Unit 5 – Money

1 Count money – pence

→ pages 8–11

Discover

1. a)

b) Tray A has 12p.
Tray B has 30p.
Tray C has 33p.

Think together

1. a) 35p
b) 18p
c) 50p

2. a) 36p
b) 26p

3. Children should discuss counting coins with the highest value first, and grouping coins of the same value together.
The first tray has **70p**.
The second tray has **43p**.

2 Count money – pounds (notes and coins)

→ pages 12–15

Discover

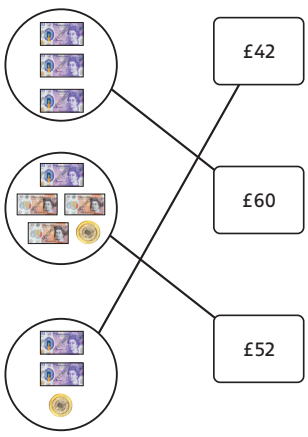
1. a) The blue note is worth £5.
The brown note is worth £10.
b) Lia has raised £45 in total.

Think together

1. a) £30
b) £16
c) £40

2. a) £34
b) £64

3.



3 Count money – pounds and pence

→ pages 16–19

Discover

1. a)

b) Myra has saved £16 and 32p.

Think together

1. There is £15.
There is 56p.
Together there is **£15** and **56p**.

2. There is **£25**.
There is **26p**.
Together there is **£25** and **26p**.

3. Eddie has mistaken the £1 coin for another £2 coin and the 2p coin for a 1p coin. Eddie has £9 and 52p.

4 Choose notes and coins

→ pages 20–23

Discover

1. a) Will needs

b) Gemma needs

Think together

1. To make 64p you need: **50p**, **10p**, **2p**, **2p**.

2. To make £41 you need: **£20**, **£10**, **£5**, **£5**, **£1**.

3. a) To make £11 and 22p you need: **£10**, **£1**, **20p**, **2p**.
b) There are several possible answers. Using the fewest number of notes and coins:
£25 and 70p: £20, £5, 50p, 20p
£15 and 15p: £10, £5, 10p, 5p
£33 and 68p: £20, £10, £2, £1, 50p, 10p, 5p, 2p, 1p
£21 and 1p: £20, £1, 1p.

5 Make the same amount

→ pages 24–27

Discover

1. a) Emily can pay with

Charlie can pay with

b) Various other combinations are possible, for example:
20p + 20p + 20p + 5p
50p + 5p + 5p + 2p + 2p + 1p

Think together

1. Gemma: 20p + 20p + 20p + 10p + 5p
Amal: 50p + 5p + 5p + 5p + 5p + 2p + 2p + 1p

2.

3. There are many possible answers, for example:
50p + 20p + 10p
50p + 20p + 5p + 5p
50p + 10p + 10p + 10p
20p + 20p + 20p + 20p
20p + 20p + 20p + 10p + 5p + 5p.

6 Compare amounts of money

➜ pages 28–31

Discover

1. a) Stall A made **£11**.
Stall B made **£10**.
b) Stall **A** made more money because £11 > £10.

Think together

1. a) £47 **>** £37
b) £1 and 18p **<** £1 and 23p

2. a) £1 £10 + £2
£26 < **£27**
b) 10p 20p
85p = **85p**

3. a) £11 and 15p **>** £5 and 15p
b) £1 **=** 100p

7 Calculate with money

➜ pages 32–35

Discover

1. a) Myra spends £40 + £8 = **£48**.
b) £18 + £8 = **£26**
Milo buys a cricket bat and a jacket.

Think together

1. The total cost is £20 + £15 = **£35**.

2. Marie spends £12 + £45 = **£57** in total.

3. a) A pen and pencil cost a total of **65p**.
b) The difference in price between the eraser and the pencil is 29p – 25p = **4p**.
c) Zack needs 50p – 20p = **30p** more.

8 Make £1

➜ pages 36–39

Discover

1. a) There are **one hundred** 1p coins. This is £1.
b) **Ten** 10p coins makes £1.

Think together

1. **Reena** and **Jon** both have exactly £1.

2. Various answers are possible:
50p + 50p
50p + 20p + 20p + 10p
50p + 20p + 10p + 10p + 5p + 5p
50p + 20p + 20p + 5p + 5p

3. Various answers are possible. Using the fewest number of coins:
30p + **50p** + **20p**
70p + **20p** + **10p**
20p + **50p** + **20p** + **10p**
45p + **50p** + **5p**
95p + **5p**
75p + **20p** + **5p**
98p + **2p**
83p + **10p** + **5p** + **2p**
51p + **20p** + **20p** + **5p** + **2p** + **2p**.

9 Find change

➜ pages 40–43

Discover

1. a) Hassan should pay with his **£1** coin.
b) He will receive **5p** change.

Think together

1. a) 40p – 30p = **10p**
b) 50p – 30p = **20p**
c) £1 – 30p = **70p**

2. a) £20 – £10 = **£10**
b) £20 – £5 = **£15**
c) £20 – £17 = **£3**

3. a) Various answers are possible:
50p + 10p and 8p change
50p + 20p and 18p change
50p + 5p and 3p change.
b) Various answers are possible:
£10 + £5 + £5 and £2 change
£5 + £5 + £5 + £5 and £2 change.

10 Two-step problems

➜ pages 44–47

Discover

1. a) The total cost is £5 + £8 = **£13**.
b) Miss King will get £20 – £13 = **£7** change.

Think together

1. £8 + £3 = £11
£15 – £11 = £4
Alfie will get **£4** change from £15.

2. £8 + £5 + £5 = £18
£20 – £18 = £2
£2 < £3
Maria **does not** have enough money to buy the £3 popcorn.

3. 50p – 20p = 30p
50p + 30p = 80p
James spends **80p** in total.

End of unit check

➜ pages 48–49

1. A

2. B

3. A

4. A

Think!

False. Five 2p coins are equal to one 10p coin.

Unit 6 – Multiplication and division (I)

I Recognise equal groups

➜ pages 52–55

Discover

1. a) Yes, the cakes are in 2 equal groups of 6.
Yes, the buns are in 5 equal groups of 2.
b) No, the cookies are not in equal groups. There are 5 cookies in 2 of the groups and 3 cookies in another group.

Think together

1. a) There are **4** equal groups of **3**.
b) There are **4** equal groups of **5**.

2. a) There are 2 equal groups of 3 buns.
b) There are 6 equal groups of 2 apples.
c) The towers are not in equal groups.

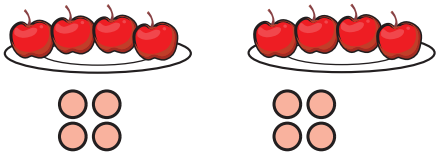
3. James has 5 groups of 5 bagels and 1 group of 4 bagels. He does not have equal groups.
Hannah has 4 groups of 4 buns. Hannah does have equal groups.

2 Make equal groups

➜ pages 56–59

Discover

1. a) There are 2 equal groups of 4 apples.



b) Gita could make 4 equal groups of 2 apples.

Think together

1. Children should make 2 groups with 5 cubes in each group.

2. With 12 counters children can make the following groups: 1 group of 12 counters; 2 groups of 6 counters; 4 groups of 3 counters; 6 groups of 2 counters and 12 groups of 1 counter.

3. a) Move one cube from the first to the second group to make 2 groups of 5 cubes.
b) There are 9 children altogether. Change the groups to 3 groups of 3 children.

3 Add equal groups

➜ pages 60–63

Discover

1. a) There are **5** equal groups of **2** flowers.
b) 2 + 2 + 2 + 2 + 2 = 10
There are **10** flowers.

Think together

1. 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = **20**
There are **20** cakes.

2. a) 3 + 3 + 3 = **9**.
There are **9** balls.
b) 5 + 5 + 5 + 5 = **20**
There are **20** apples.

3. a) 10 + 10 + 10 = **30**
Hassan has baked **30** cookies.
b) 30 + 10 = 40 (10 + 10 + 10 + 10 = 40)
Hassan and Toshi baked **40** cookies in total.

4 The × sign

➜ pages 64–67

Discover

1. a) 5 + 5 + 5 = **15**
b) 3 × 5 = **15**

Think together

1. a) 10 + 10 + 10 + 10 = **40**
4 × 10 = **40**
b) 3 + 3 + 3 + 3 + 3 = **15**
3 × 5 = **15**

2. Henry is not correct because there aren't 4 equal groups with 3 birds in each group. There are 3 groups of 3 birds and 1 group of 2 birds.

3. a) 6 × 2 = 12 or 2 + 2 + 2 + 2 + 2 + 2 = **12**
There are **12** chairs.
b) 4 × 3 = 12 or 3 + 3 + 3 + 3 = **12**
There are **12** chairs.

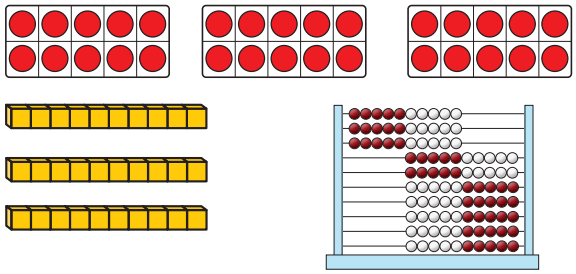
5 Multiplication sentences

→ pages 68–71

Discover

1. a) **4** × **5** = **20**

b) Children should show 3 × 10 using different maths equipment, such as ten frames, base 10 equipment and a rekenrek.



Think together

1. a) 5 × 10 = 50

b) 2 × 6 = 12

c) 3 × 5 = 15

2. Children should use counters or drawings to show 2 groups of 5 counters and 4 groups of 3 counters.

3. a) 6 × 5 = 30

b) 6 × 2 = 12

c) 6 × 10 = 60

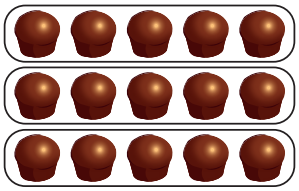
Children should recognise that the number of groups is the same each time, but the number of items in each group changes.

6 Use arrays

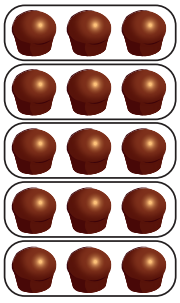
→ pages 72–75

Discover

1. a) This array shows 3 groups of 5.



This array shows 5 groups of 3.



b) 3 groups of 5 shows 3 × 5 = 15.

5 groups of 3 shows 5 × 3 = 15.

Think together

1. a) Children should circle 2 groups of 6 stars:

Children should circle 6 groups of 2 stars:

b) 2 × 6 = 12

6 × 2 = 12

2. a) 10 × 5 = 50

5 × 10 = 50

b) There is only one multiplication for this array:

3 × 3 = 9.

3. a) Filip is correct.

Almost every array shows two multiplications.

The first array is showing 5 groups of 2, or 5 × 2.

The second array is showing 2 groups of 5, or 2 × 5.

They both give the answer of 10.

b) Children should create arrays to show 4 × 5 = 20 and 3 × 4 = 12.

7 Make equal groups – grouping

→ pages 76–79

Discover

1. a) There are **3** groups. 12 ÷ 4 = 3

b) There are **4** groups. 12 ÷ 3 = 4

Think together

1. a) Children should make 6 groups of 2.

b) There are 6 groups of 2.

c) 12 ÷ 2 = **6**

2. a) 3 bunches can be made.

b) **15** ÷ **5** = **3**

3.

Number in each group	Number of groups	Division sentence
2	10	20 ÷ 2 = 10
4	5	20 ÷ 4 = 5
5	4	20 ÷ 5 = 4
10	2	20 ÷ 10 = 2

8 Make equal groups – sharing

➜ pages 80–83

Discover

1. a) Children should draw 3 groups of 2 apples.
Each friend gets **2** apples.
b) Each friend gets **3** pears.

Think together

1. a) Each child will get **3** oranges.
b) 6 ÷ 2 = **3**

2. 10 ÷ **5** = **2**

3. In 8 ÷ 2 = 4, the 8 represents the number of apples, the 2 represents the number of friends or groups the apples are being shared between, and the 4 represents the number of apples each person in the group gets.

End of unit check

➜ pages 84–85

1. B

2. D

3. B

4. D

5. C

Think!

Ajay's statement is true as 5 cannot be equally divided between 2. There would be 1 left over.

Unit 7 – Multiplication and division (2)

1 2 times-table

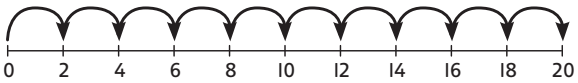
➜ pages 88–91

Discover

1. a) 3 × 2 = **6** ice cubes are needed for 3 glasses.
b) 8 × 2 = **16** ice cubes are needed for 8 glasses.

Think together

1. 10 × 2 = **20** ice cubes are needed for 10 glasses..



2. 7 × 2 = 14 or 2 × 7 = 14

3. a) 11 × 2 = **22** ice cubes
b) 12 × 2 = **24** ice cubes

2 Divide by 2

➜ pages 92–95

Discover

1. a) There are 4 groups of 2.
b) 8 ÷ 2 = **4**

Think together

1. 10 ÷ 2 = **5** plates

2. 12 ÷ 2 = **6** cubes

3. 18 ÷ 2 = **9** 20 ÷ 2 = **10**

3 Double and halve

➜ pages 96–99

Discover

1. a) Zac will move **10** spaces.
b) Anya must have rolled **double 6**.

Think together

1. a) 2
b) 4
c) 6
d) 8
e) 10
f) 12

2. a) 8 × 2 = **16**
b) 9 × 2 = **18**

3. a) 14 × 2 = **28**
b) 6 ÷ 2 = **3**
16 ÷ 2 = **8**
26 ÷ 2 = **13**

4 Odd and even numbers

➜ pages 100–103

Discover

1. a) The plain socks can be sorted into pairs with none left over.
b) 8, 10 and 12 socks can be sorted into pairs with none left over.
9 and 11 socks can't be sorted into pairs with none left over.

Think together

1. a) 14 is even.
b) 15 is odd. The counters can't be put into pairs with none left over.

2. Odd numbers: 9, 11, 17, 25, 33
Even numbers: 10, 16, 20, 32

3. Even numbers: 2, 4, 6, 8, 10, 12, 14, 16, etc.
Children should notice that the counters line up in columns. Children may notice that the even numbers have an even final digit.

5 10 times-table

➜ pages 104–107

Discover

1. a) There are **30** stickers on 3 sheets.
b) Jamal has **60** stickers in total.

Think together

1. 7 × 10 = **70** stickers on 7 sheets

2. a) There are **40** counters in the array.
b) 10 × 4 = 40 or 4 × 10 = 40

3. 1 × 10 = **10**
2 × 10 = **20**
3 × 10 = **30**
4 × 10 = **40**
5 × 10 = **50**
6 × 10 = **60**
7 × 10 = **70**
8 × 10 = **80**
9 × 10 = **90**
10 × 10 = **100**
11 × 10 = **110**
12 × 10 = **120**

6 Divide by 10

➜ pages 108–111

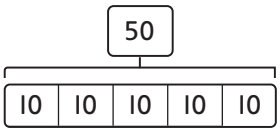
Discover

1. a) There are **3** packs of 10 pens.
b) 3 × 10 = 30, so 30 ÷ 10 = **30**.

Think together

1. 40 ÷ 10 = **4** packs

2. a) 50 ÷ 10 = **5**



b) 60 ÷ 10 = **6**
80 ÷ 10 = **8**
100 ÷ 10 = **10**

3. a) Each friend gets **10** 5p coins.
b) 10 × 5p = 50p
Each friend gets 50p.

7 5 times-table

➜ pages 112–115

Discover

1. a) There are **3** teams.
There are **5** players in each team.
There are **15** players in total.
b) **3 × 5 = 15**. There are 3 groups, there are 5 players in each group and there are 15 players in total.

Think together

1. 4 × 5 = **20**

2. a) 5 × 5 = **25** counters
b) 6 × 5 = **30** counters

3.
1 × 5 = **5**
2 × 5 = **10**
3 × 5 = **15**
4 × 5 = **20**
5 × 5 = **25**
6 × 5 = **30**
7 × 5 = **35**
8 × 5 = **40**
9 × 5 = **45**
10 × 5 = **50**
11 × 5 = **55**
12 × 5 = **60**

8 Divide by 5

➜ pages 116–119

Discover

1. a) You can make **4** flowers with 20 red petals.
b) 4 × 5 = 20, so 20 ÷ 5 = **4**.

Think together

1. 25 ÷ 5 = **5** flowers

2. 30 ÷ 5 = **6** counters
35 ÷ 5 = **7** counters
40 ÷ 5 = **8** counters

3. Children should colour all the numbers in the 5 times-table. They should notice that the number have a final digit of 5 or 0 and that they are in 2 columns in the 100 square.

9 Bar modelling – grouping

➜ pages 120–123

Discover

1. a) 40 ÷ 10 = 4. **4** trays are needed for 40 small drinks.
b) 35 ÷ 5 = 7. **7** trays are needed for 35 tall drinks.

Think together

1. 60 ÷ 10 = **6** trays

2. 21 ÷ 3 = **7** trays

3. a) 50 ÷ 10 = 5
She will need **5** boxes.
b) 50 ÷ 5 = 10
She will need **10** boxes.

10 Bar modelling – sharing

➜ pages 124–127

Discover

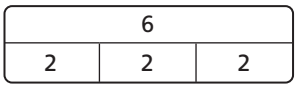
1. a) They get 12 ÷ 2 = **6** jewels each.
b) They get 15 ÷ 3 = **5** gems each.

Think together

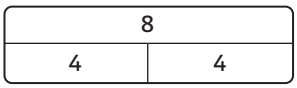
1. They get 18 ÷ 2 = **9** gold coins each.

2. They get 20 ÷ 4 = **5** gems each.

3. 6 ÷ 3 = 2



8 ÷ 2 = 4



Necklaces: 2 for each pirate with 2 left over.
Gold coins: 6 for each pirate with none left over.
Red gems: 4 for each pirate with none left over.
Blue jewels: 5 for each pirate with none left over.
Green jewels: 2 for each pirate with none left over.

End of unit check

➜ pages 128–129

1. B

2. B

3. B

4. A

Think!

Numbers which give an odd answer when you divide by 5: 5, 15, 25, 35, 45, 55, 65, 75, 85, 95.

Only odd numbers have an odd answer when you divide by 5.

Numbers which give an odd answer when you divide by 10: 10, 30, 50, 70, 90.

Only odd numbers have an odd answer when you divide by 10.

Unit 8 – Length and height

1 Measure in cm

➜ pages 132–135

Discover

1. a) The pencil is **10** cm long.
b) The **paper clip** and the **rubber** are both 5 cm long.

Think together

1. a) 3 cm, 10 cm, 9 cm
b) Children should accurately measure each line, starting at 0 cm: 8 cm, 6 cm, 4 cm.

2. Using a ruler, children should accurately draw straight lines that are 8 cm, 2 cm and 11 cm long.

3. Danny is not correct; the van starts at 2 cm not 0 cm, so it is actually 7 cm long.
Eddie is correct; the leaf does not start at 0 cm, but Eddie has taken this into account.

2 Measure in m

➜ pages 136–139

Discover

1. a) Kara and Tariq must measure the **length** of the classroom and the length of the bus.
b) They also need to measure the **height** and **width** of the classroom and the bus.

Think together

1. a) Children should accurately measure the height of the classroom door. They should state that if it is greater than 3 m, then the man would fit through.
b) Children should accurately measure the length of the school hall. They should state that if it is greater than 18 m, then the hall would be long enough.
c) Children should use a sensible method to measure the distance from the classroom to the hall.

2. a) 2m **<** 20 m
b) 9 m **>** 9 cm
c) 100 cm **=** 1 m

3. Children's answers will vary. Children should pay attention to units and understand that anything up to 100 cm tall should go in 'Shorter than 1 m'.

3 Compare lengths and heights

➜ pages 140–143

Discover

1. a) The tooth is **30 cm** long.
b) The bone is 80 cm long and the tooth is 30 cm long, so the bone is longer than the tooth.

Think together

1. The **30 cm long bone** is shorter.

2. a) 75 cm **>** 57 cm
b) 20 cm **<** 2 m
c) 50 cm **=** 50 cm

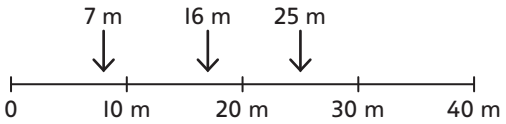
3. a) Children's answers will vary. Children could use a 1 m stick.
b) Children's answers will vary.

4 Order lengths and heights

➜ pages 144–147

Discover

1. a)



b) Shortest to longest: 7 m, 16 m, 25 m.

Think together

1. Longest to shortest: 20 m, 12 m, 5 m.

2. a) Martha could have kicked the football 21 m, 22 m, 23 m or 24 m.
b) Shortest to longest: 25 m, 28 m, 35 m, 40 m.

3. Children's answers will vary.

5 Four operations with lengths and heights

➜ pages 148–151

Discover

1. a) The total length is 34 cm + 24 cm = **58 cm**.
b) 100 cm – 58 cm = **42 cm** of string is left.

Think together

1. 65 cm – 49 cm = **16 cm**

2. The other piece of string is **15 cm** long.

3. a) The total length is **20 m**.
b) **8** trucks are in the line.

End of unit check

➜ pages 152–153

1. D

2. B

3. C

4. D

Think!

Hassan is not correct. The pencil does not start at 0 cm, it starts at 2 cm, so it is 6 cm tall.

Unit 9 – Mass, capacity and temperature

1 Compare mass

➜ pages 156–159

Discover

1. a) The tent is the heaviest.
The sleeping bag is the lightest.
b) The mass of 3 sleeping bags is the same as **6** bottles of water.

Think together

1. a) The torch is lighter on the first scale and the mallet is lighter on the second scale.
b) Lightest to heaviest: torch, mallet, tent.

2. The mass of the mallet is **8** bottles.

3. a) Maria's bag is heaviest.
b) Jack's bag is lightest.

2 Measure in grams

➜ pages 160–163

Discover

1. a) The flour balances with the 100 g weight.
The salt balances with the 50 g weight.
b) 10 g + 25 g = 35 g
The mass of the flour is **35 g**.

Think together

1. Flour: 50 g + 10 g Salt: 25 g + 5 g

2. The heart has a mass of **35 g**.
The star has a mass of **70 g**.

3. The gingerbread man has a mass of **30** g.
The leaf has a mass of **15** g.

3 Measure in kilograms

➜ pages 164–167

Discover

1. a) **Anya** will need a stronger bag.
b) The mass of the bananas is **2 kg**.

Think together

1. a) **1** kg
b) **5** kg

2. The pineapple and the shopping bag probably weigh more than 1 kg.
The pencil and the book probably weigh less than 1 kg.

3. a) 3 kg c) 40 kg
b) 9 kg d) 77 or 78 kg

4 Compare volume and capacity

➜ pages 168–171

Discover

1 a) Pour one cone into the other cone or pour both cones into an identical container.
The cone with red triangles holds less.
The blue spotty cone holds more.
b) Children's answers will depend on the cones the children make.

Think together

1. **B** has the least tea left in it.
A has the most tea left in it.

2. 2 bottles would fill **10** glasses.
6 bottles would fill 30 glasses.

3. Children's answers will depend on the containers the children use.

5 Measure in millilitres

➜ pages 172–175

Discover

1. a) 1 teaspoon holds 5 ml.
10 ml = 2 teaspoons
15 ml = 3 teaspoons
20 ml = 4 teaspoons
100 ml = 20 teaspoons, so it is better to use a measuring jug.
b) 30 ml is the same as **6** teaspoons.

Think together

1. a) 60 ml b) 40 ml

2. Least to greatest: A 40 ml, C 45 ml, B 50 ml.

3. There is 45 ml of vinegar in the jug.

6 Measure in litres

➜ pages 176–179

Discover

1. a) **20** 1 l bottles of water will fill the 20 l barrel.
b) **10** small watering cans of water would fill the barrel.
4 large watering cans of water would fill the barrel.

Think Together

1. a) 4 l
b) 6 l
c) 10 l

2. a) Bath: 200 l
b) Basin: 20 l
c) Kettle: 1 l

3. a) They should fill the 8 l watering can, then pour it into the 5 l watering can until it is full. There will be 3 l left in the larger watering can.

b) They should fill two 5 l watering cans, pouring both into the 8 l watering can until it is full. There will be 2 l left in the second 5 l watering can.

7 Measure temperature using a thermometer

➜ pages 180–183

Discover

1 a) Mia lives in **York**.
b) Marta lives in **Edinburgh**.

Think together

1. a) 10 °C
b) 15 °C
c) 22 °C
d) 9 °C

2. a) Rav lives in **Glasgow**.
b) Sue lives in **Swansea**.
c) Jon lives in **Liverpool**.

3. A is in the **shade**.
B is **broken**.
C is in the **sun**.

8 Read thermometers

➜ pages 184–187

Discover

1 a) Baby Bear's porridge is **10˚C**.
b) Mummy Bear's porridge is 12 °C.
Daddy Bear's porridge is 15 °C.
15 °C is greater than 12 °C.
Daddy Bear's porridge is hotter.

Think together

1. a) 10 °C b) 22 °C c) 35 °C d) 45 °C

2. a) **A** is hotter. b) **A** is hotter.

3. Kettle: A
Ice: B
Bath: D

End of unit check

➜ pages 188–189

1. D

2. D

3. Inside: D Outside: A

Think!

A = **5** kg B = **15** kg C = **10** kg