Unit 6 – Numbers to 20

1 Count to 20

→ pages 8–11

Discover

1. a) Children should count as a class from 1 to 20.
b) There are 15 children in the class.

Think together

1. 9, 10, 11, **12**, **13**, **14**, **15**, **16**, **17**, **18**, **19**, **20**

2. There are 18 ladybirds.

3. a) 8, 9, **10**, 11, 12, **13**, **14**, 15
b) 12, 13, **14**, **15**, **16**, **17**, **18**, **19**
c) 20, 19, 18, **17**, **16**, **15**, **14**, **13**

2 Understand 10

→ pages 12–15

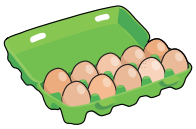
Discover

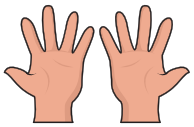
1. a) Children should know there are 10 counters without counting because the ten frame is full.
b) There are various ways children could show 10, such as 10 fingers, two 5s on dice, a rod of 10 cubes.

Think together

1. Children should use cubes or counters to fill all 10 cells in the ten frame.

2. There are 10 beads on each row.
There are 10 white and 10 red beads.

3. a) 

b) 

c)

3 11, 12 and 13

→ pages 16–19

Discover

1. a) 10 eggs will fill the box.
b) There are 11 eggs on the tray.

Think together

1. There are 12 eggs.

2. The number 13 is shown.

3. Explanations will vary but should mention that a complete ten frame shows 10, with extra counters added on to 10.

4 14, 15 and 16

→ pages 20–23

Discover

1. a) There are 14 cars in the car park.
b) Children should show one complete 10 frame and another with 4 cells filled.

Think together

1. There are 15 cars.

2. a) Yes, the rekenrek shows 16: 10 + 6 = 16.
b) Yes, the rekenrek shows 16: 8 + 8 = 16.

3. a) 10 + 4 = **14**
b) 10 + **5** = 15
c) **10** + **6** = 16

5 17, 18 and 19

→ pages 24–27

Discover

1. a) The children have made the number 17: 10 + 7 = 17.
b) Children should show 1 complete ten frame plus 8 in the second ten frame: 10 + 8 = 18.
Children should show 1 complete ten frame plus 9 in the second ten frame: 10 + 9 = 19.

Think together

1. a) 18 = 9 + 9
b) 17 = 10 + 7

2. Both children are correct: 1 fewer than 20 is 19 and 10 + 9 = 19.

3. 10 + 1 = **11**
10 + 2 = **12**
10 + 3 = **13**
10 + 4 = **14**
10 + 5 = **15**
10 + 6 = **16**
10 + 7 = **17**
10 + 8 = **18**
10 + 9 = **19**
All answers have 1 ten.
The number of ones is different each time.

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6 Understand 20

➜ pages 28–31

Discover

1. a) Both children are showing 10 fingers.
10 + 10 equals 20 in total.
b) Children should show 2 full ten frames.

Think together

1. Yes, 2 full ten frames show 20.

2. The top rekenrek shows 20 = 10 + 10.
The bottom rekenrek show 19 = 10 + 9.

3. There are various ways children could show 20 in addition to those shown on the page, such as 20 fingers or 2 full ten frames.

7 One more and one less

➜ pages 32–35

Discover

1. a) There are 12 children in the line.
Children should show 1 complete ten frame plus 2 counters in a second ten frame.
b) If one more child joins, there are now 13 children in the line.
Children should show 1 complete ten frame plus 3 counters in a second ten frame.

Think together

1. a) One more than 14 is **15**.
b) One more than 17 is **18**.

2. a) One less than 17 is **16**.
b) One less than 11 is **10**.

3. a) 1 more than 15 is **16**.
b) 1 more than 19 is **20**.
c) 1 less than 13 is **12**.

8 The number line to 20

➜ pages 36–39

Discover

1. a) The next two shirts will be numbers 14 and 15.
b) 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Think together

1. Children should point to each number card as they count up from 1 to 20.

2. Children should point to each number on the number line as they count up from 11 to 20.

3. Children should continue the horizontal number line, counting up:
0, 1, 2, 3, 4, 5, 6, **7**, **8**, **9**, **10**, **11, 12**, **13**, **14**, **15**, **16**, **17**, **18**, **19**, **20**.
Children should continue the vertical number line, counting back:
20, 19, 18, 17, 16, 15, **14**, **13**, **12**, **11**, **10**, **9**, **8**, **7**, **6**, **5**, **4**, **3**, **2**, **1**, **0**.

9 Label number lines

➜ pages 40–43

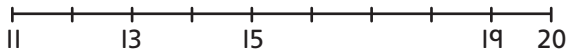
Discover

1. a) 15 and 16 are the wrong way around.
b) 14, 17 and 19 are the missing numbers.

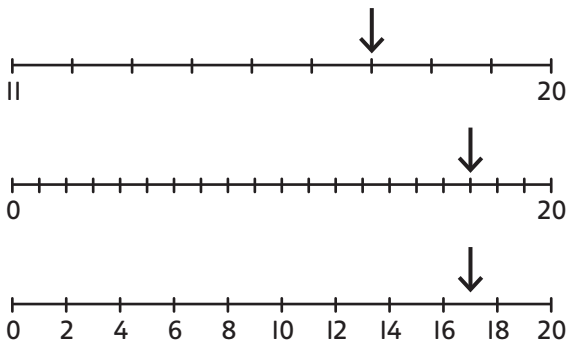
Think together

1. a) 12, 15 and 18 are the missing numbers.
b) 5, 8, 11 and 14 are the missing numbers.

2.



3.



10 Estimate on a number line

➜ pages 44–47

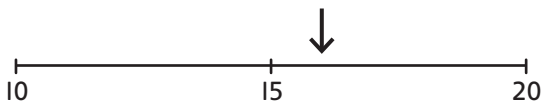
Discover

1. a)

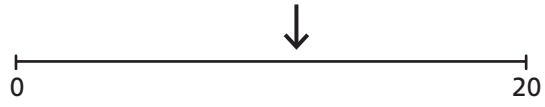
b)

Think together

1. a)



b)



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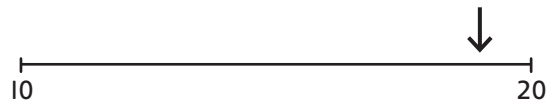
2. A is approximately 5.
B is approximately 11.
C is approximately 15.

3. a)

b)



11 Compare numbers to 20

➜ pages 48–51

Discover

1. a) Jack has 14 marbles.
Kendi has 11 marbles.
b) Jack has more marbles than Kendi.

Think together

1. a) Roz has fewer.
b) Meg has fewer.

2. Space Fun has more votes.

3. a) 15 is the smaller number: 15 < 19.
b) 20 is the larger number: 20 > 9.
Children should use a variety of ways to prove their answers.

12 Order numbers to 20

➜ pages 52–55

Discover

1. a) 5 < 15 < 16
b) Cal has the most sweets.

Think together

1. **12** is less than **16**.
16 is less than **19**.
12 < 16 < 19

2. 13 < 14 < 16

3. Children could put 14, 15 or 16 in the top two boxes.
Children could put 18, 19 or 20 in the bottom box.

End of unit check

➜ pages 56–57

1. B

2. D

3. B

4. A

5. C

Think!

The word thirteen is the odd one out because all the others show 15.

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Unit 7 – Addition and subtraction within 20

1 Add by counting on within 20

→ pages 60–63

Discover

1. a) There are 8 children on the bus.
b) There are 11 children in total.

Think together

1. a) 6 + 2 = **8**
b) 9 + 2 = **11**
c) 12 + 2 = **14**

2. a) 6 + 3 = **9**
b) 7 + 7 = **14**
c) 9 + 4 = **13**
d) 12 + 3 = **15**

3. a) 3 + 9 = **12**
b) 2 + 9 = **11**
3 + 14 = **17**
2 + 16 = **18**

2 Add ones using number bonds

→ pages 64–67

Discover

1. a) There are 12 pairs of scissors.
b) There are now 15 pairs of scissors.

Think together

1. 5 + 4 = **9**
15 + 4 = **19**

2. a) 3 + 2 = **5**
13 + 2 = **15**
b) 4 + 3 = **7**
14 + 3 = **17**

3. Possible solutions are:
a) 1**0** + **8**, 1**1** + **7**, 1**2** + **6**, 1**3** + **5**, 1**4** + **4**, 1**5** + **3**, 1**6** + **2**, 1**7** + **1**, 1**8** + **0**
b) 1**0** + **5**, 1**1** + **4**, 1**2** + **3**, 1**3** + **2**, 1**4** + **1**, 1**5** + **0**

3 Find and make number bonds to 20

→ pages 68–71

Discover

1. a) There are 10 red cubes.
There are 10 yellow cubes:
10 + 10 = 20
There are 20 cubes altogether.
b) Various answers are possible. For example, **Share** shows 17 + 3 = 20.

Think together

1. 14 + 6 = 20

2. 2 + 8 = 10
12 + 8 = 20
2 + 18 = 20

3. a) 1 + **19** = 20
2 + **18** = 20
3 + **17** = 20
11 + **9** = 20
12 + **8** = 20
13 + **7** = 20
11 + 9 = 20
1 + 19 = 20
b) The bonds to 20 are: 1 + 19, 2 + 18, 3 + 17, 4 + 16, 5 + 15, 6 + 14, 7 + 13, 8 + 12, 9 + 11, 10 + 10, 11 + 9, 12 + 8, 13 + 7, 14 + 6, 15 + 5, 16 + 4, 17 + 3, 18 + 2 and 19 + 1.

4 Doubles

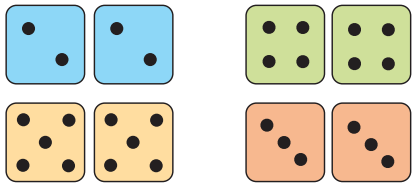
→ pages 72–75

Discover

1. a) There are 2 fingers in total.
b) Children should find the following doubles:
1 + 1 = 2, 2 + 2 = 4, 3 + 3 = 6, 4 + 4 = 8 and 5 + 5 = 10.

Think together

1. a)



b) 2 + 2 = 4
5 + 5 = 10
4 + 4 = 8
3 + 3 = 6

2. 6 + 6 = **12**

3. 6 + 6 = **12**
8 + 8 = **16**
7 + 7 = **14**
9 + 9 = **18**

5 Near doubles

→ pages 76–79

Discover

1. a) Children should make two towers of 5 cubes. Then they should add one more cube to one of the towers to show one tower of 5 and one tower of 6.
5 + 5 = 10
5 + 6 = 11
b) 3 + 3 = 6
3 + 4 = 7

Think together

1. 2 + 3 = **5**
4 + 5 = **9**

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2. 1 + 1 = **2** 6 + 6 = **12** 9 + 9 = **18**
1 + 2 = **3** 6 + 7 = **13** 9 + 10 = **19**
2 + 1 = **3** 7 + 6 = **13** 10 + 9 = **19**

3. a) Counters should be placed on 10 for double 5 and 12 for double 6.
Children should notice that 5 + 6 = 11 is in between double 5 and double 6 on the number line.
b) 2 + 3 = **5** 6 + 5 = **11**
5 + 4 = **9** 9 + 8 = **17**
7 + 8 = **15** 8 + 9 = **17**

6 Subtract ones using number bonds

➜ pages 80–83

Discover

1. a) There are 15 footballs.
b) There are 12 footballs left.

Think together

1. a) 19 – 6 = **13**
b) 16 – 4 = **12**

2. 16 – 5 = **11**

3. a) 7 – 5 = **2**
17 – 5 = **12**
b) 8 – 3 = **5**
18 – 3 = 15
c) 7 – **7** = 0
17 – 7 = 10

7 Subtraction – count back

➜ pages 84–87

Discover

1. a) The teacher has 13 pencils.
b) 13 – 5 = 8
The teacher has 8 pencils left.

Think together

1. 11 – 2 = **9**

2. a) 12 – 3 = **9**
b) 14 – 1 = **13**
c) 15 – 7 = **8**

3. a) 18 – 10 = **8**
16 – 10 = **6**
15 – 10 = **5**
Children should notice that the 1s digit does not change.
b) 18 – 15 = **3**

8 Subtraction – finding the difference

➜ pages 88–91

Discover

1. a) There are 2 more children in the back row.
b) There are 2 fewer children in the front row.

Think together

1. 6 – 5 = 1. There is 1 more child in the front row.

2. 10 – 2 = 8. There are 8 fewer counters.

3. a) Amy and Danny's methods work but are time consuming.
Hassan's method is the quickest and easiest.
15 – 14 = 1
b) 13 – 11 = **2**
17 – 16 = **1**
20 – 17 = **3**

9 Related facts

➜ pages 92–95

Discover

1. a) 8 + 10 = 18
b) 13 + **7** = 20
7 + 13 = 20

Think together

1. 6 + 4 = **10**
4 + 6 = **10**
10 – 4 = **6**
10 – 6 = **4**

2. 12 + **3** = 15
3 + **12** = 15
15 – **3** = **12**
15 – **12** = **3**

3. a) Children should show 1 complete ten frame and 1 ten frame with 4 counters.
Children should show 10 beads and 4 beads on a bead string.
b) 8 + 6 = 14
6 + 8 = 14
14 – 6 = 8
14 – 8 = 6
These can be repeated with the answers first.

10 Missing number problems

➜ pages 96–99

Discover

1. a) 4 + **2** = 6
b) **5** + 1 = 6

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Think together

1. 11 + **9** = 20
9 + **11** = 20
11 + 9 = **20**
20 – **9** = 11
20 – **11** = 9

2. 6 + **3** = 9
6 + **5** = 11
12 – **4** = 8
12 – 8 = **4**

3. a) The missing number is 10.
3 + 7 = **10**
7 + 3 = **10**
10 – 3 = 7
10 – 7 = 3

The missing number is 2.
9 + **2** = 11
2 + 9 = 11
11 – **2** = 9
11 – 9 = **2**

b) 5 + **4** = 9 **13** – 5 = 8
13 + 4 = 17 19 – **9** = 10

II Solve word and picture problems – addition and subtraction

➜ pages 100–103

Discover

1. a) 8 + 4 = 12
There are 12 ants in total.
b) 19 – 6 = 13
There are 13 more snails inside the log than on the log.

Think together

1. 14 – 6 = 8
There are 8 bees left in the hive.

2. 6 + 8 = 14
There are 14 spots altogether.

3. a) 17 – 12 = 5
There are 5 stars left in the box.
b) 17 – 12 = 5
There are 5 silver stars.
c) 17 – 12 = 5
There are 5 more stars than coins.
d) All of the questions are solved by the subtraction 17 – 12 = 5.

End of unit check

➜ pages 104–105

1. C

2. D

3. C

4. D

5. B

Think!

Various explanations are possible. Children should explain using number bonds to 10 and 20, and counting on or back using a number line.

= 3

= 17

= 18

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Unit 8 – Numbers to 50

I Count to 50

→ pages 108–111

Discover

1. a) Children should count the jars together from 1 to 30.
b) Children should count together from 30 to 50.

Think together

1. There are **28** ladybirds.

2. a) 23, 24, 25, **26**, **27**, **28**
b) 40, **41**, 42, 43, **44**
c) 28, **29**, **30**, 31, **32,** 33

3. When 1 sweet is taken out there are **49** left in the jar.
When another sweet is taken out there are **48** left in the jar.

2 Numbers to 50

→ pages 112–115

Discover

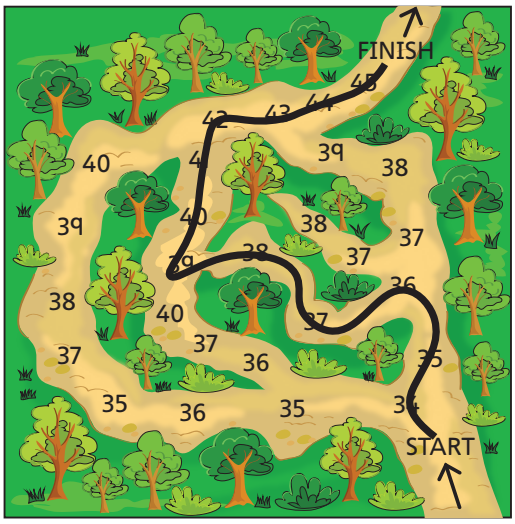
1. a) Children should count from 1 to 50.
b) The frogs are on numbers 8, 17, 26, 30 and 32.

Think together

1. The missing numbers are 16, 22, 40 and 43.

2. The missing numbers are:
a) 17
b) 23
c) 38, 41

3.



3 20, 30, 40 and 50

→ pages 116–119

Discover

1. a) Danny can fill 3 ten frames with 30 counters.
b) Meg can make 4 towers of 10 cubes with 40 cubes.

Think together

1. Kat has 50 straws.

2. a) 40
b) 50

3. Children should count 10, 20, 30, 40, 50.
Children should notice that the number of ten frames is the same as the tens digit.

4 Count by making groups of 10s

→ pages 120–123

Discover

1. a) You can fill 3 egg boxes.
b) There are 35 eggs in total.

Think together

1. There are 26 eggs in total.

2. There are 37 apples.

3. There are 46 balls.

5 Groups of 10s and 1s

→ pages 124–127

Discover

1. a) There are 25 cakes.
b) There are still 25 cakes: 20 inside the closed boxes and 5 on the shelf.

Think together

1. There are 42 eggs.

2. a) There are 31 marbles.
b) There are 28 pens.

3. Tim has made the number 34.

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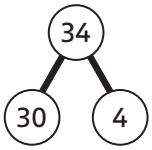
6 Partition into 10s and 1s

➜ pages 128–131

Discover

1. a) Children should show 34 on ten frames or using bead strings or by making 3 towers of 10 cubes and 4 single cubes.

b)

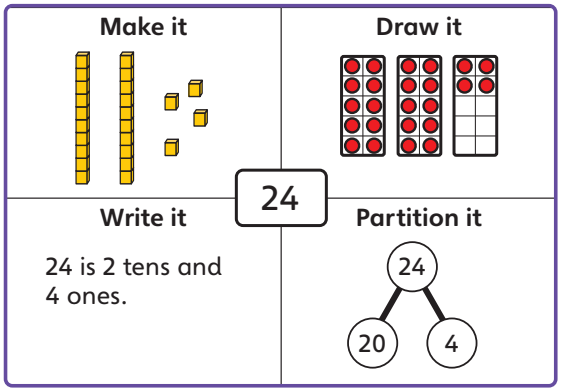


Think together

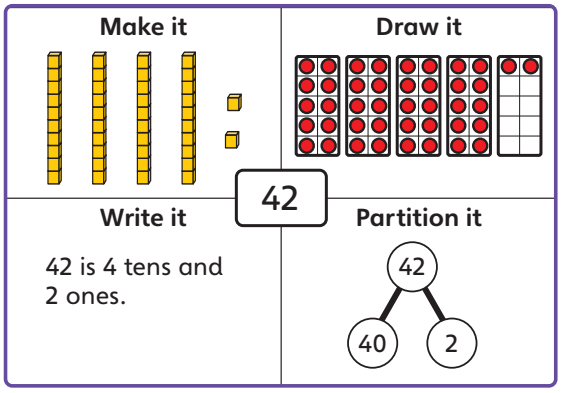
1. a) **2** tens and **3** ones is **23**.
b) **3** tens and **7** ones is **37**.

2. a) The parts are **20** and **6**.
b) The whole is **45**.

3. a) 24



b) 42



7 One more, one less

➜ pages 132–135

Discover

1. a) There are 34 rosettes on the wall.
b) One more than 34 is 35.

Think together

1. a) There are 28 coconuts.
b) When 1 coconut is knocked over, there are 27 coconuts left.

2. a) One more than 43 is 44.
b) One less than 43 is 42.

3. One more than 37 is **38**.
One more than 49 is **50**.
One less than 25 is **24**.

End of unit check

➜ pages 136–137

1. C

2. D

3. C

4. A

Think!

The parts are 30 and 2.

There are **3** tens.

There are **2** ones.

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Unit 9 – Introducing length and height

1 Compare lengths and heights

➜ pages 140–143

Discover

1. a) Anya is shorter than Myra.
Myra is taller than Anya.
b) Emily is higher, but she might not be taller. They would have to stand next to each other to check.

Think together

1. C is the longest.
B is the shortest.
A is longer than B.
A is shorter than C.
B is shorter than A and C.
C is longer than A and B.

2. Children should draw a flower in the third box that is taller than the flower in the middle box.

3. Children should find two real leaves to compare. They must use the comparatives longer/shorter and wider/thinner when comparing two items. The superlatives longest/shortest and widest/thinnest are only used when comparing 3 or more items.

2 Measure length (non-standard units of measure)

➜ pages 144–147

Discover

1. a) The fire engine is longer than the car.
b) The car is 4 cubes long.
The fire engine is 8 cubes long.

Think together

1. The doll is **8** cubes tall.
The teddy bear is **5** cubes tall.
The teddy bear is **shorter** than the doll.

2. The bed is **30** cubes long.
The chair is **15** cubes tall.

3. Children's answers will depend on the objects the children choose and on the size of the cubes used to measure.

3 Measure length (using a ruler)

➜ pages 148–151

Discover

1. a) The string that is 4 red cubes long is longer.
Both strings can be 4 cubes long because the red and yellow cubes are different sizes.
b) The plain string is 9 cm long.
The stripy string is 5 cm long.

Think together

1. The string is **7** cm long.

2. a) The ribbon is **5** cm.
b) The ribbon is **7** cm.
c) The ribbon is **9** cm.

3. Children's answers will depend on the objects the children choose.

4 Solve word problems – length

➜ pages 152–155

Discover

1. a) The length of is 7 cm.
b)

Think together

1. The total length of Kiko's straws is 16 cm.

2. The train on the left is 3 cm tall.

3. The difference in length is **5** cm.

End of unit check

➜ pages 156–157

1. C

2. B

3. C

4. B

Think!

The plain string is longer. It is curved, so when it is straightened out, it will be longer than the spotted string.

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Unit 10 – Introducing mass and capacity

1 Heavier and lighter

➜ pages 160–163

Discover

1. a) The pineapple is heavier.
b) The toothpaste is lighter.

Think together

1. The can of soup is **lighter** than the can of tomatoes.
The can of tomatoes is **heavier** than the can of soup.

2. Children should point to the heavier item on each scale. They should notice that the heavier item is always lower.
The last scale balances so the items are the same weight.

3. Maria is correct. The balloon will go up because it is lighter.
Not all bigger items are heavier (Sam and Katie).
Not all smaller items are lighter (Hassan).
The heavier item will go down on a balance scale (Hassan).

2 Measure mass

➜ pages 164–167

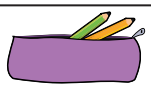
Discover

1. a) Hiro is correct. His book balances 10 cubes.
Joe should have used cubes of the same size to balance his book.
b) Lucy needs fewer cubes than Hiro because she is using heavier cubes.

Think together

1. The shoe has a mass of **5** cubes.
The shoe has a mass of **3** bean bags.
The shoe has a mass of **9** crayons.

2.

Object	Mass in
	8
	12
	10
	1

3. car + book = 6 + 5 = 11 cubes
10 cubes = 4 + 6 = teddy + car
10 cubes = 5 + 5 = book + book
book + 1 cube = 6 cubes = car

3 Compare mass

➜ pages 168–171

Discover

1. a) The box of chocolate bars goes on the top shelf.
The box of cans goes on the bottom shelf.
b) The order from heaviest to lightest is: box of cans, box of bananas, box of chocolate bars.

Think together

1. a) The bag of pears is heavier than **the bag of apples**.
b) The bag of apples is **lighter** than the bag of pears.
c) The bag of bananas is equal to **the bag of pears**.

2. The teddy is the lightest (5 cubes) so it goes on the top shelf.
The horse is the heaviest (10 + 5 = 15 cubes) so it goes on the bottom shelf.
The car goes in the middle (5 + 5 = 10 cubes).

3. Red truck = Blue + Yellow trucks
Red truck = 12 cubes
Blue is heavier than 4 cubes.
Yellow is lighter than 8 cubes.
There are various combinations for blue and yellow but they must add up to 12:

Blue	5	6	7	8	9	10	11
Yellow	7	6	5	4	3	2	1

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4 Full and empty

→ pages 172–175

Discover

1. a) This glass is full:

This glass is empty:

b) Molly wants this glass:

Think together

1. E, D, A, C, B

2. holds more.

3. Fred

Molly

Sam

No one would like

5 Measure capacity

→ pages 176–179

Discover

1. a) Children should estimate about 10 cups of sand will fill the bucket.
b) Children should estimate about 3 spades of sand will fill the bucket.

Think together

1. 4 + 5 = 9
9 spoons fill the bucket.

2. Children should complete the table to show: 4 bowls, 15 plain cups, 12 striped cups.

3. Mrs Hodge and Mrs Shaw are right. Mr Chabra's jug holds more than 6 glasses.

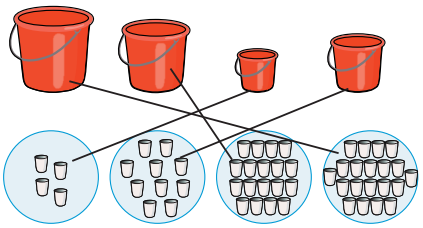
6 Compare capacity

→ pages 180–183

Discover

1. a) **C** is filled by 2 cups. **A** filled by 15 cups.
B is filled by 5 cups
b) The order from greatest to smallest capacity is: A, B, C.

Think together

1. 

2. The order from greatest to smallest capacity is: spotted jug, plain jug, jar.

3. The order from smallest to greatest capacity is: A, C, B.

7 Solve word problems – mass and capacity

→ pages 184–187

Discover

1. a) There are **4** glasses left in the jug.
b) There will be **16** glasses in the bowl.

Think together

1. **8 + 6 = 14**
There are **14** cups of rice in the pan.

2. **11 – 7 = 4**
A small box weighs the same as **4** cubes.

3. a) 3 × 2 = 6. 6 sheep balance 1 horse.
b) 3 – 1 = 2. 2 cats balance 1 goose.

End of unit check

→ pages 188–189

1. D

2. C

3. A

4. D

Think!

10 glasses is double 5 glasses, so will weigh double the number of blocks.

5 glasses weigh 8 blocks, so 10 glasses weigh 8 + 8 = 16 blocks.

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