Introduction

To parents, teachers and caregivers.

Year 2 Start Right Mathematics Workbook helps students revise, consolidate and develop their knowledge of mathematics, based on Level One of *The New Zealand Curriculum* Mathematics and Statistics which was implemented in 2010. *The New Zealand Curriculum* Level One typically relates to Year One and Year Two students (5 to 7 year olds).

Children at Year Two level have had a year of exploring numbers and their relationships.

This exploration continues as they progress through the levels.

Playing at home and school provides opportunities for children to have learning conversations and to ask questions which explore and strengthen mathematical thinking skills.

Further learning can be developed and consolidated by using a box of 'bits and pieces' for sorting and counting, as well as equipment such as dice, counters, coloured blocks (of different shapes and sizes), magnetic numbers and craft sticks.

Your 'bits and pieces ' box could include coloured paper clips, buttons, beads, little toys, pegs, pieces of drinking straws, shells, tags off bread bags and bottle tops.

At this level, children will learn further addition and subtraction strategies, early multiplication (skip-counting) and division (sharing).

The New Zealand Curriculum Mathematics and Statistics requires that students be engaged in knowing, doing and thinking mathematically and statistically, in a range of meaningful contexts. To achieve this, each page of this workbook:

- revises or explains necessary concepts with relevant worked examples
- highlights new mathematical terms as they occur
- provides a range of carefully selected exercises for student practice (students write their answers in the spaces provided).

A full set of answers is provided at the end of this book.

The interpretation of the material from the *New Zealand Curriculum* Mathematics and Statistics at Year Two can vary. Students can have a range of prior knowledge and may be working at different levels. Consequently if a Year Two student finds this workbook too easy, consider buying the workbook for a later year (the companion *Year 3 Mathematics Start Right Workbook* introduces *The New Zealand Curriculum* Mathematics and Statistics Level Two.) If a Year Two student struggles initially, consider buying the companion book for Level One, the *Year 1 Mathematics Start Right Workbook*.

Structure of the Mathematics and Statistics Curriculum

The Achievement Objectives of the learning area of Mathematics and Statistics are presented in three strands: Number and Algebra, Geometry and Measurement, and Statistics.

At Level One, 80% of the Mathematics and Statistics curriculum is related to number knowledge and strategy thinking. The other 20% relates to statistics, measurement, geometry and algebra (exploring patterns).

Number

The number framework in the curriculum is in two main sections – number strategy thinking and number knowledge.

Strategy refers to the processes students use to estimate and answer problems with numbers, i.e. addition, subtraction, multiplication and division. Knowledge refers to the key facts and skills that students learn. At Level One children need to count, read, write and work with whole numbers 1–5, then 1–10, 1–20, followed by 1–100, etc.

Algebra

At Level One students are able to copy a pattern and work out the next element in the pattern. They can explain or show how they work out their answer.

Geometry and Measurement

At Level One, students recognise simple two-dimensional shapes and their features. They also fit shapes together to form tessellations (patterns of identical shapes, that fit together to cover a plane without gaps or overlaps).

Geometry also includes the use of the language of position, needed when following directions.

Measurement is fundamentally about comparison. At Level One the attributes of a given object are compared with the attributes of another object. This leads to comparing the attributes of a given object to a standard unit of measurement.

Attributes of objects may involve length, weight, volume/capacity, money and time.

Statistics

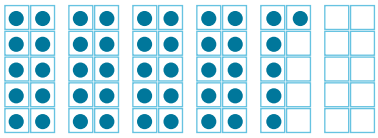
At Level One students are able to sort objects into groups and talk about the results. This requires the use of mathematical vocabulary such as more, less, bigger, biggest, etc.

Website

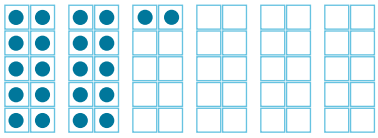
www.nzmaths.co.nz will provide extensive information about Mathematics and Statistics in the New Zealand Curriculum.

Number/Algebra: Showing tens and ones on tens frames (pages 28–29)

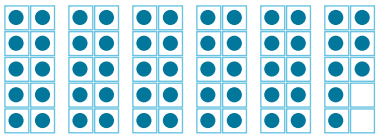
1. a. 46



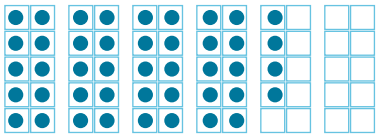
b. 32



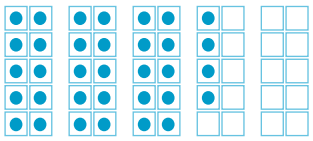
c. 58



d. 44



2. a.

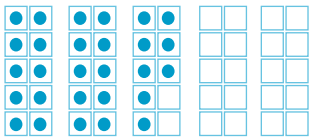


34

3 whole tens

4 ones

b.

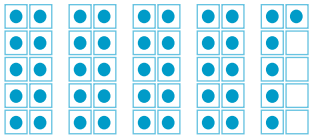


28

2 whole tens

8 ones

c.

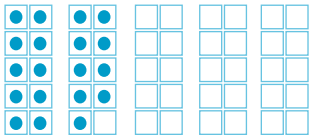


46

4 whole tens

6 ones

d.



19

1 whole tens

9 ones

Number/Algebra: Identifying tens and ones on a tens frame (pages 30–31)

1. X
2. ✓
3. ✓
4. ✓
5. ✓
6. X
7. ✓
8. X

Number/Algebra: Solving addition and subtraction problems with tens and ones using craft sticks (page 32)

1. 	36	30 + 6
2. 	71	70 + 1
3. 	58	50 + 8
4. 	62	60 + 2
5. 	83	80 + 3

Number/Algebra: Identifying tens and ones in larger numbers (page 33)

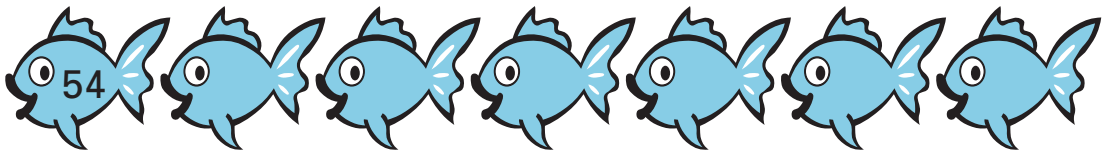
1. 36 = 3 tens 6 ones
2. 90 = 9 tens 0 ones
3. 57 = 5 tens 7 ones
4. 87 = 8 tens 7 ones
5. 66 = 6 tens 6 ones
6. 39 = 3 tens 9 ones
7. 42 = 4 tens 2 ones
8. 81 = 8 tens 1 ones
9. 28 = 2 tens 8 ones
10. 73 = 7 tens 3 ones
11. 48 = 4 tens 8 ones
12. 91 = 9 tens 1 ones
13. 14 = 1 tens 4 ones
14. 24 = 2 tens 4 ones

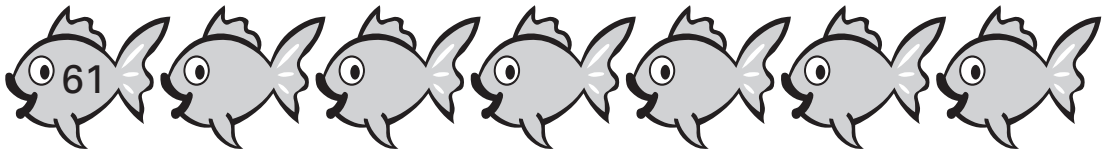
Number/Algebra: Identifying tens and ones (page 34)

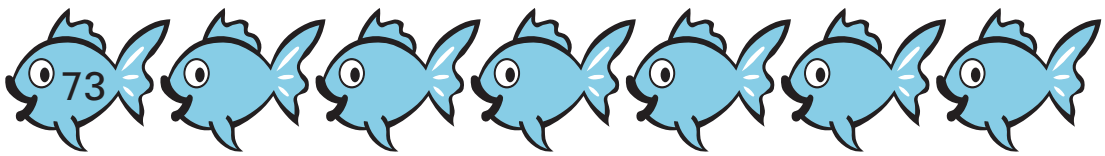
1. 86 = 8 tens 6 ones
2. 34 = 3 tens 4 ones
3. 24 = 2 tens 4 ones
4. 60 = 6 tens 0 ones
5. 73 = 7 tens 3 ones
6. 48 = 4 tens 8 ones
7. 92 = 9 tens 2 ones
8. 55 = 5 tens 5 ones
9. 99 = 9 tens 9 ones
10. 17 = 1 tens 7 ones
11. 66 = 6 tens 6 ones
12. 58 = 5 tens 8 ones
13. 6 = 0 tens 6 ones
14. 47 = 4 tens 7 ones

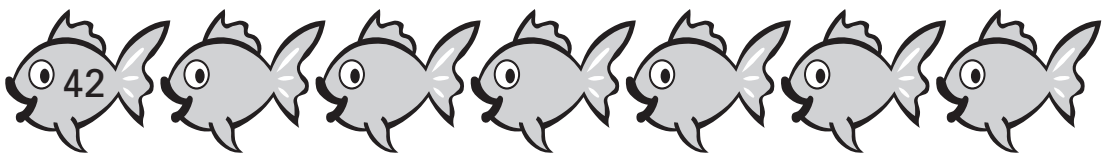
Practising counting backwards from a given number

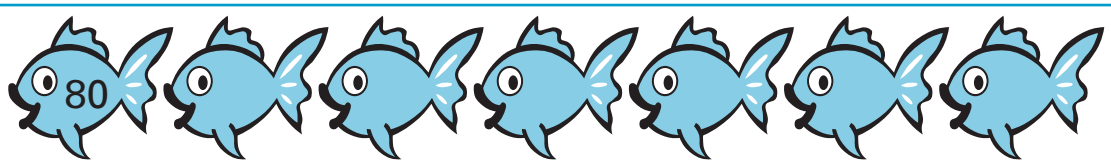
Count backwards from the number at the beginning of each line.
Write the numbers on the fish.

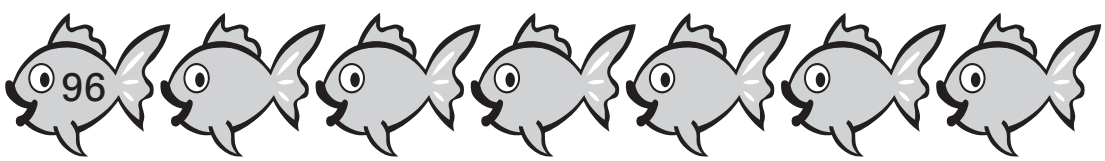
1. 

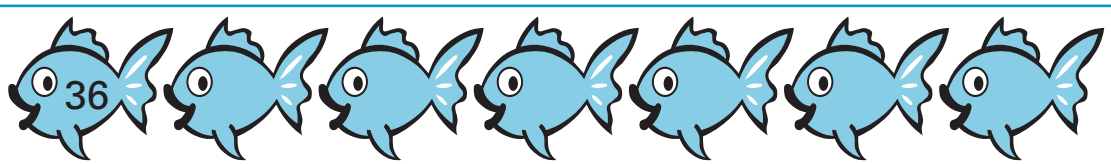
2. 

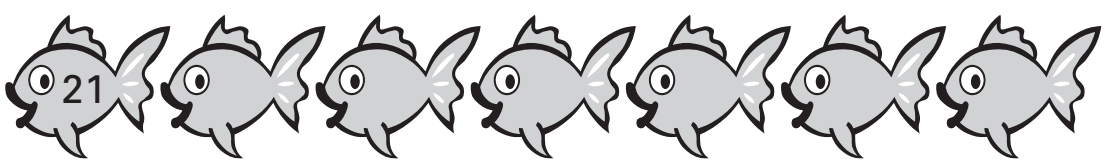
3. 

4. 

5. 

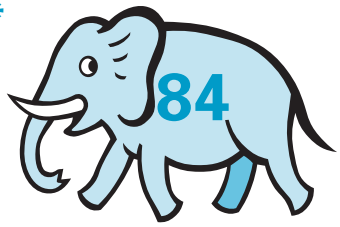
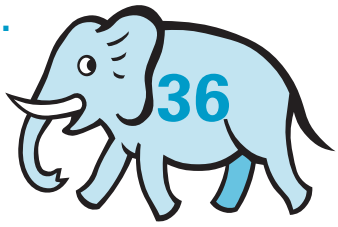
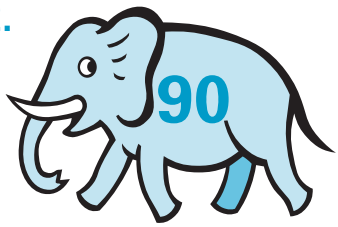
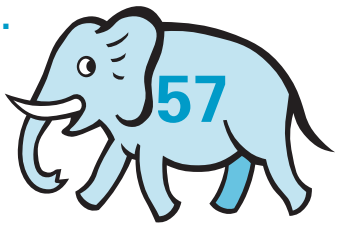
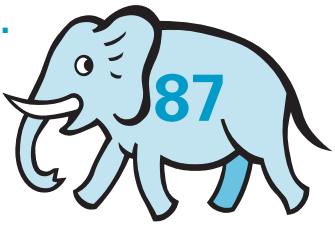
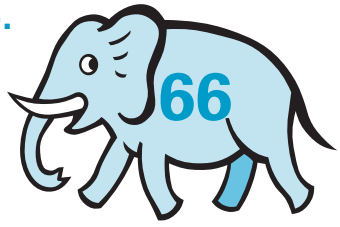
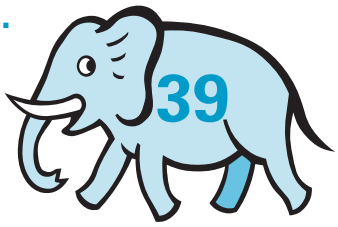
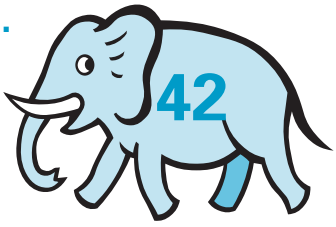
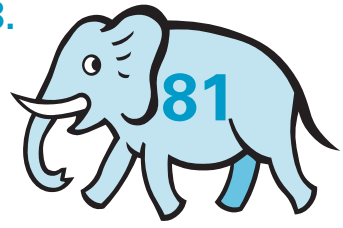
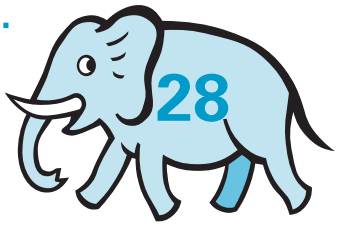
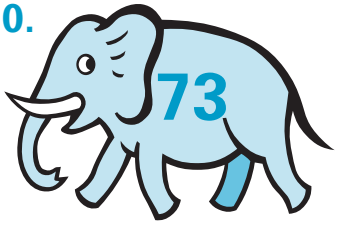
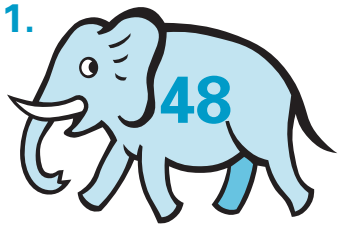
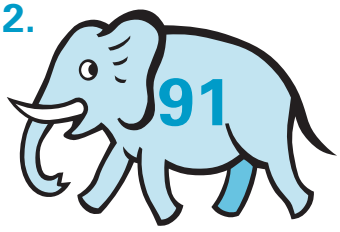
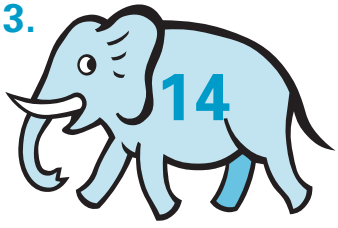
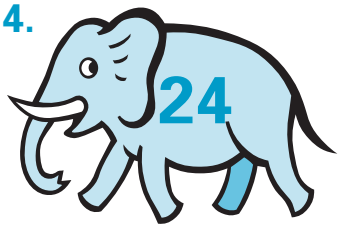
6. 

7. 

8. 

Practising identifying tens and ones in larger numbers

How many whole tens and ones on each elephant?

*  8 tens 4 ones	1.  ____ tens ____ ones	2.  ____ tens ____ ones
3.  ____ tens ____ ones	4.  ____ tens ____ ones	5.  ____ tens ____ ones
6.  ____ tens ____ ones	7.  ____ tens ____ ones	8.  ____ tens ____ ones
9.  ____ tens ____ ones	10.  ____ tens ____ ones	11.  ____ tens ____ ones
12.  ____ tens ____ ones	13.  ____ tens ____ ones	14.  ____ tens ____ ones

Sarah used a tens frame to work out 4 + 3

O	X
O	X
O	
O	
X	

I remembered to fill up the left side of the tens frame first.

4 + 3 = 7

Practising using tens frames for addition

Help Sarah with these problems.

Draw more counters on the tens frames to help solve the problems.

O	X
O	X
O	X
X	X
X	

* This one has been done for you.

3 + 6 = 9

1. 2 + 5 =

O	
O	

2. 5 + 4 =

O	
O	
O	
O	
O	

3. 4 + 3 =

O	
O	
O	
O	

4. 3 + 6 =

O	
O	
O	

5. 3 + 3 =

O	
O	
O	

6. 4 + 6 =

O	
O	
O	
O	

7. 9 + 1 =

O	O
O	O
O	O
O	O
O	

8. 7 + 2 =

O	O
O	O
O	
O	
O	

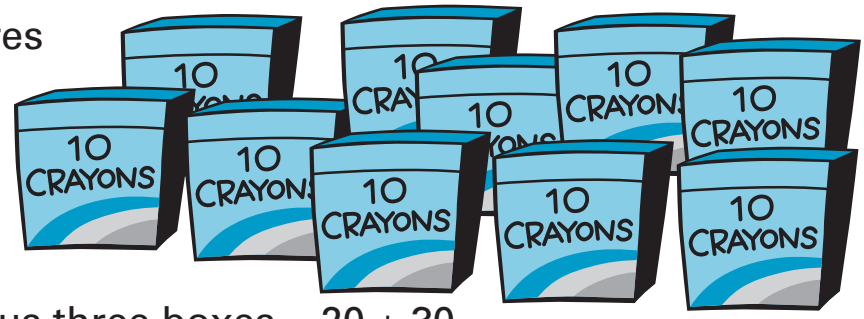
9. 1 + 6 =

O	

2. Use the addition facts that you know to help solve the following addition problems.

Use these pictures of boxes of 10 crayons to help.

Complete the sums below.



a. Two boxes plus three boxes = 20 + 30

I know 2 + 3 = ☐, so 20 + 30 = ☐

b. Four boxes plus two boxes = 40 + 20

I know 4 + 2 = ☐, so 40 + 20 = ☐

c. Five boxes plus three boxes is ☐ + ☐

I know 5 + 3 = ☐, so 50 + 30 = ☐

d. Six boxes plus two boxes is ☐ + ☐

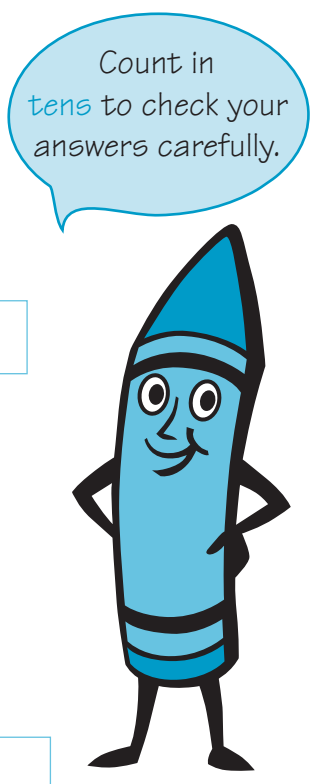
I know 6 + 2 = ☐, so 60 + ☐ = ☐

e. Three boxes plus three boxes = ☐ + ☐

I know ☐ + ☐ = ☐, so 30 + ☐ = ☐

f. Eight boxes plus one box = ☐ + ☐

I know ☐ + ☐ = ☐, so ☐ + ☐ = ☐



Practising learning to count on from the larger number first

Change the following number problems around so the larger number is first. Then solve the problems.

1. 2 + 16 = ☐ change to ☐ + 2 = ☐

5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

2. 4 + 18 = ☐ change to ☐ + ☐ = ☐

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

3. 3 + 20 = ☐ change to ☐ + ☐ = ☐

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

4. 7 + 12 = ☐ change to ☐ + ☐ = ☐

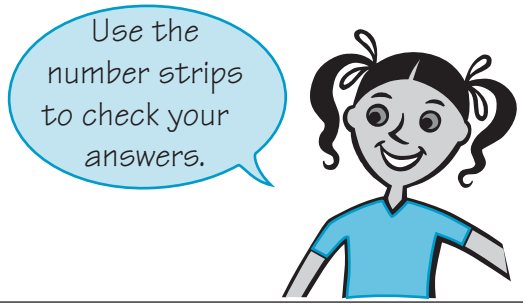
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

5. 5 + 30 = ☐ change to ☐ + ☐ = ☐

25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

6. 9 + 11 = ☐ change to ☐ + ☐ = ☐

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25



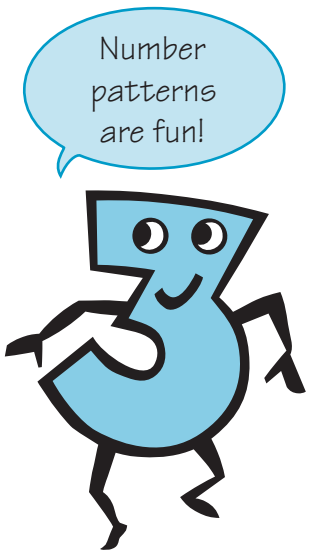
Below is a number pattern

2, 4, 6, 8, 10. The rule is: add two

Practising repeated patterns using numbers

Look at the rules and patterns below.

Follow the rules carefully and write the next three numbers in each pattern.



1. Rule: Subtract one

12, 11, 10, 9, _____, _____, _____

2. Rule: Add two

3, 5, 7, 9, _____, _____, _____

3. Rule: Add ten

10, 20, 30, 40, _____, _____, _____

4. Rule: Add five

5, 10, 15, 20, _____, _____, _____

5. Rule: Subtract two

20, 18, 16, 14, _____, _____, _____

6. Rule: Subtract ten

90, 80, 70, 60, _____, _____, _____

7. Rule: Subtract 5

40, 35, 30, 25, _____, _____, _____

8. Rule: Add three

3, 6, 9, 12, _____, _____, _____

9. Rule: Add five

25, 30, 35, 40 _____, _____, _____

10. Rule: Add one

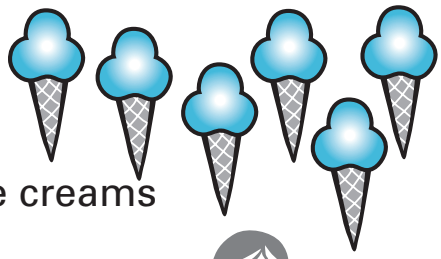
20, 21, 22, 23, _____, _____, _____

Practising sharing

Look carefully at the pictures to help you share the yummy food equally.

Write the numbers in the answer boxes.

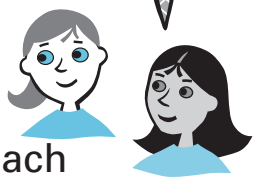
1.



☐ ice creams

☐ children

☐ ice creams each



2.

☐ muffins

☐ children

☐ muffins each

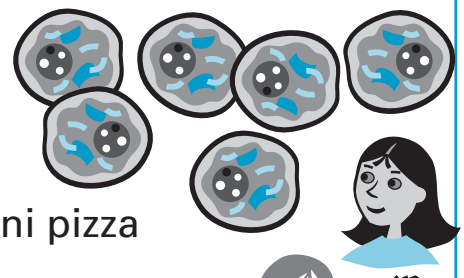
3.

☐ hot dogs

☐ children

☐ hot dogs each

4.



☐ mini pizza

☐ children

☐ mini pizza each

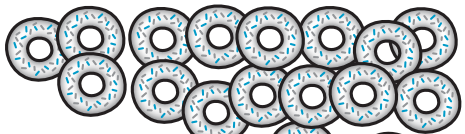
5.

☐ drinks

☐ children

☐ drinks each

6.



☐ doughnuts

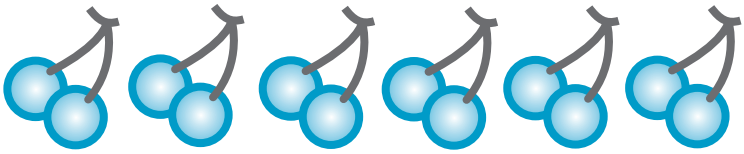
☐ children

☐ doughnuts each

Practising counting in twos

Write answers in the boxes, or call out the numbers so that this page can be reused.

1. Count in twos. Say how many cherries.

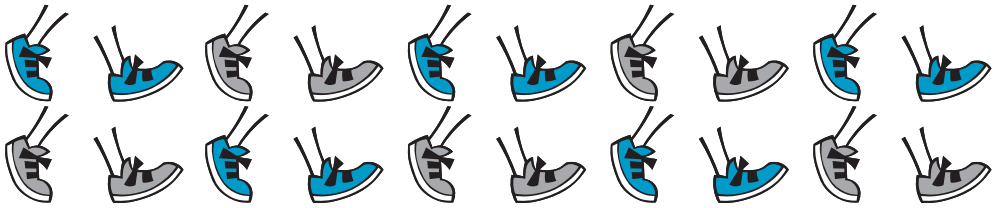


2. Count in twos. Say how many socks.

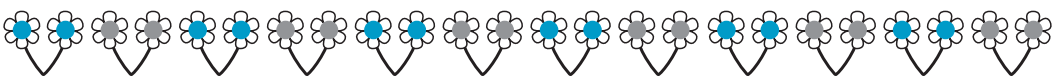
3. Count in twos. Say how many wheels.

4. Count in twos. Say how many wings.

5. Count in twos. Say how many feet.



6. Count in twos. Say how many flowers.



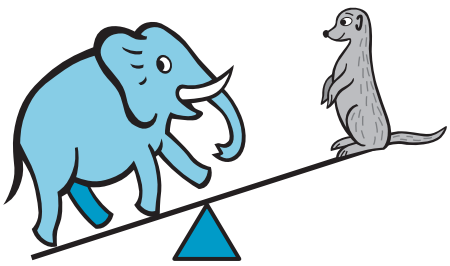
7. Just for fun

Practise counting in twos – how far can you go?

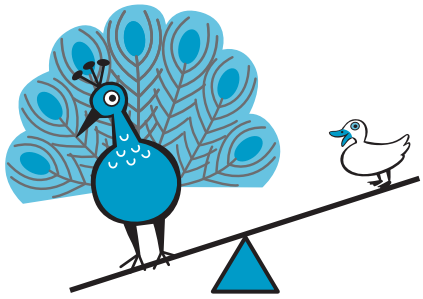
Practise counting backwards in twos from 20.

Practising comparing objects of differing weights

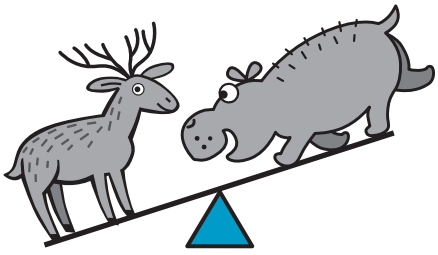
1. The zoo has a new see-saw for the animals. If you think the see-saw would tip like the picture shows write Y for 'yes' in the answer box. If you think the picture is wrong write N for 'no' in the answer box.



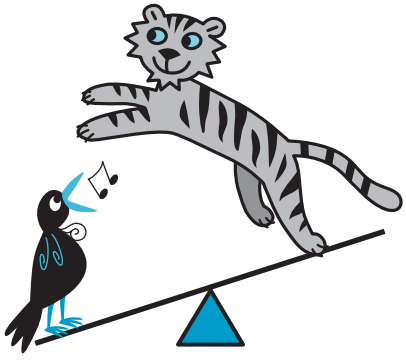
a. ☐



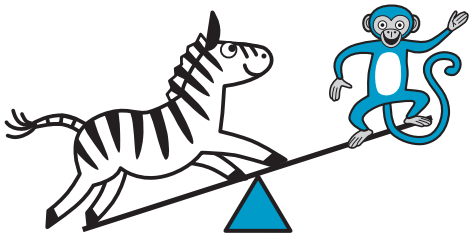
c. ☐



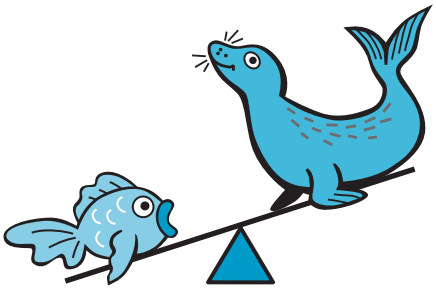
b. ☐



f. ☐



d. ☐

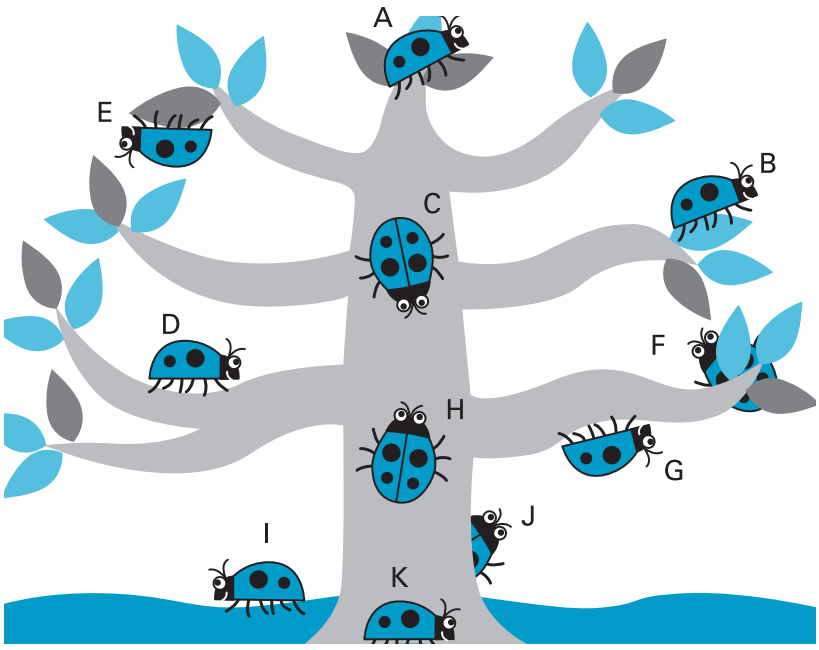


e. ☐

Practising exploring the language of position

Get your helper to read the following questions.

Point to the correct ladybird on the picture then write the letter of the ladybird in the answer boxes below.



Where is the ladybird at the top of the tree? A

1. Which ladybird is peeking out from behind the tree? ☐
2. Which ladybird is next to the tree? ☐
3. Which ladybird is under the branch? ☐
4. Which ladybird is on the branch? ☐
5. Which ladybird is in front of the tree? ☐
6. Which ladybird is climbing up the tree? ☐
7. Which ladybird is climbing down the tree? ☐
8. Which ladybird is on a leaf? ☐
9. Which ladybird is under a leaf? ☐
10. Which ladybird is behind a leaf? ☐

Practising time – the months of the year and the seasons

The twelve months of the year

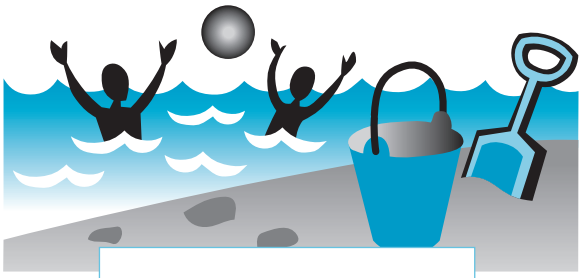
Starting with January as number 1, put the mixed-up months into the correct order.

Write the number in the box provided. The first is done for you.

March	3	December		August		June	
February		October		July		January	
April		November		May		September	

The four seasons

Write the name of the season at the bottom of the correct picture: Summer, Autumn, Winter, Spring.

December, January, February	March, April, May
	
June, July, August	**September, October, November**
	

Practising probability

Talk about the probability of these things happening, circle the probability below. The first one is done for you.

* Money will grow on trees	(not likely) / likely / will definitely happen
1. My cat will make a cake	not likely / likely / will definitely happen
2. My grandma will make some biscuits this week	not likely / likely / will definitely happen
3. Dad will cook a meal tonight	not likely / likely / will definitely happen
4. I will go to sleep tonight	not likely / likely / will definitely happen
5. Cars will drive on the road today	not likely / likely / will definitely happen
6. Mum will have a cup of tea today	not likely / likely / will definitely happen
7. I will grow taller than a house	not likely / likely / will definitely happen
8. Apples will grow on my plum tree	not likely / likely / will definitely happen
9. The sun will melt ice cream	not likely / likely / will definitely happen