8 Skip Counting

A Hopping Along

1 Lily's class is skip counting from zero to one thousand. One pupil starts counting, naming the first five numbers. Then another pupil names the next five numbers, and so on. Your turn is after Lily.

a) The class is skip counting in tens. Lily's numbers are 450, 460, 470, 480, 490. Now it's your turn.

Write down the next five numbers. ……, ……, ……, ……, ……

b) The class is skip counting in fives. Lily's numbers are 765, 770, 775, 780, 785. Now it's your turn.

Write down the next five numbers. ……, ……, ……, ……, ……

2 The class is skip counting in twos. Write the missing numbers in the gaps.

a) 42, 44, 46, 48, ……, ……, ……, ……, 58, ……, ……, ……, ……

b) 380, 382, 384, ……, ……, ……, ……, 394, ……, ……, ……, ……

3a) Skip count backwards in fives. 500, ……, ……, ……, ……, ……, ……

b) Skip count backwards in tens. 750, ……, ……, ……, ……, ……, ……

4a) Skip count in threes from 0 to 30.

0, 3, 6, ……, ……, ……, ……, ……, ……, ……, ……

b) Skip count in fours from 0 to 40.

0, 4, 8, ……, ……, ……, ……, ……, ……, ……, ……

B Numberlines

Numbers on a numberline go up in evenly spaced steps, like when you do skip counting. When you fill in missing numbers on the numberline, you must first work out what the step size is.

1 Each line has a different step size.

Fill in the numbers that are missing on these numberlines.

a)

770		780				800				820
			……				……			

b)

434		436		438				442		
					……				……	

c)

100		150		200				300		
					……				……	

A Dragon Slaying

1 Tristan played a computer game. He set a new highest score with 95 points, which is 35 points more than his old score. How many points was his old highest score?

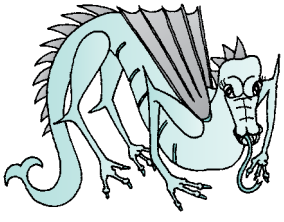
……

2 Joel has 36 points. He doubles his points by slaying the dragon.

How many points has he got now? ……..

3 Tristan's game took 50 minutes. Joel's game took 12 minutes less.

How long did Joel's game take? ……..

4 

Oliver is on 25 points when he saves the princess from the dragon. For this he gains 50 points, but he breaks his sword, which means a loss of 25 points. How many points does Oliver have now?

……

working space

……

……

……

……

……

……

……

……

B Robert's birthday

1 It's Robert's birthday today. He got five presents. Robert's sister Dani bought one of these presents.

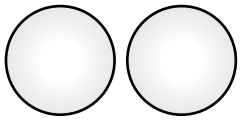
She paid with 

and got some change.

What did Dani buy? ……

2 Mum paid with 

for the watch. She got 2 coins for change. The coins were :



3 Dad bought two presents. Together these presents cost just over 40 dollars. What did Dad buy for Robert?

……

……

4 Use a calculator to find the cost of all five presents together.

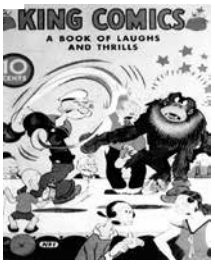
……

Robert's 9th birthday presents

watch
$39.60

football
$15.95

trading cards
$12.50



comic book
$7.95

Lego set
$24.95

42 Lots of the Same

Multiplying and Dividing

A Skip Counting

Skip counting can be used when counting things that are grouped in sets.

Example : How many fingers on 7 hands?

Think : 5, 10, 15, 20, 25, 30, 35.

stop at the 7th hand

Answer : **35**

1 Work out the total number of fingers on . . .

a) 5 hands .....

b) 8 hands .....

c) 10 hands .....

d) 12 hands .....

2 One pair of shoes is really two single shoes.

Work out the total number of shoes in . . .

a) 4 pairs .....

b) 7 pairs .....

c) 10 pairs .....

d) 16 pairs .....

3 The shop sells boxes with 10 felt tip pens.
Work out the number of felt tip pens in . . .

a) 3 boxes .....

b) 8 boxes .....

c) 10 boxes .....

d) 13 boxes .....

B Keep Adding

Example : In a cafe each table has a vase with 3 flowers.
Work out the total number of flowers on . . .
a) 2 tables b) 5 tables

Working : a) 3 + 3 = 6
b) 3 + 3 + 3 + 3 + 3 = 6 + 6 + 3 = **15**

1 In the game *Happy Families* you try to get a family of matching cards. A family is made with 4 cards.

Write a sum and find the number of cards in . . .

a) 3 families of 4 ..... **4 + 4 + 4 =** .....

b) 5 families of 4 .....

.....

c) 6 families of 4 .....

2 Write sums for these and find the total.

a) 2 lots of 6 ..... **6 + 6 =** .....

b) 3 lots of 2 .....

c) 4 lots of 5 .....

3 Here is a strip of stamps. There are 3 stamps on a row. How many stamps on . . .

a) 4 rows?

.....

b) 6 rows?

.....

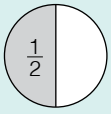
c) 10 rows?

.....

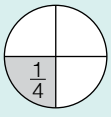
62 Name the Fraction

A One Slice

A fraction is part of a whole thing.
For instance if a whole cake is cut into 2 equal parts, then each part is one half of the cake.



Also, when a whole cake is cut into 4 equal slices, then each slice is one quarter of the cake.



One half and one quarter are fractions.
One half is written in figures as $\frac{1}{2}$.
One quarter is written in figures as $\frac{1}{4}$.

(Also $\frac{1}{5}$ is one fifth, $\frac{1}{6}$ is one sixth, $\frac{1}{7}$ is one seventh and so on.)

1 When a cake is cut into 3 equal parts, then each part is one third of the cake.

Write one third in figures. .....

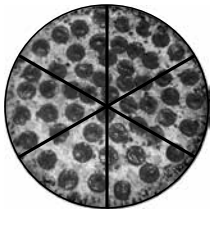
2 You are allowed to eat $\frac{1}{5}$ of a cake.

a) In how many equal parts should the cake be cut? .....

b) How do we say the fraction $\frac{1}{5}$?

.....

3 Complete these sentences with words.



This pizza is cut into ..... equal slices.

Each slice is one ..... of the pizza.

4a)

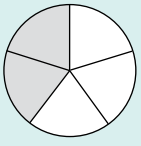
Show how you can cut this whole square in halves. The halves must be the same size!

b)

Show how you can cut this whole square in quarters. Make sure the quarters are the same size!

B More Than One Slice

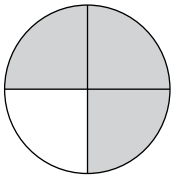
Example :
David has cut a pizza into 5 equal slices.
He eats two of the slices.
What fraction of the pizza is 2 slices?
Give your answer in figures and in words.



Think : Two lots of one fifth make two fifths.

Answer : In figures $\frac{2}{5}$, in words two fifths.

1 A pie is cut into quarters.
Amy eats three quarters.
Write three quarters in figures.



.....

2 An orange is cut into six equal parts. Lily gets four of these parts. What fraction of the orange does Lily get?

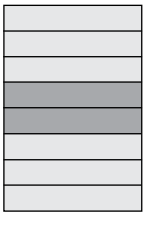
In figures ..... , in words .....

3 A bar of chocolate can be cut into eight pieces of equal size.

a) Aria gets three pieces of a bar.
What fraction of the bar is that?

.....

b) Lily gets the next two pieces.
What fraction of the bar is that?

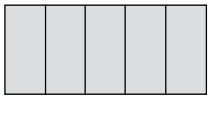


.....

c) Daniel opens a new chocolate bar.
He eats the whole bar by himself.

Complete : Daniel eats $\frac{\ldots\ldots}{8}$

4 A cake is cut in 5 equal slices.
Lily eats 5 slices.



Write a fraction in this sentence:

Lily got ..... of the cake, she ate the whole cake.

68 The Four Operations

A The 'Number Cruncher'

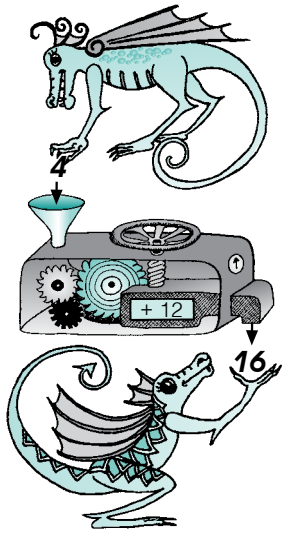
1 The dragons have invented a machine. They call it a *Number Cruncher* because it changes numbers. The Number Cruncher can do 4 operations, it can add, subtract, multiply and divide.

a) The dragons have set the Number Cruncher to the rule +12. This means that 12 will be added to any number that goes into the machine. Complete this diagram.

IN			OUT
4	→		→ 16
8	→	+ 12	→ .....
25	→		→ .....

b) Now the dragons set the Number Cruncher to the rule x 5. This means that 5 will be multiplied by any number that goes into the machine. Complete this diagram.

IN			OUT
2	→		→ 10
5	→	x 5	→ .....
10	→		→ .....



2 Complete these Number Cruncher tables.

a)

IN			OUT
30	→		→ .....
46	→	- 6	→ .....
72	→		→ .....

b)

IN			OUT
6	→		→ .....
15	→	÷ 3	→ .....
24	→		→ .....

c)

IN			OUT
10	→		→ .....
25	→	+ 25	→ .....
43	→		→ .....

3 Baby dragon has set the Number Cruncher to some rules. She tells you what the rule is and shows you the numbers coming out of the machine. You must work out what numbers went in.

a)

IN			OUT
.....	→		→ 4
.....	→	÷ 2	→ 7
.....	→		→ 12

b)

IN			OUT
.....	→		→ 10
.....	→	+ 8	→ 22
.....	→		→ 44

c)

IN			OUT
.....	→		→ 20
.....	→	x 5	→ 35
.....	→		→ 50

4 Baby dragon is testing your skills. She tells you the numbers going in and the numbers coming out. You must work out what the rule is.

a)

IN			OUT
3	→		→ 9
4	→	.....	→ 12
7	→		→ 21

b)

IN			OUT
2	→		→ 11
4	→	.....	→ 13
10	→		→ 19

c)

IN			OUT
11	→		→ 4
20	→	.....	→ 13
35	→		→ 28

Number Skills Practice 4

A Solving Problems

1 Fifteen pancakes are shared evenly between 6 people How many pancakes for each person? (You may need to cut up some pancakes!)

.....

.....

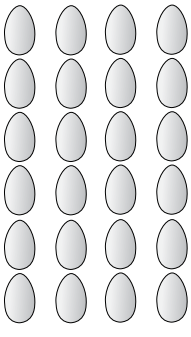
2 There are 15 bananas on the fruit bowl and $\frac{3}{5}$ of the bananas are green.
How many bananas are green?

.....

.....

.....

3 A tray holds 6 rows of 4 eggs. Auntie uses 2 rows of 4 eggs for an omelette.
How many eggs are left on the tray after Auntie's cooking?



.....

.....

4 Grace wants to work out 9 lots of 8.
She knows that 10 x 8 = 80.
What should Grace do to find 9 x 8?

.....

5 The Bird Park is open six days a week.

Number of Visitors to the Bird Park					
Monday	Tuesday	Thursday	Friday	Saturday	Sunday
197	275	226	182	209	227

a) What day of the week is the Bird Park closed?

.....

b) On what day did the Bird Park have the most visitors? .....

B More Problems

1 Work out the Roman number sum IX + VI.
Write your answer as a Roman number.

.....

.....

2 Three boys together baked 100 cupcakes for the school fair. Jack and Oscar each baked 35 cupcakes. Mason baked the rest.
How many cupcakes did Mason bake?

.....

.....

.....

3 Max is counting the silver coins in his piggy bank. He has 16 coins of 10c, 7 coins of 20c and 4 coins of 50c.

a) How many silver coins does Max have?

.....

.....

b) How much money does that amount to?

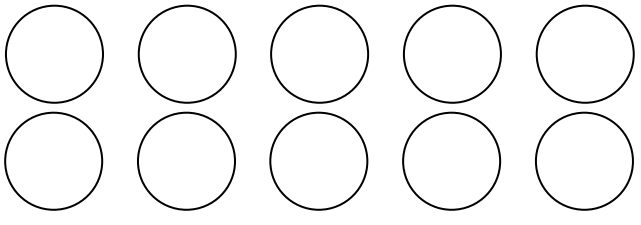
.....

.....

.....

.....

4 A toy costs $ 5.40. Eve used 10 coins to pay for this toy. What coins could Eve have used?



86 Estimating Capacity

Measurement

The **capacity** of a container tells us about its size. To compare the capacity of two containers we can pour water from one container into the other. The capacity of containers are often measured in litres.

The photo shows containers that can hold about 1 litre of liquid. The word litre is usually shortened to L.

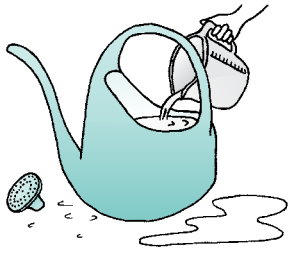
A Playing With Water

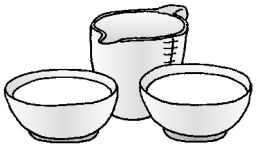
1 Oliver has a measuring jug with a capacity of 1 litre. He uses the jug to fill containers with water.

a) To fill his mum's watering can, Oliver needs to fill up his jug 4 times. The last time he pours the water into the can, he finds that there is some water left in the jug.

Complete this sentence with more or less .

The capacity of the watering can is a little ..... than 4 litres.



b) 

Oliver finds that one jug of water can fill two mixing bowls. What is the capacity of each bowl?

..... L

B How Many Litres?

1 How much liquid can each container hold? Choose the correct label for each container.

Labels

10 L

60 L

$\frac{1}{4}$ L

2 L

1 L

carton of juice

bucket

saucepan

cup

washing machine

2 Look at the containers in question 1.

a) How many sauce pans filled with water are needed to fill up the bucket? .....

b) How many buckets filled with water are needed to fill up the washing machine? .....

c) How many cups can be filled with one full carton of juice? .....

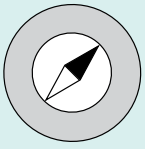
Compass Directions 103

A The Compass

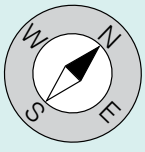
The needle in a compass points north and will keep pointing in that direction even when you turn around. When you are facing north, south is always behind you, east will be on your right, west on your left.

Example :

Write the four compass directions, N, S, E, W on the rim of this compass.

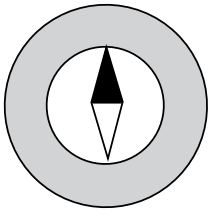


Think : The black triangle points to north (N), so the white triangle points to south (S). When we face north,we find east (E) on our right, west (W) on our left.

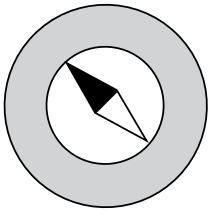


1 Write N, S, E and W on these compasses.

a)



b)

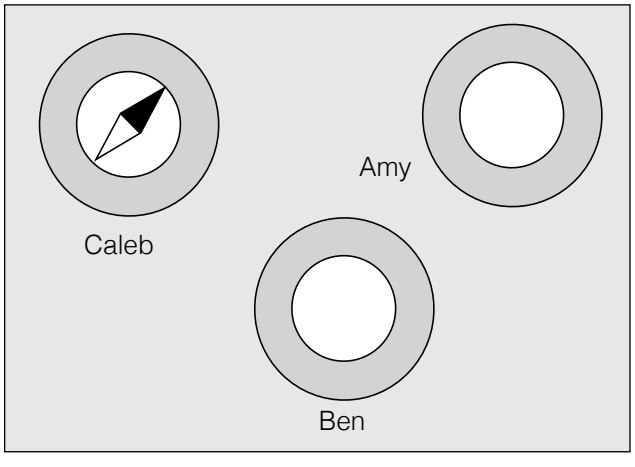


2 Find out in what compass direction the sun rises and where it sets.

a) The sun rises in the ……..

b) The sun sets in the ……...

3



Three children in the classroom are holding a compass. You can see Caleb's compass needle pointing north. Draw needles for Amy's and Ben's compasses.

B Cabin By The Lake

A map is a drawing of an area as seen from above. Usually a map is drawn so that north is at the top and south is at the bottom.

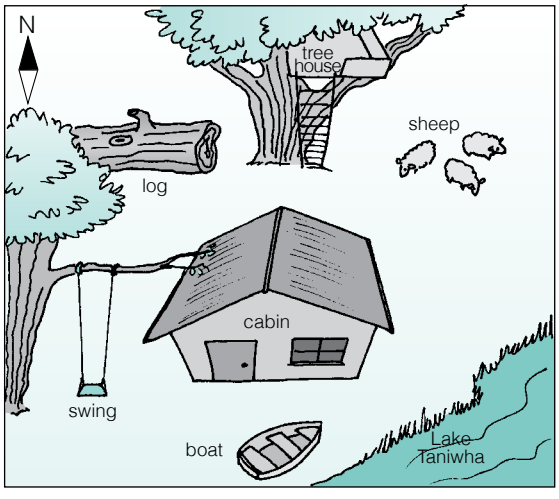
Example :

Below is the map Uncle Henare drew of his cabin by the lake. If you were sitting on the swing, in what compass direction would you see the cabin?

Think : I am on the swing, the top of the map is north. If I face north, the cabin is on my right.

Answer : The cabin is east of the swing.

1



Imagine you are in the cabin. Complete the sentences with things from the map.

a) South of the cabin is the ……...

b) North of the cabin is the ……

c) West of the cabin is the ……

2 Imagine you are in the tree house. Complete the sentences with compass directions.

north	south	east	west

a) The cabin is …… of the tree house.

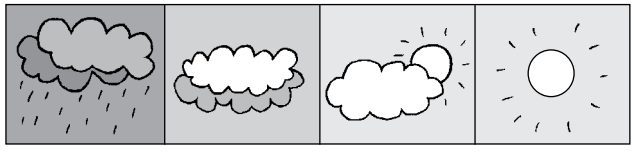
b) The log is …… of the tree house.

c) The sheep are …….. of the tree house.

A Likely

1 Look outside to the sky. What is the weather most likely going to be in 1 hour from now?

Circle your choice.

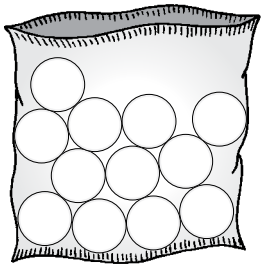


2 Draw arrows to show how likely these are.

I will get licked by a dog today.	certain
Tonight another finger will grow on my left hand.	good chance
Next assembly the principal will tell us a joke.	small chance
I will sleep in my own bed tonight.	impossible

B Gobstoppers

1 There are 12 gobstoppers in this bag. Colour 3 of them red, 2 of them orange. Colour the rest yellow.



2 certain likely unlikely impossible

Imagine we shake the bag with gobstoppers. Ben, who is blindfolded, draws one gobstopper from the bag. Choose a word from the list above to complete these.

a) It is ..... that Ben gets a yellow gobstopper.

b) It is ..... that Ben gets a green gobstopper.

c) It is ..... that Ben gets a orange gobstopper.

d) It is ..... that the gobstopper Ben picks is either red or orange or yellow.

C Predictions

1 Predict the following :

a) Who will be the first person you see when you get home from school today? .....

b) What will you have for dinner tonight? .....

c) What will you watch on TV today? .....

d) Who will be your teacher next year? .....

e) Who will be your best friend when you are 15? .....

f) What will the weather be like tomorrow? .....

g) What will the weather be like on your birthday? .....

2a) Which of the predictions in question 1 did you find the easiest? .....

b) Which of the predictions did you find the hardest? .....

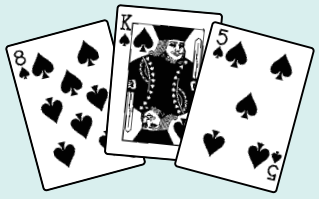
A3 Answer Section

Page 32 - Word Problems

A1 17 A2 65
A3 8 A4 24 eggs
A5 8 degrees A6 68 millimetres
A7 45 marbles A8 43 marbles
A9 page 60 A10 90 pages

Page 33 - Card Games

A1-3 Student's own answers



Page 34 - Adding Tens and Hundreds

A1 a) 210 b) 560 c) 440 d) 550
e) 140 f) 380
A2 a) 500 b) 700 c) 410 d) 740
e) 660 f) 830
A3 a) 650 b) 470 c) 300 d) 660
e) 620 f) 350 g) 180 h) 810
B1 a) 50 b) 80 c) 90 d) 60
e) 70 f) 20 g) 40 h) 30
i) 10
B2 a) 180 + 20 + 40 = 240 b) 390 + 10 + 30 = 430
c) 550 + 50 + 20 = 620 d) 260 + 40 + 10 = 310
e) 680 + 20 + 60 = 760

Page 35 - Subtracting Tens and Hundreds

A1 a) 250 b) 490 c) 660 d) 130
e) 380 f) 540
A2 a) 300 b) 100 c) 600 d) 200
A3 a) 520 b) 140 c) 380 d) 250
A4 a) 240 b) 320 c) 400 d) 760
B1 a) 250 - 50 - 20 = 180 b) 410 - 10 - 40 = 360
c) 720 - 20 - 10 = 690 d) 370 - 70 - 10 = 290
e) 530 - 30 - 30 = 470 f) 640 - 40 - 50 = 550
B2 a) 530 b) 170 c) 220 d) 110
e) 760 f) 300

Page 36 - Money

A1 examples : a) 55 + 45 b) 21 + 79
c) 86 + 14 d) 37 + 63
A2 a) 75 b) 95 c) 65 d) 85
e) 35 f) 45
A3 a) 100¢ b) 200¢ c) 250¢ d) 320¢
A4 60¢ A5 30¢
B1 examples : (other answers)
hamburger combo : 4 x $2, 1 x 50¢
drink : 1 x $2, 1 x 50¢, 2 x 20¢
cake : 2 x $2, 1 x $1, 1 x 20¢, 1 x 10¢
B2 coins : 2 x $2, 1 x 50¢, 2 x 10¢ (other answers)
B3 coins : 3 x $2, 4 x 10¢ (other answers)
B4 coins : 2 x 50¢, 2 x 10¢ (other answers)

Page 37 - Read and Solve Problems 1

A1 60 points A2 72 points
A3 38 minutes A4 50 points
B1 comic book B2 coins : 2 x 20¢
B3 football and Lego set B4 $100.95

Page 38 - Read and Solve Problems 2

A1 a) 96 pupils b) 84 pupils
c) 260 pupils
B1 3 widths is 54 metres. 2 lengths is 50 metres
Yes he can.
B2 Mia swims for 170 minutes.
Three hours is 180 minutes.
Mia does not swim for 3 hours

Page 39 - Guess, Check and Improve

A1 First guess : Hori has 50 cards, Aroha has 60 cards
Together that is 110 cards. Check : too high
Students take a series of guesses to reach the correct answer.
Correct Answer : Hori has 48 cards, Aroha has 58.
A2 Students take a series of guesses to reach the correct answer.
Correct Answer :
Room 1 has 26 pupils Room 2 has 27 pupils
Room 3 has 28 pupils Room 4 has 29 pupils

Page 40 - Estimating

A1 a) 600 + 200 = 800 b) 240 + 30 = 270
c) 50 + 80 = 130 d) 270 + 70 = 340
A2 a) 490 - 300 = 190 b) 200 - 50 = 150
c) 80 - 30 = 50 d) 320 - 90 = 230
B1 500 - 60 = 440 about 440 children
B2 340 + 80 = 420 about 420 tickets
B3 300 - 100 = 200 about 200 male members
B4 210 - 40 = 170 about 170 metres
B5 example : 17 + 30 = 47 dollars,
other answers acceptable.

Page 41 - Adding and Subtracting - Test

A1 a) 73 b) 36 c) 79 d) 190
e) 645 f) 340
A2 a) 3 b) 80 c) 9 d) 65
A3 a) 48 b) 67 c) 51 d) 130
e) 640 f) 270
A4 a)
$$\begin{array}{r} 68 \\ +\ 25 \\ \hline 80 \\ +\ 13 \\ \hline 93 \end{array}$$
b)
$$\begin{array}{r} 92 \\ -\ 56 \\ \hline 36 \end{array} \qquad \begin{array}{r} 80 \quad 12 \\ \cancel{90} + \cancel{2} \\ 50 + 6 \\ \hline 30 + 6 \end{array}$$
B1 a) 24 b) 24 + 16 = 40 40 stuffed animals
B2 a) 13 b) 37 + 37 = 74 c) 58 - 26 = 32
B3 150 + 200 = 350 350 - 80 = 270 Now : 270 points

Page 42 - Lots of the Same

A1 a) 25 b) 40 c) 50 d) 60
A2 a) 8 b) 14 c) 20 d) 32
A3 a) 30 b) 80 c) 100 d) 130
B1 a) 4 + 4 + 4 = 12 b) 4 + 4 + 4 + 4 + 4 = 20
c) 4 + 4 + 4 + 4 + 4 + 4 = 24
B2 a) 6 + 6 = 12 b) 2 + 2 + 2 = 6
c) 5 + 5 + 5 + 5 = 20
B3 a) 12 b) 18 c) 30

Page 43 - Multiplying

A1 a) five times three (or five lots of three)
b) 3 + 3 + 3 + 3 + 3 = 15
A2 a) 7 + 7 = 14 b) 5 + 5 + 5 = 15
c) 1 + 1 + 1 + 1 = 4 d) 0 + 0 + 0 = 0
e) 3 + 3 + 3 + 3 + 3 + 3 + 3 = 21
A3 a) 20 + 4 = 24 b) 14 + 2 = 16
c) 24 + 3 = 27
B1 a) 5 x 4 = 4 + 4 + 4 + 4 + 4 = 20 trees
b) 4 x 5 = 5 + 5 + 5 + 5 = 20 trees
c) student's own answer
B2 a) 2 x 9 = 9 + 9 = 18
b) 4 x 6 = 6 + 6 + 6 + 6 = 12 + 12 = 24
c) 3 x 7 = 7 + 7 + 7 = 14 + 7 = 21

Page 44 - Tens and Fives

A1 a) 30 b) 60 c) 70
A2 8 x 5 = 40
A3 a) 2 tens, 20 b) 4 tens, 40
c) 6 tens, 60 d) 10 tens, 100
A4 a) 20, then 25 b) 40, then 45
A5 a) 15 b) 30 c) 25 d) 35
B1 a) 4 x 5 = 20 b) 6 x 5 = 30
c) 9 x 5 = 45 d) 8 x 5 = 40
B2 a) 30 b) 20 c) 30 d) 70
e) 10 f) 25 g) 40 h) 45
i) 35 j) 0
B3 a) 15 b) 35

Page 45 - Learning Tables

A1 1 x 3 = 3 2 x 3 = 6 3 x 3 = 9 4 x 3 = 12
5 x 3 = 15 6 x 3 = 18 7 x 3 = 21 8 x 3 = 24
9 x 3 = 27 10 x 3 = 30
A2 1 x 4 = 4 2 x 4 = 8 3 x 4 = 12 4 x 4 = 16
5 x 4 = 20 6 x 4 = 24 7 x 4 = 28 8 x 4 = 32
9 x 4 = 36 10 x 4 = 40
A3 a) 8 b) 24
B1
B2 odd
B3 a)
B4

1	2	3	(4)	~~5~~	6	7	(8)	9	~~10~~
11	(12)	13	14	~~15~~	(16)	17	18	19	~~(20)~~
21	22	23	(24)	~~25~~	26	27	(28)	29	~~30~~
31	(32)	33	34	~~35~~	(36)	37	38	39	~~(40)~~
41	42	43	(44)	~~45~~	46	47	(48)	49	~~50~~
51	(52)	53	54	~~55~~	(56)	57	58	59	~~(60)~~
61	62	63	(64)	~~65~~	66	67	(68)	69	~~70~~
71	(72)	73	74	~~75~~	(76)	77	78	79	~~(80)~~
81	82	83	(84)	~~85~~	86	87	(88)	89	~~90~~
91	(92)	93	94	~~95~~	(96)	97	98	99	~~(100)~~

B3 b) The circled numbers are all grey.
B4 b) No, some numbers are white, some grey.

Page 46 - Patterns

A1 a) 2 lots of 8 cards, 8 + 8 = 16 cards
b) 3 lots of 9 marbles, 9 + 9 + 9 = 27 marbles
c) 4 lots of 6 stars, 6 + 6 + 6 + 6 = 24 stars
B1 a) 4 lots of 4 tulips and 3 lots of 3 tulips.
In total 16 + 9 = 25 tulips.
b) 2 lots of 6 tiles and 3 lots of 3 tiles.
In total 12 + 9 = 21 tiles.