloons but Bea has 1.

© Pearson Education 2020

Unit 2 – Part-whole within 10

The part-whole model (I)

➜ pages 44–46

1. Children should have written in numbers to complete the part-whole models as follows:
a) 5, 4 (parts)
b) 8 (whole), 5 and 3 (parts)

2. Children should have drawn 1 person in one circle and 4 people in the other.

3. a) 1
b) 4
c) 7

4. Answers from left to right: 2, 3

5. Children should have completed each diagram by writing in a pair of numbers that total 5. Possible pairs are: 0 and 5, 1 and 4, 2 and 3. Each pair can be presented in either order.

Reflect

The statement is false. In a part-whole model, the whole is not always the largest number. If one of the parts is 0 then the whole will have the same value as the other part, so is not the largest number, e.g. parts of 2 and 0 give a whole of 2.

Some children might have heard about negative numbers and might have discussed these during this activity.

The part-whole model (2)

➜ pages 47–49

1. a) 3, 2 (parts)
b) 6 (whole), 4, 2 (parts)

2. 6 + 1 = 7 or 1 + 6 = 7

3. a) 2 + 7 = 9 or 7 + 2 = 9
b) 2 + 4 = 6 or 4 + 2 = 6

4. Children should have completed the number sentences and part-whole models using number bonds to 5. There are many possible answers, e.g. 3 + 2 = 5, 0 + 5 = 5 or 5 + 0 = 5.

5. Children should have completed the number sentences and part-whole models using number bonds to 4. The answers are: 0 + 4 = 4, 1 + 3 = 4, 2 + 2 = 4, 3 + 1 = 4, 4 + 0 = 4 (written in any order).

Reflect

Alternatives are possible but the most likely answers are:

What is the same? 8 is the total (whole) in both number sentences.

What is different? (The parts) 5 and 3 are written different ways round.

Related facts – number bonds

➜ pages 50–52

1. Children should have written 8 (whole), 5 and 3 (parts) into the part-whole model and completed the number sentences as follows:
5 + 3 = 8 or 3 + 5 = 8
8 = 5 + 3 or 8 = 3 + 5
3 + 5 = 8 or 5 + 3 = 8
8 = 3 + 5 or 8 = 5 + 3

2. Children should have written 7 (whole), 4 and 3 (parts) into the part-whole diagram and completed four different number sentences as follows:
4 + 3 = 7 or 3 + 4 = 7
7 = 4 + 3 or 7 = 3 + 4
3 + 4 = 7 or 4 + 3 = 7
7 = 4 + 3 or 7 = 3 + 4

3. 4 + 2 = 6
6 = 4 + 2 or 6 = 2 + 4
2 + 4 = 6 or 4 + 2 = 6
6 = 2 + 4 or 6 = 4 + 2

4. Children should have written 6 (whole), 3 and 3 (parts) into the part-whole model. There are only two possible addition number sentences: 6 = 3 + 3 and 3 + 3 = 6. It is possible that some children might have also written the subtraction number sentences: 6 – 3 = 3 and 3 = 6 – 3.

5. Children should have written three of these number sentences: 5 = 5 + 0, 0 + 5 = 5, 5 + 0 = 5, 5 – 0 = 5 (in any order).

Reflect

There are many possible answers.

Where the parts have different values, children should have written four addition number sentences, e.g. 2 + 5 = 7, 5 + 2 = 7, 7 = 2 + 5, 7 = 5 + 2.

Where the parts have the same value, children should have written two addition number sentences, e.g. 5 + 5 = 10, 10 = 5 + 5.

It is possible that some children might include subtraction number sentences, e.g. 10 – 5 = 5 or 5 = 10 – 5.

© Pearson Education 2020

Finding number bonds

➜ pages 53–55

1. a) 1 + 3 = 4
b) 2 + 2 = 4
c) 3 + 1 = 4

2. a) 1 + 6 = 7
b) 2 + 5 = 7
c) 3 + 4 = 7

3. a) Children should have drawn 2 white beads to show 4 + 2 = 6.
b) Children should have drawn 5 black and 1 white beads to show 5 + 1 = 6.
c) Children should have drawn 3 black and 3 white beads to show 6 = 3 + 3.

4. a) 8 + 1 = 9
b) 7 + 2 = 9
c) 6 + 3 = 9
d) 4 + 5 = 9
e) 6 + 3 = 9
f) 9 + 0 = 9

5. There are many possible answers, e.g. 0 + 8 = 8, 1 + 7 = 8, 2 + 6 = 8, 3 + 5 = 8, 4 + 4 = 8, 5 + 3 = 8, 6 + 2 = 8, 7 + 1 = 8, 8 + 0 = 8, 8 = 0 + 8, 8 = 1 + 7, 8 = 2 + 6, 8 = 3 + 5, 8 = 4 + 4, 8 = 5 + 3, 8 = 6 + 2, 8 = 7 + 1, 8 = 8 + 0.
Some children may use subtraction.

Reflect

Children should have drawn beads to show different number bonds to 4. Possible number bonds are:
4 = 0 + 4, 4 = 1 + 3, 4 = 2 + 2, 4 = 3 + 1, 4 = 4 + 0.

Comparing number bonds

➜ pages 56–58

1. Children should have circled the second child.

2. Children should have circled the second child.

3. a) <
b) <
c) =
d) <

4. a) Any number greater than 5
b) 0 or 1
c) 3
d) 0, 1 or 2

5. Triangle = 4
Star = 1
Heart = 5

Reflect

There are many possible answers,
e.g. 0 + 1 = 1, 1 + 2 = 3.

There are many possible answers for the children comparing their number sentences with a partner,
e.g. 2 + 0 < 3 + 5,
0 + 5 > 1 + 3 or 4 + 1 = 3 + 2.

Some children may have started to understand that number sentences that compare two non-equal amounts can be written in two ways. For example, if one child has made the expression 5 + 1 and their partner has made the expression 2 + 3, they could write 5 + 1 > 2 + 3 or 2 + 3 < 5 + 1.

End of unit check

➜ pages 59–60

My journal

There are many possible answers, e.g.

First part-whole model
10 (whole), 9 and 1 (parts)
10 (whole), 6 and 4 (parts)

Second part-whole model
8 (whole), 6 and 2 (parts)
9 (whole), 7 and 2 (parts)

Third part-whole model
7 (whole), 4 and 3 (parts)
8 (whole), 5 and 3 (parts)

© Pearson Education 2020

Unit 3 – Addition and subtraction within 10 (I)

Finding the whole – adding together

➜ pages 61–63

1. Children should have drawn and written answers as follows:
a) 7 dots, 7, 7
b) 8 dots, 8, 3 + 5 = 8 or 5 + 3 = 8
c) Children should have written any number in the parts that is 6 or less and added this to 4 to get to the whole and the corresponding number sentence, e.g. 5 and 4 (parts), 9 (whole), 5 + 4 = 9.

2. Children should have completed the part-whole models and number sentences as follows:
a) 2 and 5 (parts), 7 (whole) 2 + 5 = 7 or 5 + 2 = 7
b) 3 and 4 (parts), 7 (whole) 3 + 4 = 7 or 4 + 3 = 7
c) 6 and 1 (parts), 7 (whole) 6 + 1 = 7 or 1 + 6 = 7

3. 4 + 4 = 8

4. Children could have written any number bonds to 9, e.g. 3 + 6, 1 + 8, 9 + 0 or 0 + 9.

5. Children could have written any number bonds to 6, e.g. 0 + 6 or 2 + 4.

Reflect

Children could have explained their methods in different ways, e.g.

I can find the total number of hats and scarves by drawing a part-whole model.

I can find the total number of hats and scarves by counting the objects.

Finding the whole – adding more

➜ pages 64–66

1. a) 5 + 1 = 6
b) 5 + 3 = 8

2. a) 4 + 2 = 6
b) 1 + 6 = 7
c) 2 + 4 = 6

3. a) 2 + 5 = 7 or 5 + 2 = 7
There are 7 balls in total.
b) 5 + 4 = 9 or 4 + 5 = 9
There are 9 counters in total.
c) 5 + 3 = 8 or 3 + 5 = 8
There are 8 counters in total.

4. a) 9
b) 9
c) 8
d) 10

5. Children should have drawn arrows to the correct mark on the number line.
2 + 3 ➜ 5
1 + 0 ➜ 1
5 + 4 ➜ 9
4 + 6 ➜ 10
3 + 3 ➜ 6

Reflect

Children could have explained different methods, and in different ways, e.g. You can solve 8 + 2 by starting at 8 and counting on 2 or by jumping along a number line.

Finding a part

➜ pages 67–69

1. a) 5 (counters), 5, 2 + 5 = 7
b) 3 counters, 4 (whole), 1 and 3 (parts), 1 + 3 = 4

2. a) 3 + 4 = 7
b) 5 + 3 = 8
c) 7 + 2 = 9

3. a) 1 dot
b) 2 dots
c) 3 dots

4. 2 + 5 = 7
There are 5 children still in the tunnel.

5. a) 3
b) 4
c) 1
d) 0

6. a) 5 = 2 + 3
5 = 3 + 2
b) 7 + 2 = 9
7 + 1 = 8

Reflect

Children could have explained their methods in different ways, e.g.

To work out 4 + ☐ = 7, I could count from 4 up to 7.

To work out 4 + ☐ = 7, I could draw a part-whole model and see how many counters I need in the second part to make 7 altogether.

© Pearson Education 2020

Finding and making number bonds

→ pages 70–72

1. a) 6
b) 4
c) 1
d) 3
e) 7
f) 9

2. a) 7
b) 5
c) 4
d) 1

3. 0

4. heart = 8, triangle = 2, star = 4, rhombus = 5

Reflect

There are 11 possible bonds to 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 = 10, 10 + 0 = 10.

Finding addition facts

→ pages 73–75

1. a) 8 + 2 = 10 and 2 + 8 = 10
b) 6 + 4 = 10 and 4 + 6 = 10

2. a) 2 + 8 = 10, 8 + 2 = 10, 8 (parts)
b) 10 = 3 + 7, 10 = 7 + 3, 7 (parts)
c) 10 = 9 + 1, 1 + 9 = 10, 1 (part)

3. Children should have joined 1 and 9, 2 and 8, 3 and 7, 4 and 6. Children might have suggested that the number 5 does not have a pair. Alternatively some children could have joined 5 to itself.

4. 3 + 7 = 10 or 7 + 3 = 10

5. a) 2 + 8 = 10 or 8 + 2 = 10 or 3 + 7 = 10 or 7 + 3 = 10
b) 3 + 2 = 5
c) 10 = 4 + 6

6. Children could have answered in different ways but the most likely answers are:
What is the same? All pictures link to the number bond 5 + 5 = 10.
What is different? The objects are different in each picture.

Reflect

There are many possible answers, e.g.

I also know that 4 + 6 = 10.

I also know that 5 + 5 = 10.

Solving word problems – addition

→ pages 76–78

1. There are 6 hats.
There are 3 scarves.
6 + 3 = 9 or 3 + 6 = 9
There are 9 hats and scarves in total.

2. 5 + 2 = 7 or 2 + 5 = 7

3. a) There are 10 planes in total.
b) There are 8 planes in total.

4. a) 3 + 4 = 7 or 4 + 3 = 7 2 + 7 = 9 or 7 + 2 = 9
b) 9 is greater than 7.

Reflect

Children's stories will vary but should be based around the number sentence 4 + 5 = 9.

End of unit check

→ pages 79–80

My journal

There are different possible answers, e.g.

Children might have chosen the number line because the other two images represent doubles.

Children might have chosen the part-whole model because it does not involve the number 5 as part of the associated number sentence.

© Pearson Education 2020

Unit 4 – Addition and subtraction within 10 (2)

Subtraction – how many are left? (I)

➜ pages 81–83

1. There are 4 snowmen left.

2. There are 3 candles still lit.

3. a) There are 5 trees left.
b) There are 8 trees left.

4. 5 birds fly away.
5 birds are left.

5. 3 toy lorries are left.

6. 5

Reflect

3, 4, 2

Children's answers will vary but might include that in each case they completed a subtraction by counting out how many were left.

Subtraction – how many are left (2)

➜ pages 84–86

1. 6 – 2 = 4
There are 4 eggs left.

2. a) 9
b) 5
c) 3

3. a) 5
b) 1

4. a) 4 – 2 = 2
b) 8 – 4 = 4

5. a) 7 – 5 = 2
b) 9 – 6 = 3
c) 3
d) 4
e) 2
f) 0

Reflect

Children could have explained what the subtraction number sentence means in different ways, e.g.

5 – 2 = 3 can mean that you have to start at 5 and count back 2. The answer is 3.

5 – 2 = 3 can mean that you start with 5 objects and subtract 2, which leaves you with 3 objects.

Some children might know and use the term 'difference', e.g. 5 – 2 means that you find the difference between 5 and 2.

Subtraction – breaking apart (I)

➜ pages 87–89

1. 8 – 2 = 6. There are 6 stripy fish. Children should have written 6 (parts) into the part-whole diagram.

2. 7 are bananas. 10 – 7 = 3. There are 3 apples. Children should have written 7 and 3 (parts) in the part-whole model.

3. Children should have filled the missing numbers into the part-whole diagram and completed the subtractions as follows:
a) 1, 8 – 7 = 1
b) 5, 10 – 5 = 5

4. Children should have filled the missing numbers into the part-whole diagram and completed the subtraction as follows:

9 (whole), 3 (Tess part), 6 (Mia Part). 9 – 3 = 6

5. 3 inserted in the part-whole model, 8 – 5 = 3

Reflect

Children should have drawn the following numbers of dots into the part-whole diagram and completed the subtraction as follows:

a) 1, 6 – 5 = 1
b) 0, 5 – 5 = 0

Subtraction – breaking apart (2)

➜ pages 90–92

1. a) 9 – 4 = 5. There are 5 small hedgehogs.
b) 9 – 6 = 3. There are 3 small cats.

2. 9 – 4 = 5. There are 5 white cubes.

© Pearson Education 2020

3. a) 4 – 3 = 1 (or 4 – 1 = 3)
b) 10 – 5 = 5
c) 6, 8 – 2 = 6 (or 8 – 6 = 2)
d) 5, 6 – 5 = 1 (or 6 – 1 = 5)

4. 8 – 5 = 3. There are 3 bananas.

5. a) 1, 1
b) 7, 7

Reflect

Children could have explained the mistakes in different ways, e.g.

The numbers have been put in the wrong places in the number sentence.

To find the missing part in a part-whole model, the number sentence is written (whole) – (one part) = (remaining part). These subtraction number sentences did not start with the whole.

Try to avoid language such as 'You cannot subtract a greater number from a smaller number' since it is possible to subtract a greater number from a smaller number (although the answer will be a negative number).

Related facts – addition and subtraction (I)

➜ pages 93–95

1. a) There are 8 frogs in total. 2 are on lily pads. 6 are swimming.
b) 2 and 6 (parts)
c) 2 + 6 = 8, 6 + 2 = 8, 8 – 2 = 6, 8 – 6 = 2

2. Children should have completed the diagram and number sentences as follows:
Part-whole diagram: 6 (part)
4 + 6 = 10, 6 + 4 = 10, 10 – 6 = 4 and 10 – 4 = 6
The fact 10 – 4 shows how many paintbrushes there are.

3. Children should have written 5 (whole), 3 and 2 (parts) in the part-whole model and completed the calculations.
3 + 2 = 5, 2 + 3 = 5, 5 – 3 = 2, 5 – 2 = 3

4. 4 + 2 = 6 and 6 – 2 = 4. Children should have circled the two addition facts.

Reflect

Children should have circled the number sentence 5 – 9 = 4. They could have explained how they knew this was a mistake in different ways, e.g.

In a part-whole model, subtraction number sentences are written 'whole – part = other part' so this number sentence should start with the whole (9).

If you have a set of 5 objects, you cannot split it into a part containing 9 objects and another part.

Try to avoid language such as 'You cannot subtract a greater number from a smaller number' since it is possible to subtract a greater number from a smaller number (although the answer will be a negative number).

Related facts – addition and subtraction (2)

➜ pages 96–98

1. 5 and 4 (parts), 4 + 5 = 9, 9 = 5 + 4 or 9 = 4 + 5

2. 4 and 1 (parts)
5 – 1 = 4 5 – 4 = 1
4 = 5 – 1 1 = 5 – 4

3. a) 4 + 6 = 10, 6 + 4 = 10, 10 – 6 = 4, 10 – 4 = 6, 10 = 6 + 4, 10 = 4 + 6, 4 = 10 – 6, 6 = 10 – 4 (order may differ)
b) 4 + 6 = 10 or 10 = 4 + 6
c) 4 = 10 – 6 or 10 – 6 = 4

4. 6 + 3 = 9 or 3 + 6 = 9, 9 – 3 = 6 or 9 – 6 = 3, 9 = 3 + 6 or 9 = 6 + 3, 6 = 9 – 3 or 3 = 9 – 6

5. There are many possible answers, e.g.
3 + 7 = 10, 7 + 3 = 10, 10 – 3 = 7, 10 – 7 = 3, 10 = 3 + 7, 10 = 7 + 3, 7 = 10 – 3, 3 = 10 – 7

Reflect

There are many possible answers.

Children could have written number facts from the same number family, e.g.

If I know 6 – 4 = 2, I also know that 6 – 2 = 4, 4 + 2 = 6 or 6 = 4 + 2.

Some children could have written facts that are related but use different numbers, e.g.

If I know 6 – 4 = 2, I also know 6 – 5 = 1.

© Pearson Education 2020

Subtraction – counting back

➜ pages 99–101

1. 4

2. 7 – 5 = 2. Frog makes 5 jumps.

3. a) 9 – 2 = 7
b) 10 – 6 = 4
c) 6 = 10 – 4

4. a) 5
b) 2
c) 9
d) 6

5. Children should have written subtraction pairs with a difference of 5, e.g. 10 – 5, 9 – 4, 8 – 3, 7 – 2, 6 – 1 and 5 – 0. Some children might have included numbers greater than 10, e.g. 15 – 10 or 16 – 11.

Reflect

Children could have identified different subtraction methods and explained them in different ways, e.g.

I could count back along a number line.

I could use an addition fact.

I could break the whole number into parts.

Subtraction – finding the difference

➜ pages 102–104

1. 7 – 3 = 4. There are 4 more ducks than frogs.

2. 7 – 4 = 3. There are 3 fewer cupcakes than plates.

3. 9 – 6 = 3. There are 3 fewer horses than kangaroos.

4. There are two possible answers. Children should have drawn a tower made from 4 cubes, a tower made from 6 cubes or both.

5. Answers from top to bottom: 9, 8, 3, 0

Reflect

Answers from top to bottom: 5, 5, 5 – 5 = 0.

Children should have drawn 1 more bird on each branch so that the difference remains the same.

Solving word problems – subtraction

➜ pages 105–107

1. a) 8 – 2 = 6. 6 legs do not have stripes.
b) There are 6 snails. There are 5 slugs. 6 – 5 = 1

2. Children should have matched the calculations with the questions as follows:
How many need carrots? ➜ 8 – 3 = 5
How many need hats? ➜ 8 – 2 = 6

3. a) 10
b) 7
c) 10 – 7 = 3

4. a) 5
b) 3
c) 5 – 3 = 2

Reflect

There are many different possible answers. Children could have set the problem in any context. Children could have interpreted subtraction in different ways, including counting back, breaking into parts or finding the difference, e.g.

The 10 means I am given £10 for my birthday. The –2 means that I spend £2 on toys. The 8 means that I have £8 left.

The 10 is how many goals I scored in a football match. The – 2 compares this to the 2 goals my friend scored. The 8 is how many more goals I scored than my friend.

Comparing additions and subtractions (I)

➜ pages 108–110

1. a) 5 + 2 = 7. There are 7 bikes in total.
b) 7 > 6 Yes

2. a) >
b) <
c) >

3. Answers from top to bottom:
a) >, >, <, =
b) <, =, <, >

4. Children should have matched calculations as follows:
Matched to '< 5': 9 – 5, 1 + 2, 2 + 2, 6 – 2, 6 – 3
Matched to '> 5': 2 + 5, 3 + 5, 9 – 3, 9 – 1

5. 4 + 3 > 6 is true. Children should have drawn three more cubes along the number line to prove it.

Reflect

2 + 4 < 7 4 + 4 > 7 7 > 9 – 4

© Pearson Education 2020

Comparing additions and subtractions (2)

➜ pages 111–113

1. a) 3 + 6 = 7 + 2.
b) They are equal.

2. a) 4 + 4 < 2 + 7
b) 5 + 1 < 1 + 6

3. a) 4 + 2 > 3 + 2
b) 5 + 1 = 3 + 3
c) 6 – 3 < 6 – 2

4. a) 7 + 2 = 2 + 7, 4 + 5 > 4 + 3, 3 + 1 < 3 + 3
b) 8 – 3 > 8 – 4, 5 – 3 > 4 – 3, 3 – 3 = 4 – 4

5. There are several possible answers:
First number sentence: 5 – 2 > 1 + 1, 5 – 2 > 1 + 0, 5 – 2 > 0 + 1 or 5 – 2 > 0 + 0
Second number sentence: 5 – 3 > 0 + 1, 5 – 3 > 1 + 0 or 5 – 3 > 0 + 0
Third number sentence: any pair of numbers with a total that is greater than 9, e.g. 5 + 5 > 10 – 1 or 10 + 3 > 10 – 1
Fourth number sentence: 1 + 0 < 10 – 8, 0 + 1 < 10 – 8 or 0 + 0 < 10 – 8

Reflect

Different answers are possible, e.g.

Number sentences involving addition: 3 + 4 = 2 + 5, 5 + 3 > 4 + 2 and 2 + 3 < 4 + 5

Number sentences involving subtraction: 5 – 3 = 4 – 2, 4 – 3 < 5 – 2 and 5 – 2 > 4 – 3

Solving word problems – addition and subtraction

➜ pages 114–116

1. 8 – 5 = 3. Hamsa has 3 more sweets than Lucy.

2. 3 + 5 = 8
Hamsa has 8 cubes.

3. 6 – 2 = 4
There are 4 apples left.

4. Children should have completed the calculations and matched each to a picture as follows:
3 + 2 = 5 ➜ bottom picture
8 – 3 = 5 ➜ third picture
8 = 5 + 3 ➜ second picture
4 = 7 – 3 ➜ top picture

5. square = 5, triangle = 3, circle = 2

Reflect

Children could have written questions that involve addition or subtraction, e.g.

There are 3 full glasses and 5 empty glasses. How many glasses are there altogether?

There are 3 full glasses and 5 empty glasses. How many more glasses are empty?

End of unit check

➜ pages 117–118

My journal

Marc has put some numbers in the wrong place in the calculation 3 – 6 = 3. Children could have explained the mistake in different ways, e.g.

In a part-whole model, subtraction number sentences are written 'whole – part = other part' so this number sentence should start with the whole (6).

If you have a set of 3 objects, you cannot split it into a part containing 6 objects and another part.

Try to avoid language such as 'You cannot subtract a greater number from a smaller number' since it is possible to subtract a greater number from a smaller number (although the answer will be a negative number).

Power puzzle

There are several possible answers, e.g.

2 – 0 < 4 and 5 > 1 + 3

2 – 1 < 3 and 5 > 0 + 4

5 – 4 < 3 and 2 > 1 + 0

© Pearson Education 2020

Unit 5 – 2D and 3D shapes

Naming 3D shapes (I)

➜ pages 119–121

1. Children should have circled:
a) first and fourth shapes (cubes)
b) first and third shapes (pyramids)

2. Children should have circled:
a) cylinder
b) second shape from left (cuboid which is not a cube)
c) cube

3. a) There are 4 cubes.
b) There are 3 spheres.
c) There are 2 cylinders.

4. cube, cuboid, sphere, pyramid

Reflect

There are many possible answers, e.g.
cube: dice, some boxes of tissues
cuboid: most boxes of chocolates, most mirrors
sphere: balls, oranges
cylinder: tin cans, unsharpened pencils
pyramid: some chocolate boxes

Naming 3D shapes (2)

➜ pages 122–124

1. Children should have matched shapes to names as follows:
top shape ➜ pyramid
second shape from top ➜ cylinder
third shape from top ➜ cube
bottom shape ➜ cuboid
The cube (third shape from top) could also be matched to the name cuboid because all cubes are also cuboids. However, children in Y2 are unlikely to suggest this.

2. Children should have circled the second and third shapes.

3. Children should have ticked the first and third sentences.

4. Children should have matched the boxes and objects as follows:
left-hand box ➜ middle set of objects
middle box ➜ right-hand set of objects
right-hand box ➜ left-hand set of objects

5. Children should have written the letters into the hoops as follows:
pyramids: E, G
spheres and cylinders: C, D, H, I
cuboids: A, B, F, J

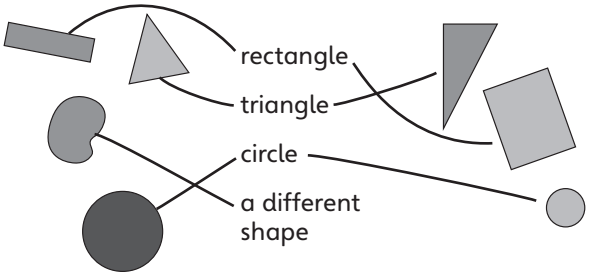
Reflect

Different answers are possible. The most likely shapes for children to name are: cube, cuboid, sphere, cylinder and pyramid.

Naming 2D shapes (I)

➜ pages 125–127

1. Children should have matched shapes to names as follows:



2. Children should have circled the following shapes:
a) third shape (non-square rectangle)
b) second shape (oval)
c) third shape (square)
d) fourth shape (has curved side). However, other answers are possible (such as the first shape has an even number of sides) so justification should be asked for alternatives.

3. triangle circle
square triangle
rectangle

4. Children could have arranged 6 squares into a 3 × 2 grid, a 2 × 3 grid, a 1 × 6 grid or a 6 × 1 grid.

5. a) There are 7 circles.
b) The most likely answer is 5 but alternative answers are possible if the rectangles that represent the ground, sky and whole picture are included.
c) There are 10 triangles.

Reflect

circle triangle
rectangle square

© Pearson Education 2020

Naming 2D shapes (2)

➜ pages 128–130

1. Children should have joined the 3D shapes as follows:
cube ➜ square
cuboid ➜ rectangle or square
pyramid ➜ triangle
cone ➜ circle

2. Children should have crossed out the following 2D shapes:
Cube: non-square rectangle (right-hand shape)
Pyramid: right-angled triangle (second shape from left)

3. a) cube
b) square-based pyramid
c) circle or circular
d) circle or triangle
e) cone

4. The top shape is made from a rectangle and a triangle.
The middle shape is made from a rectangle and two circles.
The bottom shape is made from a circle and a triangle.
Children may also say a circle and three triangles.

5. The children should have matched the shape with the order it was printed as follows:
rectangle ➜ first and sixth
square ➜ third
triangle ➜ fourth
circle ➜ second and fifth

Reflect

Children should have matched names and shapes as follows:
square ➜ fourth shape (2D)
cube ➜ second shape (3D)
cuboid ➜ fifth shape (3D)
rectangle ➜ third shape (2D)
triangle ➜ first shape (2D)
pyramid ➜ sixth shape (3D)

The above answers show the most likely matchings. However, the word cuboid could also be matched to the second shape since all cubes are also cuboids. Similarly, the word rectangle could also be matched to the fourth shape since all squares are also rectangles.

Making patterns with shapes

➜ pages 131–133

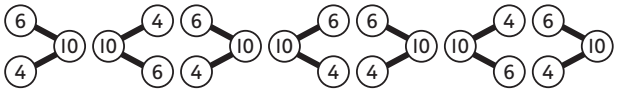
1. Children should have continued the patterns as follows:
a) large square, small square
b) square containing rectangle sloping downwards to the right, square containing rectangle sloping downwards to the left

2. Children should have circled the following:
a) middle pair of shapes
b) middle pair of shapes

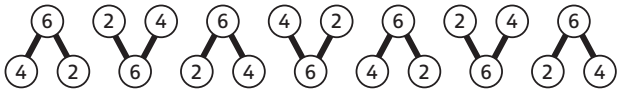
3. a) Children should have circled the shapes in groups of 3. The pattern has 3 repeating shapes.
b) Children should have circled the shapes in groups of 4. The pattern has 4 repeating shapes.

4. Children should have circled the following shapes:
a) middle square
b) second triangle

5. a)



b)



Reflect

Children could have made very different repeating patterns as they can choose the shapes they use and whether their repeating pattern involves two shapes or three shapes.

Examples include:

square, triangle, square, triangle, square… (pattern has two repeating shapes)

square, square, triangle, square, square, triangle… (pattern has three repeating shapes)

End of unit check

➜ pages 134–135

My journal

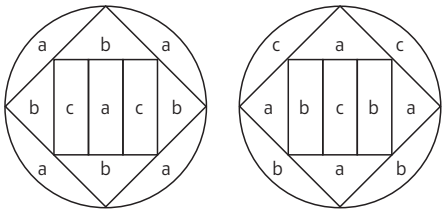
Children could have given alternative answers but should have been able to justify their choice by explaining what feature the cube shares with the rest of the group, e.g.

I put the shape in the group on the left because it is a 3D shape, not a 2D shape.

I put the shape in the group on the left because it is a dark shape, not a light shape.

Power puzzle

There are many different ways of colouring the shapes using three colours so that shapes with the same colour are only touching at the corner, e.g.



© Pearson Education 2020

Unit 6 – Numbers to 20

Counting and writing numbers to 20

➜ pages 136–138

1. a) There are 11.
b) There are 12.
c) There are 16.

2. Children should have added counters to show 13 altogether, preferably showing this as 10 and 3.

3. thirteen, fourteen, fifteen

4. From left to right: 15, 16, 17

5. Missing numbers from left to right:
a) 12, 13
b) 14, 17
c) 9, 10
d) 16

6. Children could have explained Anna's mistake in different ways, e.g.
The number between fifteen and seventeen is called 'sixteen'.
Counting in ones, the number after 15 is 16.

Reflect

Children could have completed their reflection in different ways, e.g.

Today I have learnt to count backwards from 20 to 10.

Today I have learnt how to write the word fifteen.

Tens and ones (I)

➜ pages 139–141

1. a) There is 1 ten and 4 ones. There are 14 sweets.
b) There is 1 ten and 7 ones. There are 17 sweets.

2. Children should have drawn 16 counters into the ten frames (10 and 6). There is 1 ten and 6 ones.

3. Children should have matched:
1 ten and 2 ones ➜ middle set of ten frames
1 ten and 7 ones ➜ bottom set of ten frames
1 ten and 5 ones ➜ top set of ten frames

4. a) 1 ten and 6 ones = 16
b) 19 = 1 ten and 9 ones
c) 10 = 1 ten and 0 ones
d) 20 = 2 tens
e) 0 tens and 7 ones = 7

5. 13 = 1 ten and 3 ones

Reflect

The answer will depend on the number children have chosen, e.g.

My number (fifteen) = 1 ten and 5 ones. 15 counters drawn.

My number (nine) = 0 tens and 9 ones. 9 counters drawn.

Tens and ones (2)

➜ pages 142–144

1. 1 ten and 3 ones = 13
10 + 3 = 13

2. 1 ten and 2 ones = 12
10 + 2 = 12

3. a) Children should have circled 1 bundle of ten straws and 7 single straws.
b) Children should have circled 1 complete ten frame and 9 further counters.
c) Children should have drawn 11 counters into the ten frames (preferably 10 and 1).

4. Children should have matched the number sentences as follows:
10 + 8 ➜ 18
10 + 10 ➜ 20
10 + 2 ➜ 12
10 + 0 ➜ 10

5. 18. Children may have crossed off one counter in one frame and drawn one into the other frame to show 10 + 8.

6. Children should have identified that the statement is false and corrected the number sentence to 16 = 10 + 6 or 16 = 1 ten + 6 ones.

Reflect

There are many possible answers, e.g.

15 = 10 + 5, 15 = 1 ten + 5 ones, 15 = 5 + 10, 15 = 7 + 8, 15 = 20 – 5, and fifteen.

Counting one more, one less

➜ pages 145–147

1. 13

2. a) Children should have shown 18 on the number line.
b) Children should have shown 16 on the number line.

3. a) 14
b) 12
c) 20
d) sixteen

© Pearson Education 2020

4. a) 11
b) 15
c) 19
d) fourteen

5. 11

6. a) less
b) more
c) more

7. There are many possible answers. The number in the right-hand box will be 2 greater than the number in the left-hand box, e.g.
1 more than 7 is 1 less than 9.
1 more than 15 is 1 less than 17.

Reflect

There are many possible answers. The numbers will go up by 1 from left to right, e.g. 3, 4, 5 or 19, 20, 21.

Comparing numbers of objects

→ pages 148–150

1. a) Kai
b) 12 > 9

2. a) Lena
b) 6 < 11

3. a) Dan
b) 12 > 11 or 11 < 12

4. a) Neither, both have 9 blocks.
b) 9 = 9

5. Children should have drawn at least 6 more sweets for Joe.

Reflect

Children could have explained how to compare numbers of objects in many different ways, e.g.

Match objects up in lines underneath each other and see which line is longer.

Count objects and check which number is greater using a number line.

Comparing numbers

→ pages 151–153

1. a) greater than
b) less than
c) greater than
d) less than

2. a) 15 > 13
b) 17 < 19
c) 10 + 5 > 10 + 4
d) 3 < 13
e) 19 > 5

3. 15, 18

4. 10, 6, 11, 2

5. a) 18
b) 19
c) 20

6. Children could have written any number greater than 12 in the box.

7. Answers from top to bottom: 20, 12, 15

8. 12 < 13 or 13 > 12

Reflect

There are many possible answers, e.g.

1 < 5 and 10 > 8

0 < 6 and 9 > 7

Ordering objects and numbers

→ pages 154–156

1. a) 20, 14, 6
b) 20
c) 6

2. 8, 10, 15

3. 15, 12, 9

4. a) The smallest number is 4.
b) The largest number is 14.
c) 14, 9, 4

5. a) Jo
b) Kat

6. 12 < 17 < 20

7. There are many possible answers such that Bilal has more than 14 sweets and Sam has more than Bilal, e.g.
Bilal 15, Sam 16
Bilal 20, Sam 25

Reflect

9, 16, 18 (smallest to largest) and 18, 16, 9 (largest to smallest)

End of unit check

→ pages 157–158

My journal

Children should recognise that the ten frames contain 15 counters, so the 13 card does not match.

© Pearson Education 2020

Power puzzle

There are many possible answers. The numbers in the left-hand column must be 9, 10 and 11 from top to bottom. The numbers in the right-hand column must be 19, 18 and 17 from top to bottom. Numbers in the middle column, from top to bottom are: any number between 9 and 19, any number between 10 and 18, any number between 11 and 17 (where any number can only be used once), e.g.

9 < 12 < 19
10 < 13 < 18
11 < 14 < 17
or
9 < 18 < 19
10 < 12 < 18
11 < 15 < 17

© Pearson Education 2020