For Joshua

Milestone Maths B4
by
Kathy Gonzalez

Answers

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Milestone

Parent's Introduction

Welcome to Milestone Maths, the mathematics curriculum designed especially for Australian home schoolers. This course has been developed with Australian home schoolers particularly in mind but will also be useful for after school study with or without a tutor. The series follows the Australian Curriculum (v 9.0). Level B corresponds to year 1 and this book is intended for term four, with four lessons per week for 10 weeks. If desired, the fifth day may be used to complete any outstanding work or for review, extension and enrichment activities which are occasionally suggested in the text.

The course is gradual, systematic and thorough. Mathematics is a sequential subject where one concept is built upon another and thorough mastery of each step is essential for true understanding of the whole. This is reflected in Milestone Maths by presenting new topics sequentially and in a manner that builds from the known to the unknown. Review is built into the program and the needs of students with different abilities are catered for by pacing guidelines and supplementary practice activities.

RESOURCES

Besides the student books, the only essential resource for this curriculum is a set of Sumstix (also known as Cuisenaire rods). These may be purchased from the place where you obtained this book. Visit the following link for details:

www.milestonemaths.com.au/what-are-sumstix/

Occasional lessons will require simple resources that you should already have around the house. It would be a good idea at the beginning of each week to have a quick look over the lessons for the week to see if any aditional resources need to be prepared. This will usually be the only preparation required on your part.

PLACEMENT AND PROGRESS

For placement of students who have come from other programs, please see the advice on the milestone maths website. Search for placement.

While it is impossible to make one fixed series of lessons to meet the needs of all students, this series is designed to be flexible enough to fulfill the needs of the majority of students. With this in mind, please note that you do not need to complete this book in exactly one school term. If your child is finding the concepts easy, you may consider doing two lessons in one day and conversely, if the subject matter is more challenging, break the lesson up across two or more days. Lessons or activities marked with a graduation cap icon are advanced and are included to challenge the more motivated/talented students. Advanced material will usually become 'mainstream' at some point later in the course.

QUESTIONS OR COMMENTS?

If you have any questions whatsoever about any aspect of this course's implementation, or if you need help understanding any maths related concept, please do not hesitate to contact the author at

author@milestonemaths.com.au

What are Milestones and Checkpoints?

A Milestone corresponds to a chapter or unit of work. In the student book, the start of each Milestone is marked with a picture of a milestone and the milestone title. Checkpoints are end of chapter reviews and are essentially lessons dedicated to review and practice of the key concepts and skills introduced in the Milestone. If your child has particular difficulty completing a checkpoint, it is recommended that you spend some time reviewing the concepts taught in the Milestone before moving on. If they have difficulty with only one or two activities, review the concept imediately and make a note to practise those skills often during the introductory phase of subsequent lessons until the skill is mastered.

The child should be able to complete each activity in a checkpoint lesson independently, or with minimal help, after you have read the instructions. At this level the child may use Sumstix as much as they need to while completing checkpoints, lessons and drills, although they should be encouraged to transition to completing the drills without assistance.

ADAPTATIONS FOR CHILDREN WITH SPECIAL NEEDS

If your child has special learning needs, there are a number of adaptations possible.

For older yet illiterate students: you should read all instructions to the student just as you would to a young child that is still learning to read.

For children who have difficulty writing: you may act as scribe and have the child tell you what to write. When numbers or equations are required, have the child "build" the answers using the number and game flashcards. Also, use the number bond flashcards for drills instead of the written drills until writing is easy. Unless the child has a physical handicap that makes writing difficult or impossible, I would suggest that you gently encourage them to do more and more writing on their own every day. Begin by taking turns with the pencil - you write one number then the child writes one, etc and slowly increase the amount of writing that your child does until they achieve independence.

For children who need a slower pace: some lessons could consist entirely of warm up/review activities or the student book activities could be assigned over two or more days.

Extra writing practice can be done on a reusable drawing board (eg whiteboard, LCD tablet, etc.), on scrap paper or in a separate exercise book.

For children who need a faster pace: If your child is finding the lessons very easy and is learning the concepts quickly, you may consider doing two lessons a day and completing the Review and Practice section of only one of the lessons. Special care needs to be taken that the child is mastering the drills at this pace as well. Over learning is always a good thing however, a particularly bright child will need to be challenged to maintain motivation.

Parent Notes

In Student Book B4 your child will:

- Learn how to measure objects to the nearest cm with a ruler.

- Compare the capacity of various vessels.

- Read and produce simple pictograms.

- Find half of even numbers less than or equal to 20.

- Complete their learning of the addition and subtraction facts to a total of 10.

Milestone 16

MILESTONE GOALS

After completing this Milestone your child will:

- Know how to measure things with a ruler.

- Have a basic understanding of capacity.

- Know a few basic capacity relationships: eg 4 cups = 1L.

SPECIAL TEACHING DIRECTIONS

This Milestone has been intentionally written in such a way to encourage as much practical activity as possible. Measurement is a highly useful everyday skill and it is best learned through practical experience. One caution to observe is to ensure the child understands that the zero on the ruler must line up with the end of whatever is being measured.

LESSON 122

The second activity in this lesson, measuring to the nearest cm, is advanced an only presented to facilitate the "hands on" activity that comprises the next lesson. If it is too difficult for your child to understand, skip over it and just help the child as much as necessary with the measuring of real world objects for the next lesson.

LESSON 127

Paraphrase these instructions if necessary to help your child understand them. The important thing is that they get practise measuring the lengths and drawing straight lines with the ruler. If this activity is too difficult for your child, draw dots at all the corners (see completed picture below) and have the child join these with the ruler. You can then ask them to measure some of the lines.

1. Note: "Place your ruler on dot..." "dot" means the grid intersection inside the small circle.

2. Place the zero of you ruler on dot 1 and draw a 9cm long horizontal line to the right.

3. Place your ruler on dot 2 and draw a 15 cm long horizontal line to the right.

4. Join the ends of the two lines you have drawn with a diagonal (sloping) line (to join dots 1 and 2).

5. Join the other side of the roof with a diagonal (sloping) line.

6. Place your ruler on dot 3 and draw a line that is 6cm long down from the base of the roof.

7. Draw another 6cm vertical line down from dot 4.

8. Join the two vertical lines you just drew with a horizontal line across the bottom.

9. Place your ruler on dot 5 and draw a 2cm horizontal line and then draw a 2cm vertical line down from dot 5.

10. Draw two more lines to make a square.

11. Place your ruler on dot 7 and draw a 3cm horizontal line.

12. Draw a 5cm vertical line down from each end of the line you just drew. (Instructions continued over.)

13. Place your ruler on dot 6 and draw a 2cm

horizontal line and then draw a 2cm vertical line down from dot 6.

14. Draw two more lines to make a square.

15. Your house is finished! You may colour it in or decorate it if you wish.

Milestone 17

See notes for Milestone 7.

FLASHCARDS: AS–32 TO AS–35

Milestone 18

MILESTONE GOALS

After completing this Milestone your child will:

- Understand the concept of "sharing" a group evenly between two people.

- Be developing an understanding of how to divide an even number by two using Sumstix.

- Be aware that there is a relationship between doubling and halving (although they will probably not understand it at this stage).

SPECIAL TEACHING DIRECTIONS

This Milestone presents a rather abstract idea that is

usually taught later but using Sumstix it becomes accessible to younger children. The important thing is to have fun with your child and it is best to spend more time on the practical "hands on" aspect of the lessons than the written exercises (which you could omit if your child is finding them difficult). However, all the Review and Practice pages should still be completed.

Milestone 19

MILESTONE GOALS

At the end of this Milestone your child will:

- Be able to read a simple pictogram and extract information from it.

- Make conclusions based on pictograms.

- Draw a pictogram to represent supplied data.

- Collect data and draw a pictogram to represent it.

SPECIAL TEACHING DIRECTIONS

This Milestone is a practical one that should be enjoyable for your child to complete. The checkpoint activity is designed to be a "capstone" project and is not supposed to be a "test" so give your child as much help as necessary to complete it. You may like to make this a multi-day project
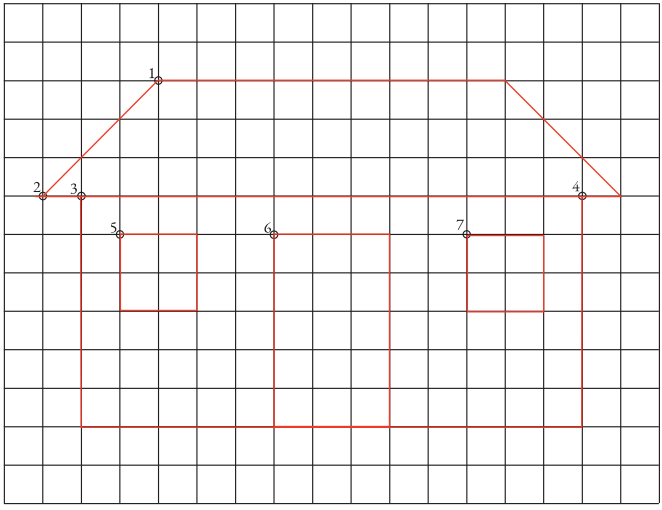
EXAMPLE OF COMPLETED EXERCISE FOR LESSON 127

and present the pictogram as a large poster. If your child does not like drawing you could print out pictures for your child to cut out and paste on the chart or make origami models to paste on the chart and make a more "3D" chart. Be creative!

Milestone 20

This is the final consolidation unit for the course. The number facts which are presented here in terms of number trios should already be familiar to the student as they have been practised since the first unit on addtion (Milestone 5).

FLASHCARDS: AS–1 TO AS–4

LESSON 159

Game rules (page 83): For two or more players. Each player needs a small counter (lentils coloured with texta or other small dry beans will work well as would small beads). You will also need one 10 sided die, or the 1-10 number cards from the number card deck shuffled and placed face down on the table. The youngest goes first. Roll the die (or draw a card from the deck). Advance your counter to the next sum that matches the number you have rolled. If there are no sums to match your number ahead, you must go BACK to the nearest matching sum. If another

counter is on the space you land on, roll/draw again. If your new number is higher than the sum on the space, you get to bump the other player back to the start. If your new number is lower, you go back to the start. You must roll/draw 10 to win.

NB: Fractions are written in diagonal in the answers for convenience. Kids should still be writing them with a horizontal line.

Emmy Echidna is back and super excited about this term.

We're going to start by measuring some things to see how big they are or how much they can hold. Then we'll find out how to share stuff with a friend in a way that's fair but also quick and easy. And, we'll also learn a little bit about some fancy maths pictures called pictograms.

And the most exciting part is that the sums and number bonds we'll be practising will be super easy this term because you already know most of them!
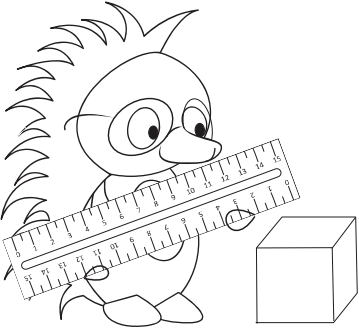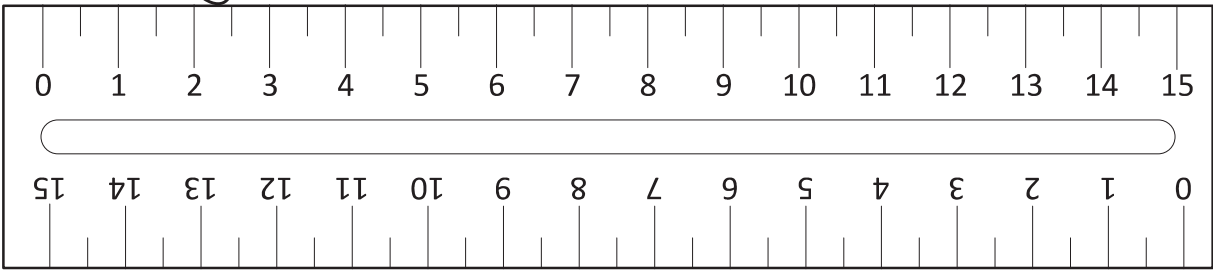
So grab your maths gear and let's get started!

Lesson 121

MEASURING LENGTH AND CAPACITY
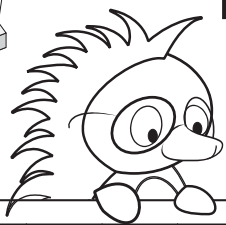
This is a ruler. We use it to measure things in centimetres.

A white Sumstick measures 1cm on every edge. Go ahead and measure one of your white sticks now!

Ask your parent to show you how to use the ruler properly.

There are some Sumstix drawn below. Measure each one with a ruler and write how many centimetres long it is. Then colour it to match the sticks in your set.

_____ **8** cm

_____ **6** cm

_____ **9** cm

_____ **3** cm

_____ **10** cm

4 − 3 = 1   7 + 3 = 10   2 + 3 = 5

8 + 0 = 8   7 − 2 = 5   2 + 1 = 3

2 − 1 = 1   5 − 4 = 1   8 − 6 = 2

10 − 8 = 2   7 − 3 = 4   9 − 3 = 6

5 − 2 = 3   7 − 6 = 1   4 + 5 = 9

⏳

3 + 7 = 10   3 + 6 = 9   5 + 4 = 9

5 + 3 = 8   1 + 9 = 10   1 + 8 = 9

4 + 5 = 9   7 + 0 = 7   9 + 1 = 10

6 + 3 = 9   1 + 6 = 7   2 + 6 = 8

2 + 8 = 10   1 + 1 = 2   3 + 5 = 8
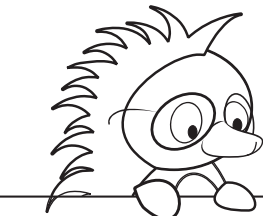
Measure each of these lines and write the length in centimetres.

_____ 3 cm

_____ 6 cm

_____ 9 cm
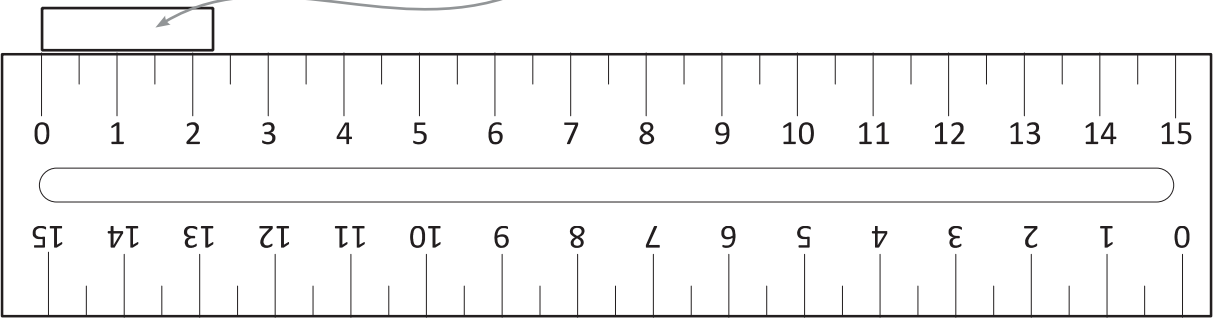
_____ 4 cm

Sometimes the things we want to measure are not an exact number of centimetres. Then we need to give the size to the **nearest** centimetre.

For example, this rectangle is 2cm long to the nearest centimetre.

Measure each of these lines and write the length to the nearest centimetre.

_____ 11 cm

_____ 5 cm

9 + 1 = 10   10 − 5 = 5   6 + 1 = 7

8 − 6 = 2   10 − 2 = 8   10 − 4 = 6

3 + 5 = 8   7 − 2 = 5   3 − 2 = 1

7 + 1 = 8   8 − 2 = 6   5 − 3 = 2

10 − 3 = 7   4 + 1 = 5   8 − 0 = 8

⏳

5 + 2 = 7   3 + 5 = 8   6 + 3 = 9

6 + 4 = 10   1 + 6 = 7   3 + 6 = 9

1 + 4 = 5   2 + 2 = 4   4 + 1 = 5

7 + 1 = 8   2 + 8 = 10   2 + 3 = 5

1 + 3 = 4   2 + 1 = 3   3 + 4 = 7
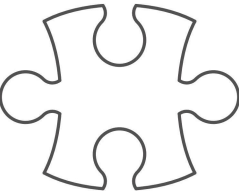
Let's have some fun today! Look around the house for some objects that are shorter than your ruler. Draw each object in the table below and then measure the length of the object to the nearest cm and write it next to your picture.

	3 cm

7 - 0 = __7__   7 - 5 = __2__   10 - 3 = __7__

10 - 7 = __3__   4 - 1 = __3__   1 + __1__ = 2

9 - 4 = __5__   __9__ + 1 = 10   8 - 0 = __8__

__1__ + 9 = 10   9 - 1 = __8__   8 + 2 = __10__

9 - 7 = __2__   9 - 2 = __7__   7 - 1 = __6__

⌛

8 + 0 = __8__   5 + 3 = __8__   2 + 6 = __8__

8 + 2 = __10__   4 + 6 = __10__   1 + 7 = __8__

6 + 1 = __7__   4 + 4 = __8__   4 + 5 = __9__

6 + 2 = __8__   3 + 2 = __5__   4 + 3 = __7__

5 + 5 = __10__   1 + 2 = __3__   1 + 8 = __9__

— 13 —
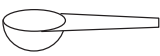
Lesson 124

Today we're going to learn about capacity. It's best if you can experiment with these measures yourself so ask Mum if you can use her measuring cups and some water, rice or something else you can pour. Be careful to clean up any mess that you make!

In the table below, write how many lots of the first container is required to fill the second container.
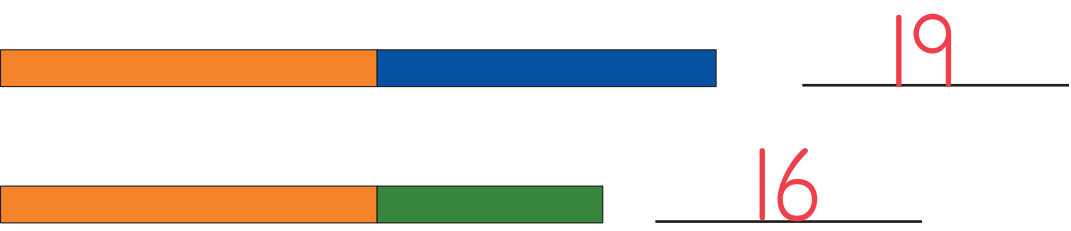
teaspoon	tablespoon	4
1 cup	1L	4
1/2 cup	1 cup	2
1/4 cup	1 cup	4
1/4 cup	1/2 cup	2
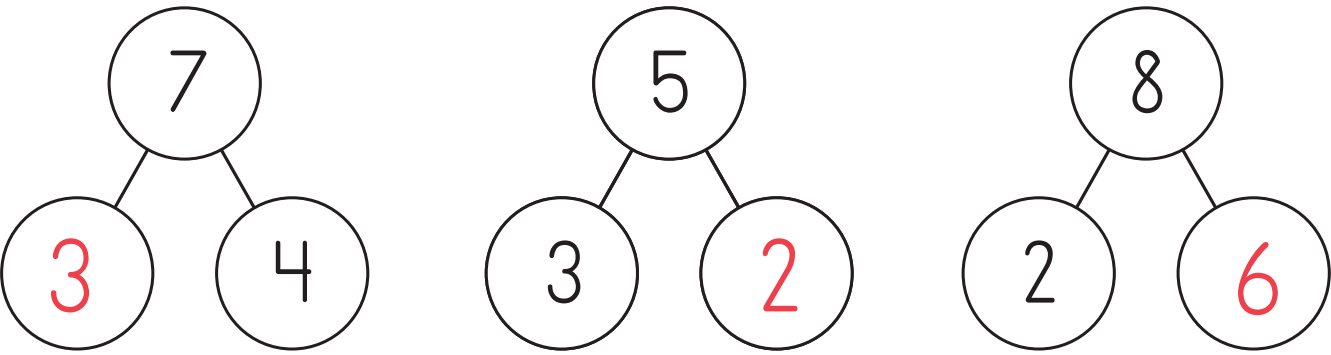
— 14 —

Fill in the missing numbers.

7 → 3, 4

5 → 3, 2

8 → 2, 6

Write the number represented by the train.

__19__

__16__

⌛

5 + 4 = __9__   6 + 3 = __9__   4 + 5 = __9__

9 + 1 = __10__   5 + 3 = __8__   3 + 2 = __5__

1 + 9 = __10__   3 + 7 = __10__   7 + 1 = __8__

3 + 4 = __7__   4 + 3 = __7__   6 + 1 = __7__

2 + 8 = __10__   2 + 2 = __4__   5 + 5 = __10__

— 15 —

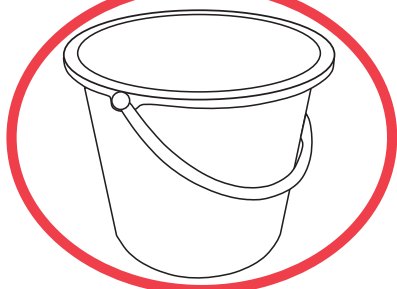## Lesson 125

Today we have a logical thinking exercise. Logical thinking is very important in maths so it's good to practise it! In each row below, circle the object which holds MORE water.
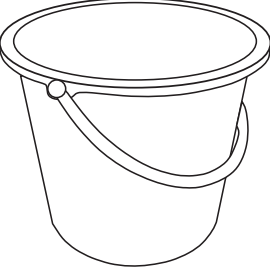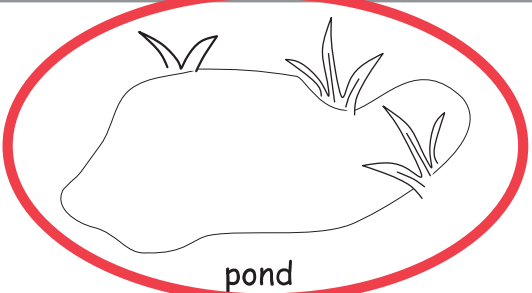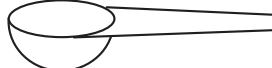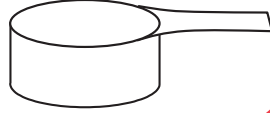
1 cup   (bucket - circled)

(bucket - circled)   1L

bucket   pond (circled)

1/4 cup (small)   1 cup (circled)

1L (circled)   1/2 cup
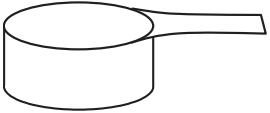
— 16 —

7 + 3 = 10   6 + 4 = 10   2 + 1 = 3

7 + 2 = 9   2 + 6 = 8   8 + 1 = 9

8 + 2 = 10   4 + 4 = 8   1 + 1 = 2

Write the number represented by the train.

_14_

1 + 3 = 4   3 + 1 = 4   1 + 7 = 8

8 + 0 = 8   1 + 8 = 9   3 + 6 = 9

2 + 5 = 7   4 + 6 = 10   3 + 5 = 8
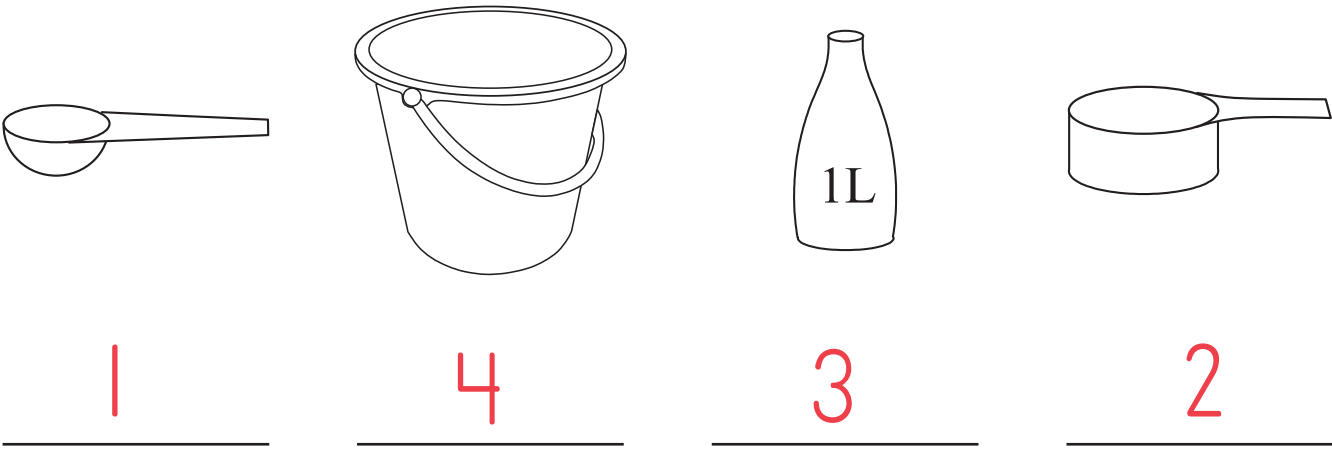
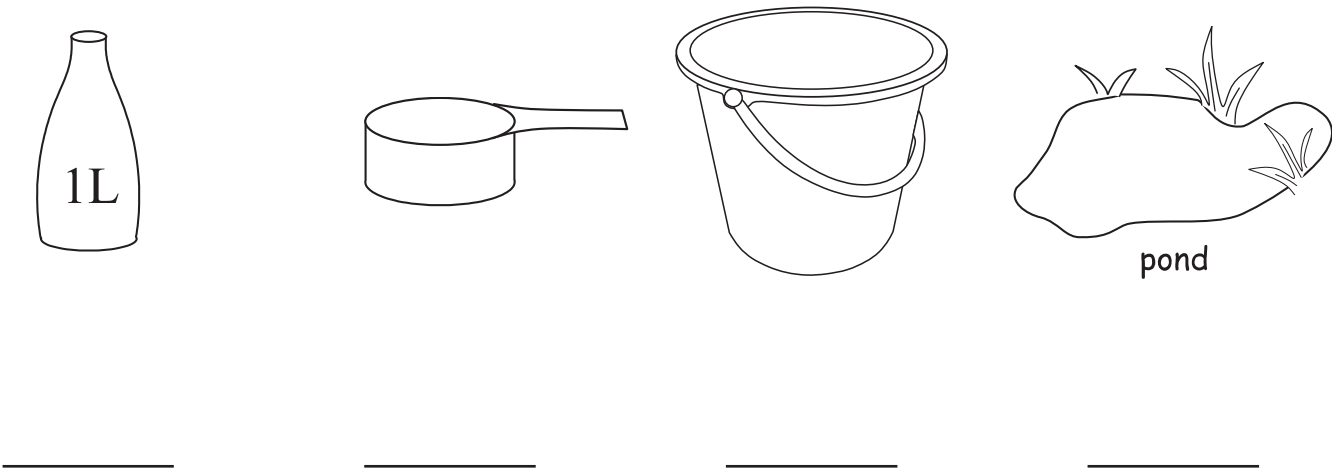6 + 2 = 8   1 + 4 = 5   5 + 2 = 7

1 + 6 = 7   2 + 7 = 9   4 + 1 = 5

17

Lesson 126

Write numbers under the containers to sort them from the one that holds the least to the one that holds the most.
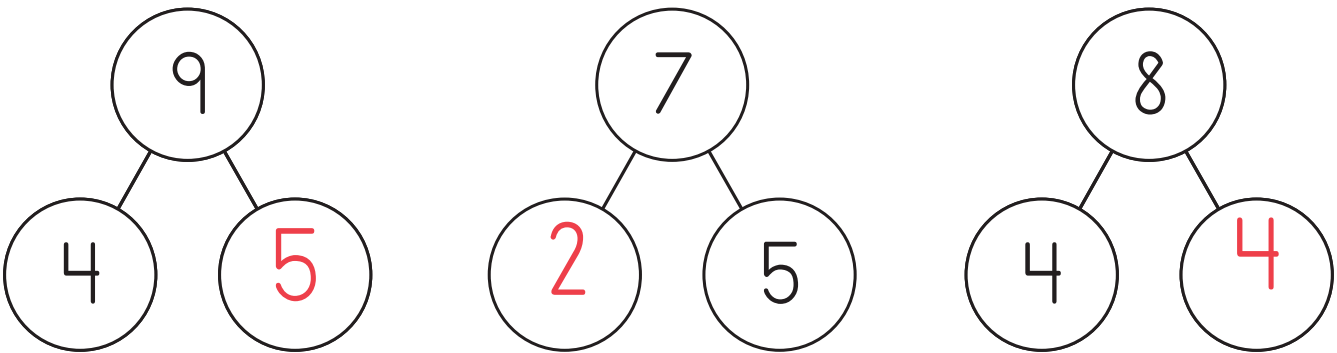
1   4   3   2

Write numbers under the containers to sort them from the one that holds the most to the one that holds the least.
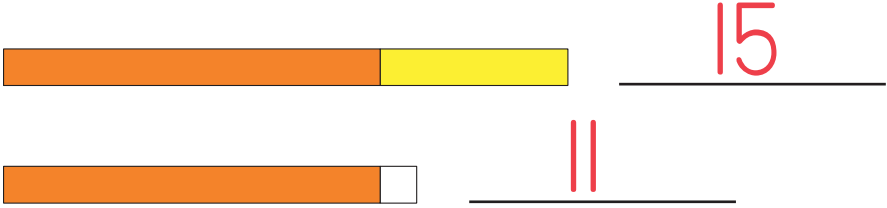
1L

pond

_____   _____   _____   _____

Next lesson I'm going to give you a challenge. To prepare, practise using your ruler to draw a straight line that is 5cm long. Ask a parent to help.

18

Fill in the missing numbers.

9
4   5

7
2   5

8
4   4

Write the number represented by the train.

_15_

_11_

1 + 3 = 4   4 + 1 = 5   1 + 2 = 3

5 + 2 = 7   4 + 3 = 7   3 + 6 = 9

3 + 1 = 4   1 + 8 = 9   1 + 6 = 7

5 + 5 = 10   7 + 3 = 10   8 + 0 = 8

8 + 2 = 10   2 + 3 = 5   1 + 9 = 10

19

Lesson 127

Today's lesson is a fun challenge. You will need a pencil, a ruler and and the instructions which your parent will read to you.
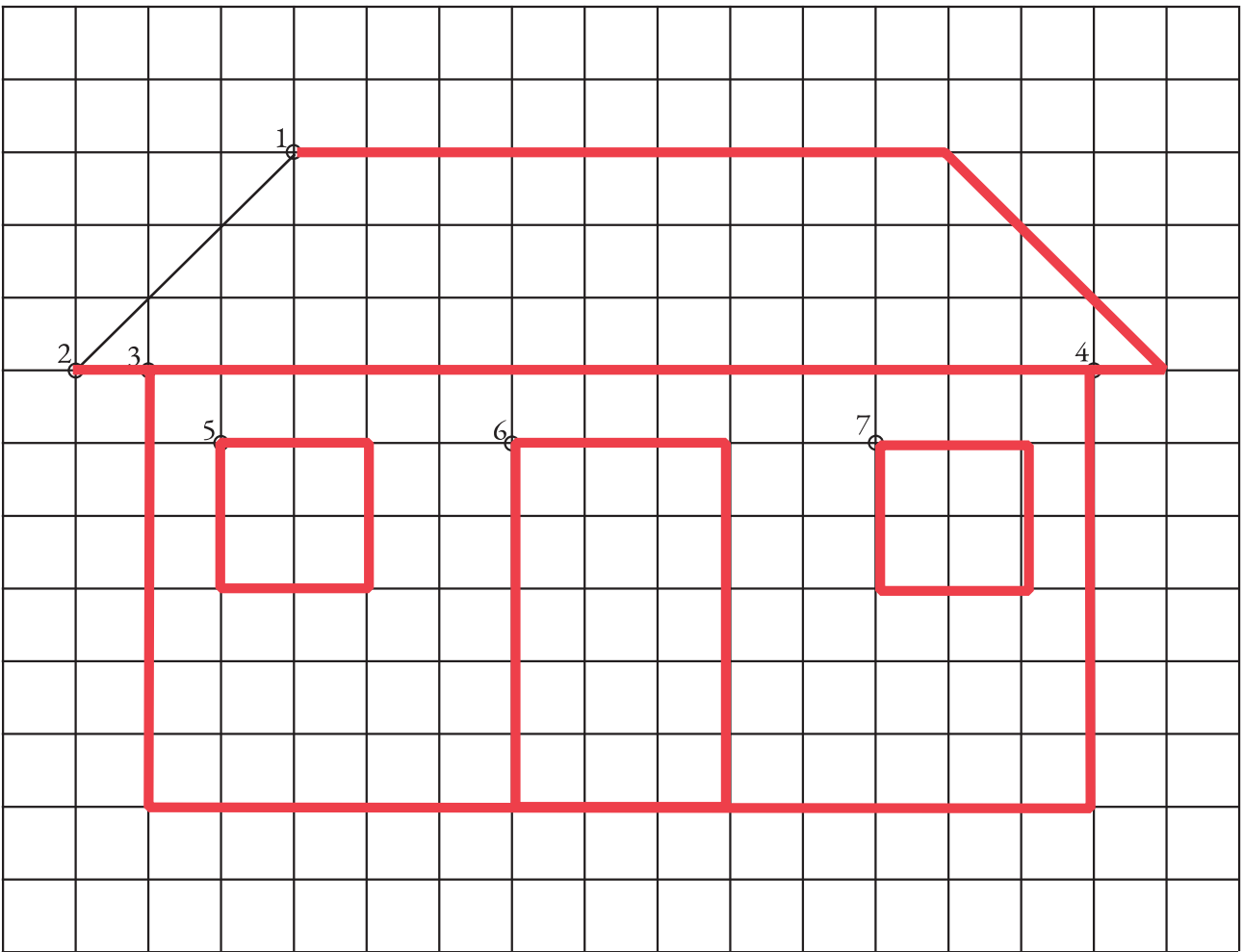
You will need to know the meaning of two words:

horizontal means a line that is going side-to-side like this: —

vertical means a line that is going up-and-down like this: |

Now listen and follow carefully as your parent reads the instructions.

Note: Instructions appear on the last page of this book and also in the teacher book for your convenience.

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9 − 2 = _7_   3 − 1 = _2_   7 − 5 = _2_

_4_ + 5 = 9   1 + _4_ = 5   8 − 5 = _3_

6 + _4_ = 10   8 − 2 = _6_   10 − 8 = _2_

6 + _1_ = 7   8 − 4 = _4_   8 − 6 = _2_

1 + _1_ = 2   1 + _7_ = 8   _6_ + 3 = 9

⧗

2 + 8 = _10_   8 + 1 = _9_   7 + 1 = _8_

2 + 6 = _8_   9 + 1 = _10_   3 + 7 = _10_

6 + 3 = _9_   5 + 4 = _9_   5 + 3 = _8_

2 + 2 = _4_   4 + 6 = _10_   3 + 2 = _5_

3 + 4 = _7_   2 + 7 = _9_   7 + 0 = _7_

--- 21 ---

Lesson 128
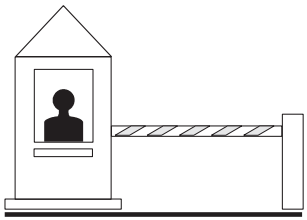
Checkpoint 16

Measure each of the sticks with a ruler and write how many centimetres long it is. Then colour it to match the sticks in your set.

_7_ cm

_10_ cm

_1_ cm

_3_ cm

Which holds more?

--- 22 ---

5 + 5 = _10_   5 + 2 = _7_   2 + 3 = _5_

1 + 9 = _10_   1 + 7 = _8_   3 + 7 = _10_

3 + 5 = _8_   4 + 6 = _10_   4 + 1 = _5_

1 + 6 = _7_   2 + 1 = _3_   7 + 1 = _8_

1 + 8 = _9_   1 + 2 = _3_   5 + 4 = _9_

7 + 2 = _9_   2 + 8 = _10_   8 + 0 = _8_

6 + 1 = _7_   2 + 7 = _9_   8 + 1 = _9_

1 + 4 = _5_   1 + 1 = _2_   6 + 3 = _9_

7 + 3 = _10_   3 + 1 = _4_   6 + 4 = _10_

7 + 0 = _7_   3 + 2 = _5_   4 + 4 = _8_

2 + 5 = _7_   6 + 2 = _8_   3 + 4 = _7_

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Lesson 129

NUMBERS THAT ADD TO SIX

Build a Sumstix sandwich for the number 6 and use it to complete the following number bonds:

Draw a six rainbow. Use a different colour for each line.

0 1 2 3 3 4 5 6

Here's a game that combines strategy and number facts!

Addition Four in a Row

Print or draw an addition grid like the one to the right. Find a friend and two different coloured markers or pencils.

The object of the game is to write four answers in a row before your opponent. Be a good sport and let your friend go first. They may choose any square to write the answer to the corresponding addition fact in. Then you have a go and do the same.

Keep alternating turns until one of you has four answers in a row. If either player writes the wrong answer the answer gets crossed out and the square becomes "out of bounds."

Visit https://milestonemaths.com.au/addition-four-in-a-row/ for the grid (or scan the QR code)

Scan the QR code below to download the grid!

--- 24 ---

Count down from 20 to 10.

20 19 18 17 16 15 14 13 12 11 10

Write the mirror equations.
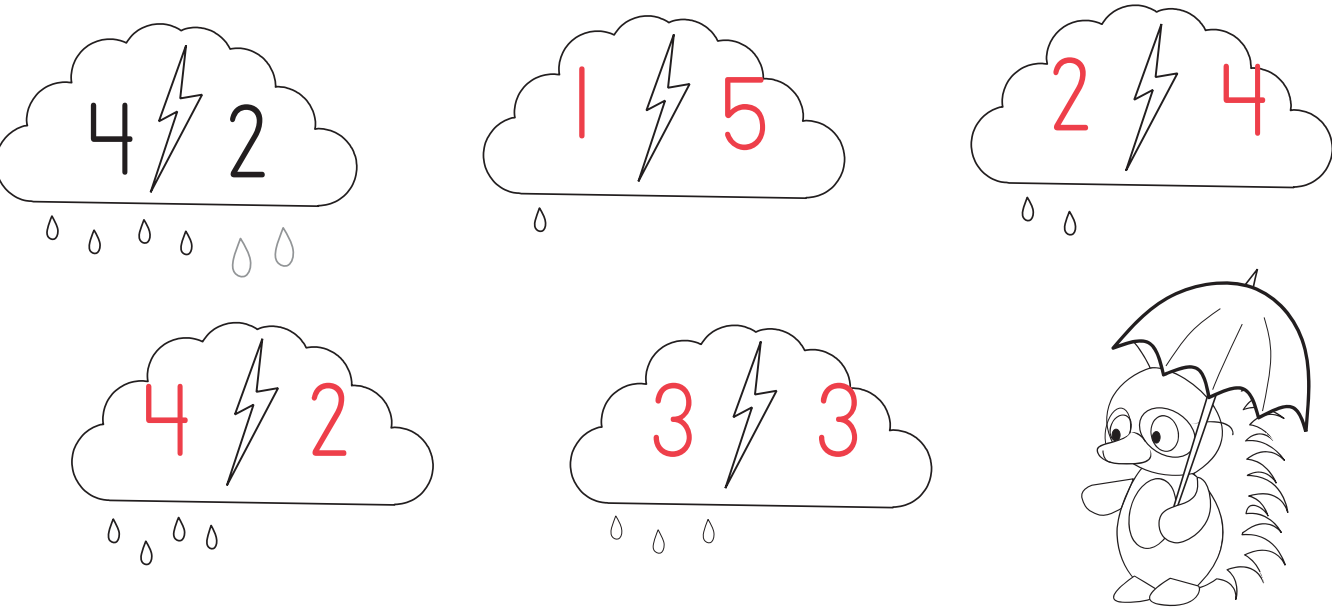
$2 + 4 = 6$

$4 + 2 = 6$

$6 - 1 = 5$

$6 - 5 = 1$
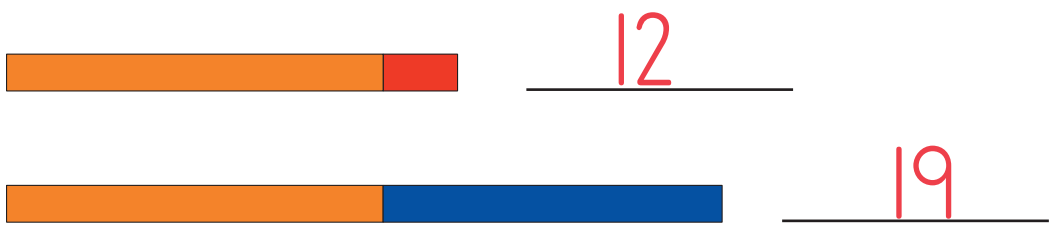
$8 + 0 = 8$ $3 + 4 = 7$ $5 + 3 = 8$

$8 + 1 = 9$ $4 + 3 = 7$ $9 + 1 = 10$

$6 + 3 = 9$ $2 + 6 = 8$ $2 + 2 = 4$

$6 + 4 = 10$ $3 + 6 = 9$ $8 + 2 = 10$

$4 + 4 = 8$ $4 + 5 = 9$ $1 + 3 = 4$

Lesson 130

$2 + 4 = 6$ $5 + 1 = 6$ $4 + 2 = 6$

$1 + 5 = 6$ $4 + 2 = 6$ $3 + 3 = 6$

$0 + 6 = 6$ $2 + 4 = 6$ $6 + 0 = 6$

$6 - 3 = 3$ $6 - 6 = 0$ $6 - 4 = 2$

$6 - 1 = 5$ $6 - 2 = 4$ $6 - 5 = 1$

$6 - 0 = 6$ $6 - 4 = 2$ $6 - 3 = 3$

Draw raindrops under each cloud to make six raindrops in total. Write the number of drops there were and the number you drew inside the cloud. The first one is done for you.
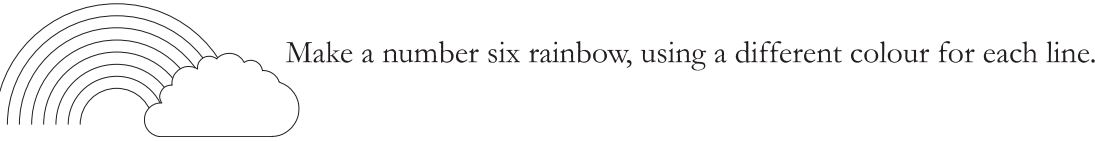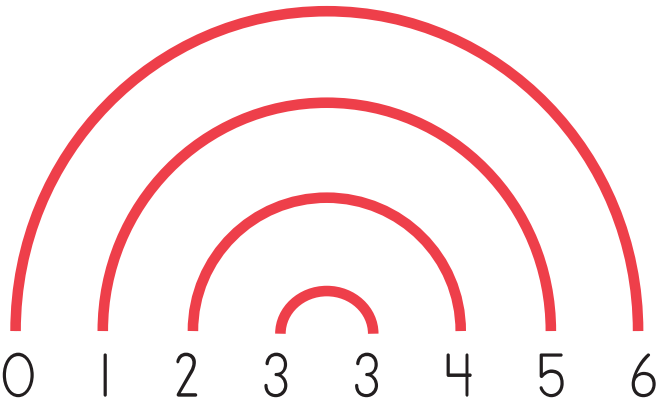
Write the number represented by the train.

 12

 19

Fill in the missing number then write the four equations represented by the bond.

$3 + 4 = 7$ $7 - 3 = 4$

$4 + 3 = 7$ $7 - 4 = 3$
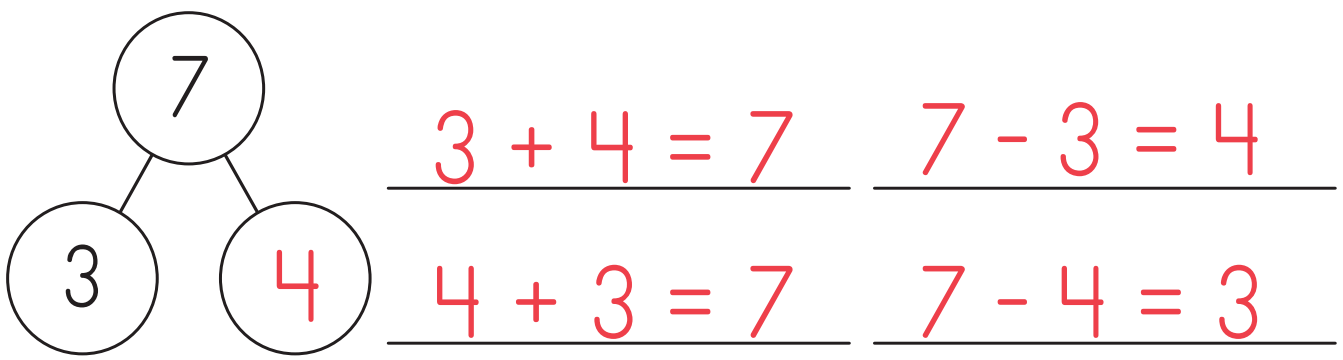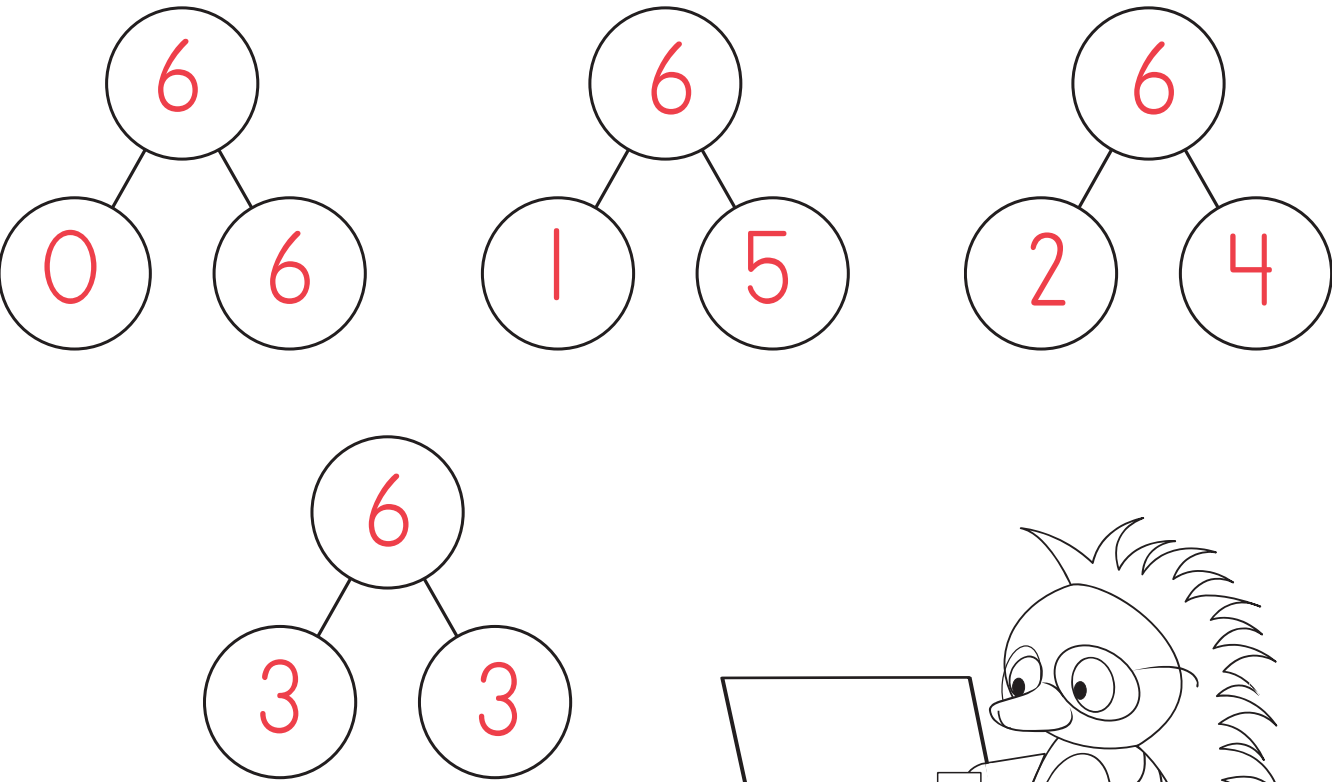
$8 + 0 = 8$ $1 + 9 = 10$ $6 + 1 = 7$

$7 + 3 = 10$ $5 + 3 = 8$ $3 + 2 = 5$

$5 + 2 = 7$ $2 + 6 = 8$ $2 + 2 = 4$

$1 + 4 = 5$ $6 + 4 = 10$ $2 + 3 = 5$

$7 + 1 = 8$ $5 + 4 = 9$ $5 + 5 = 10$

Lesson 131

Make a number six rainbow, using a different colour for each line.

0 1 2 3 3 4 5 6

Make a number bond for each line on the rainbow. Use a coloured pencil/texta to match the rainbow if you like.

7 + 0 = 7

8 − 4 = 4

4 − 3 = 1

7 + 2 = 9

4 + 3 = 7

9 − 1 = 8

7 − 4 = 3

6 + 2 = 8

8 − 7 = 1

4 + 6 = 10

2 + 7 = 9

6 + 3 = 9
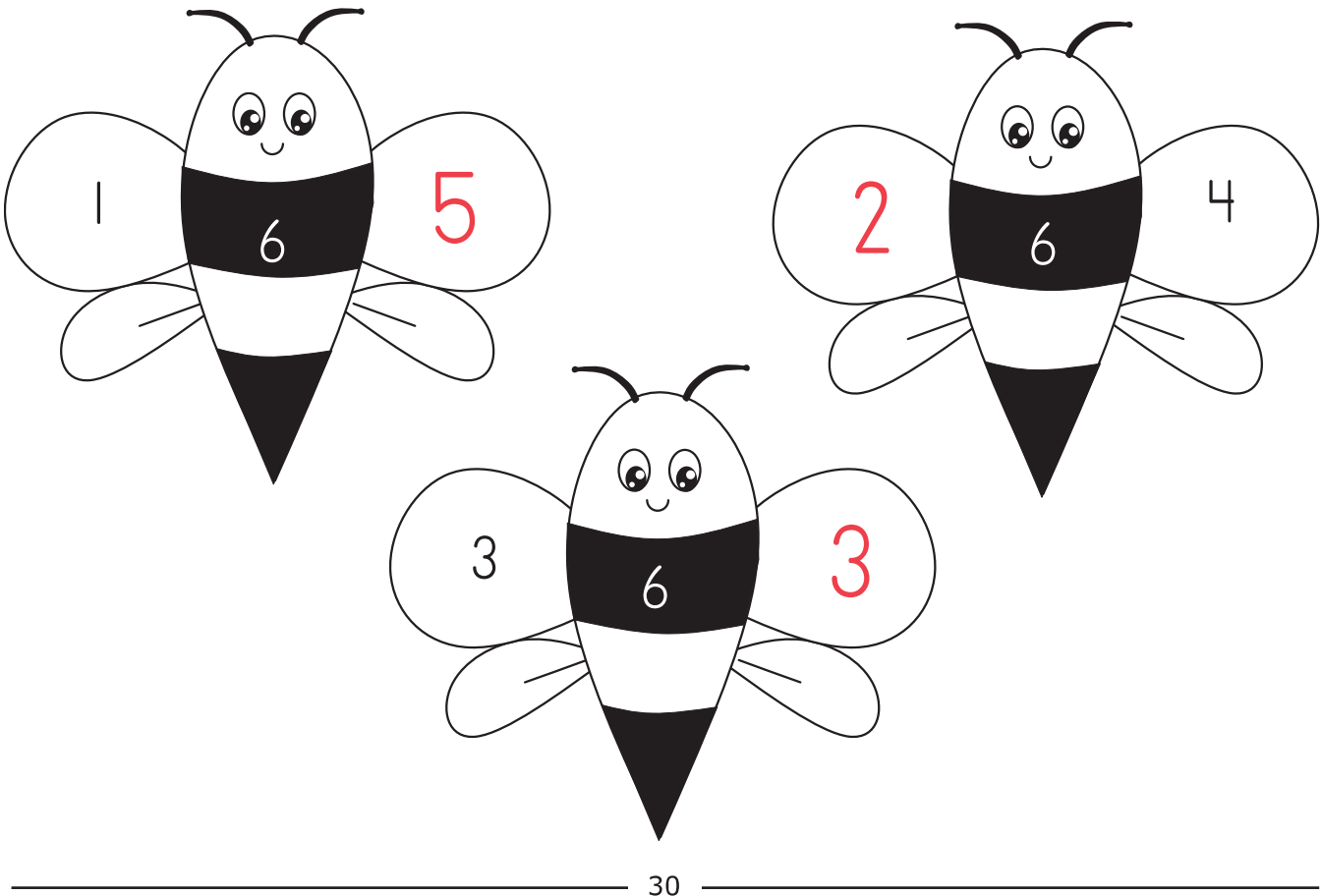
4 − 1 = 3

3 + 6 = 9

4 + 5 = 9

⏳

8 + 1 = 9

3 + 7 = 10

8 + 2 = 10

1 + 7 = 8

1 + 6 = 7

2 + 1 = 3

6 + 3 = 9

2 + 8 = 10

9 + 1 = 10

4 + 5 = 9

2 + 5 = 7

4 + 1 = 5

1 + 2 = 3

1 + 1 = 2

3 + 5 = 8

6 + 0 = 6

6 − 1 = 5

2 + 4 = 6

0 + 6 = 6

3 + 3 = 6

1 + 5 = 6

6 − 4 = 2

6 − 2 = 4

6 − 1 = 5

6 − 0 = 6

5 + 1 = 6

2 + 4 = 6

4 + 2 = 6

6 − 3 = 3

1 + 5 = 6

Make each bee add to six by writing a number on the "blank" wing.

Write the number represented by the train.
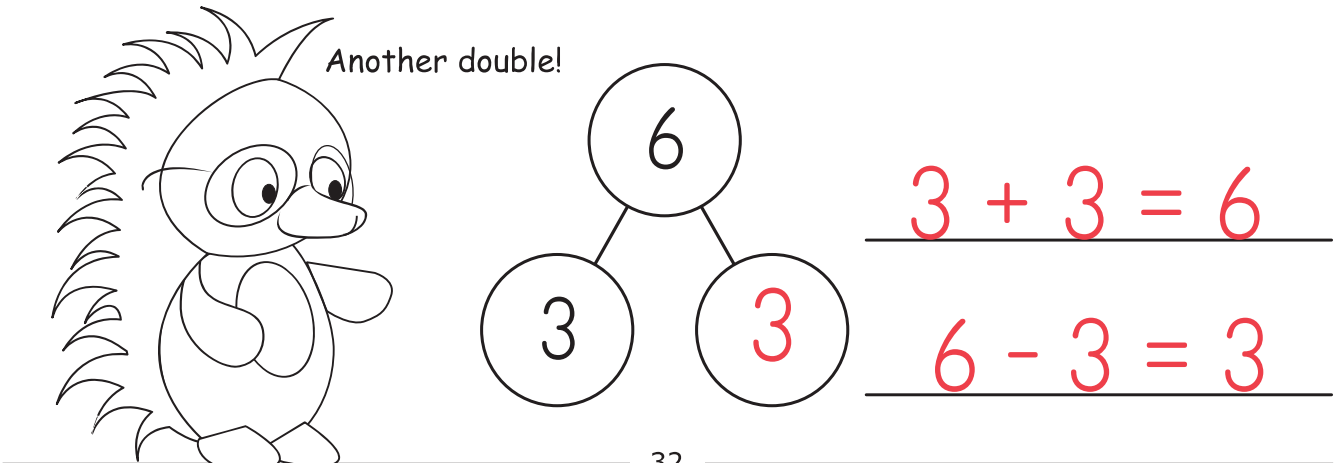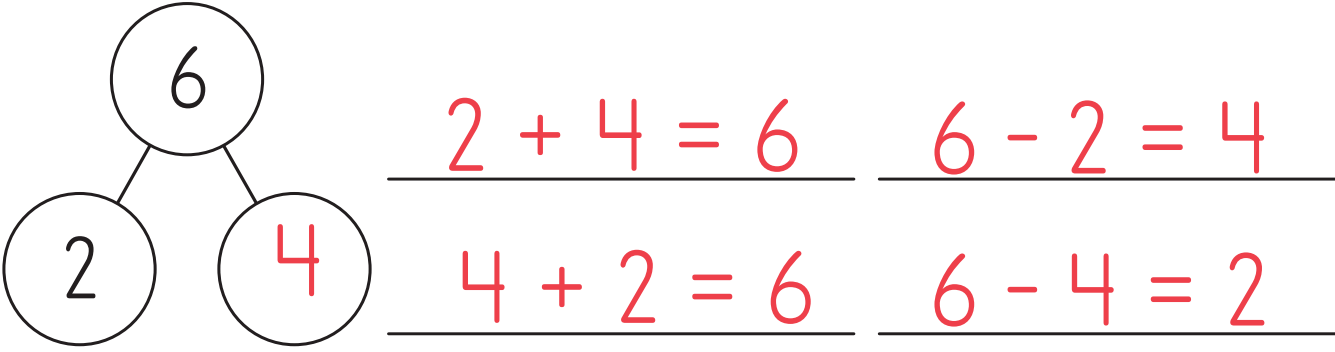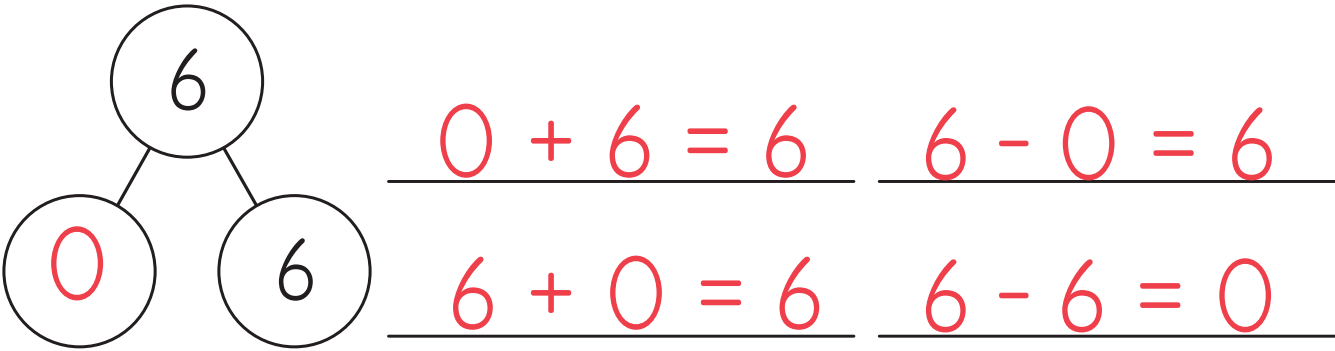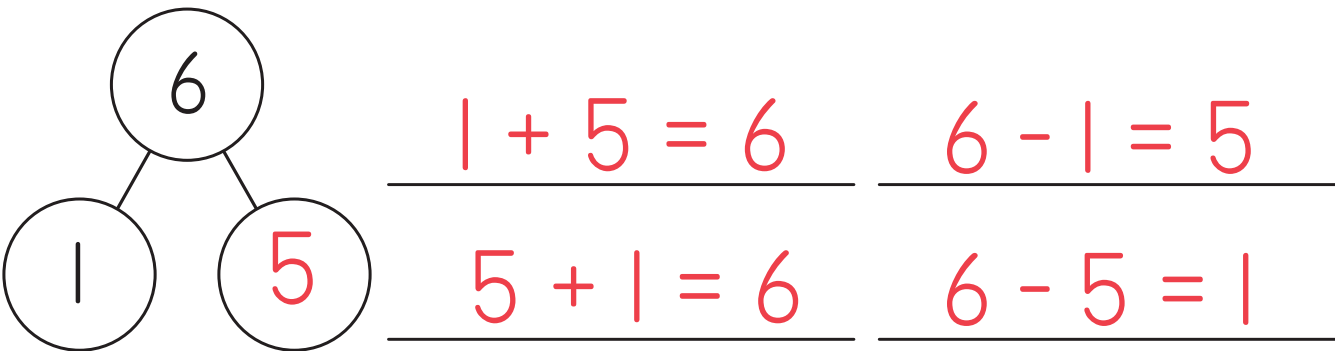

19

17

 Write the mirror equations.

3 + 3 = 6

6 − 0 = 6

$3 + 3 = 6$

$6 - 6 = 0$

⏳

1 + 6 = 7

8 + 0 = 8

3 + 1 = 4

2 + 1 = 3

8 + 2 = 10

2 + 8 = 10

6 + 4 = 10

5 + 2 = 7

5 + 4 = 9

7 + 1 = 8

7 + 2 = 9

3 + 4 = 7
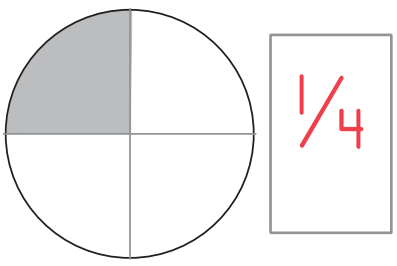
6 + 3 = 9

2 + 5 = 7

2 + 6 = 8

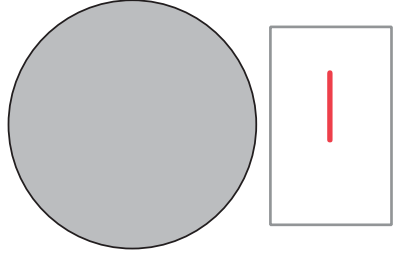Fill in the missing number then write the four equations represented by the bond.

$1 + 5 = 6$ $6 - 1 = 5$
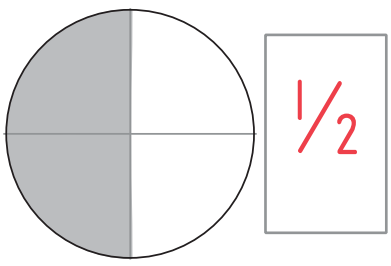
$5 + 1 = 6$ $6 - 5 = 1$

$0 + 6 = 6$ $6 - 0 = 6$

$6 + 0 = 6$ $6 - 6 = 0$

$2 + 4 = 6$ $6 - 2 = 4$

$4 + 2 = 6$ $6 - 4 = 2$

Another double!

$3 + 3 = 6$

$6 - 3 = 3$

Write the fraction of the shape that is shaded. Write 1 if the whole shape is shaded.

 $\frac{1}{4}$ 1 $\frac{1}{2}$

6 - 3 = 3   6 - 4 = 2   6 - 2 = 4

6 - 0 = 6   6 - 1 = 5   6 - 5 = 1

6 - 6 = 0   6 - 3 = 3   6 - 2 = 4

⏳

2 + 1 = 3   2 + 7 = 9   1 + 9 = 10

8 + 1 = 9   1 + 8 = 9   4 + 2 = 6

4 + 3 = 7   3 + 7 = 10   6 + 0 = 6

2 + 5 = 7   3 + 3 = 6   1 + 5 = 6

5 + 5 = 10   3 + 2 = 5   2 + 6 = 8

33

6 - 3 = 3   6 - 1 = 5   6 - 6 = 0

6 - 2 = 4   6 - 5 = 1   6 - 4 = 2

6 - 0 = 6   6 - 3 = 3   6 - 2 = 4

2 + 4 = 6   1 + 5 = 6   2 + 4 = 6

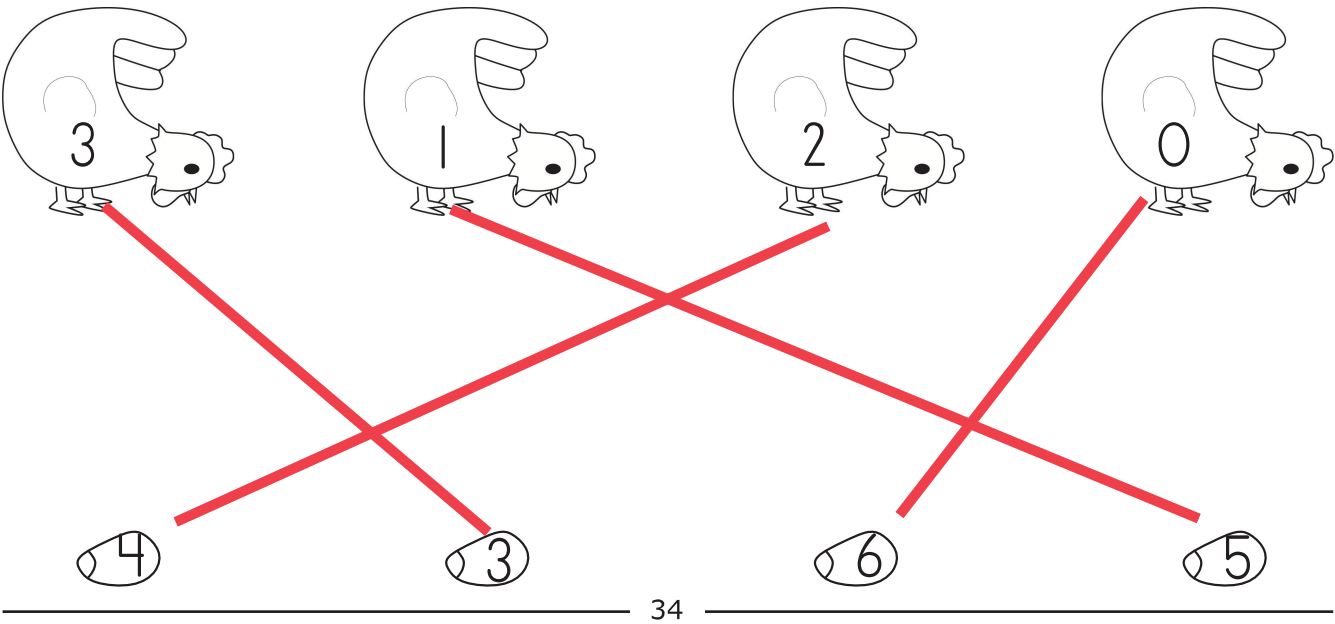3 + 3 = 6   0 + 6 = 6   3 + 3 = 6

0 + 6 = 6   2 + 4 = 6   1 + 5 = 6

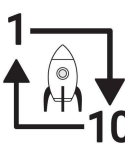Join the hens to the corn kernals so that the numbers on them add to six.

34

🚀 Write a countdown from 20 to 10.

20 19 18 17 16 15 14 13 12 11 10

Write the numbers in each group in order from biggest to smallest.

5	19	6	17	18	7
19	6	5	18	17	7

⏳

6 + 4 = 10   3 + 6 = 9   2 + 7 = 9

4 + 2 = 6   7 + 2 = 9   5 + 1 = 6

2 + 6 = 8   3 + 7 = 10   3 + 3 = 6

3 + 4 = 7   1 + 2 = 3   1 + 8 = 9

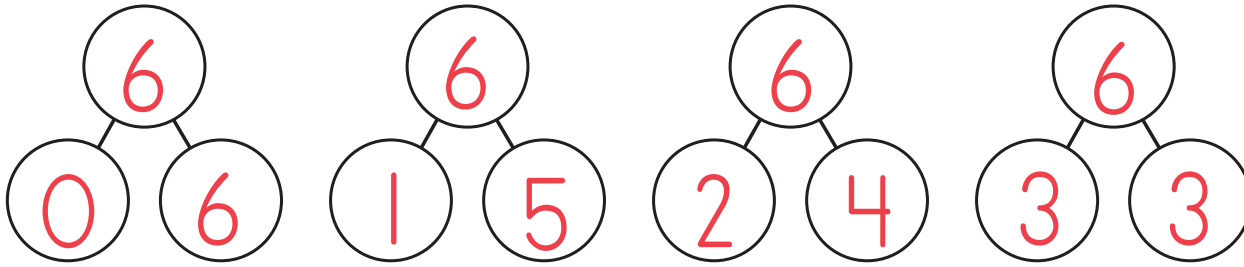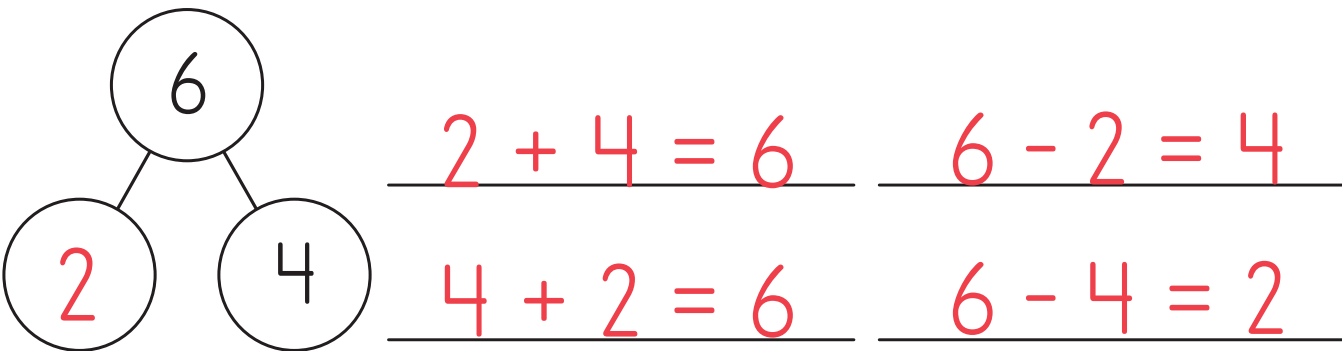1 + 4 = 5   2 + 3 = 5   7 + 0 = 7

35

Can you remember the number bonds for six yet? Try to write them here without looking back.

Make a number rainbow for six. Use a different colour for each line.

0   1   2   3   3   4   5   6

Fill in tbe missing number in the number bond and write the four equations represented by it.

2 + 4 = 6   6 - 2 = 4

4 + 2 = 6   6 - 4 = 2

36

1 + 4 = 5   5 - 3 = 2   7 - 0 = 7

3 + 6 = 9   9 - 7 = 2   4 - 1 = 3

9 - 2 = 7   5 + 1 = 6   9 - 4 = 5

10 - 7 = 3   7 - 1 = 6   8 - 0 = 8

1 + 2 = 3   1 + 8 = 9   1 + 3 = 4

---

1 + 3 = 4   2 + 1 = 3   1 + 7 = 8

9 + 1 = 10   5 + 2 = 7   4 + 1 = 5

1 + 5 = 6   7 + 1 = 8   8 + 0 = 8

5 + 1 = 6   1 + 6 = 7   6 + 4 = 10

3 + 5 = 8   4 + 2 = 6   4 + 5 = 9
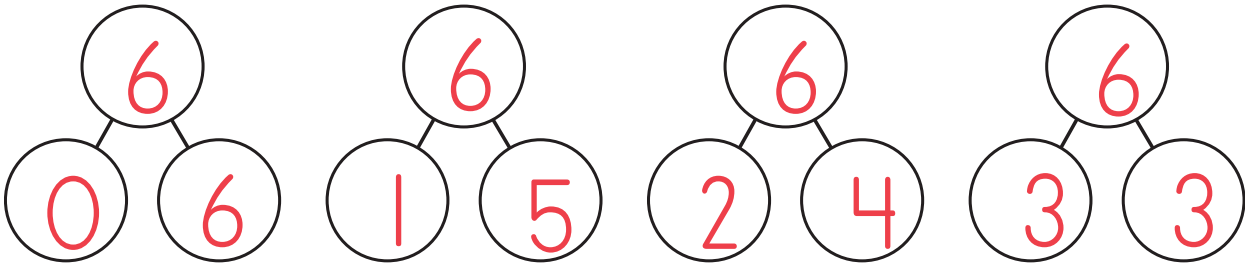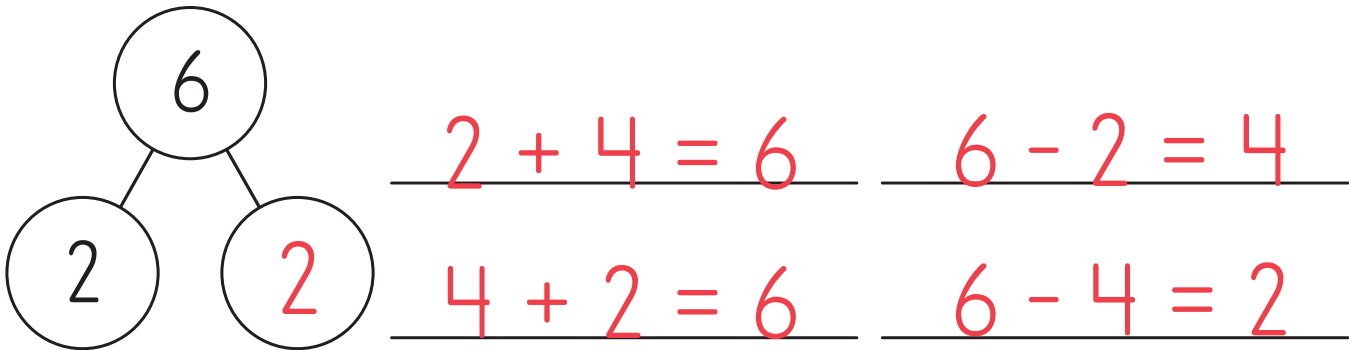
37

Make a number six rainbow, using a different colour for each line.
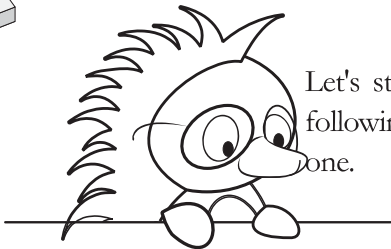

0 1 2 3 3 4 5 6
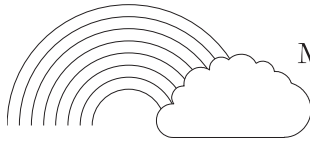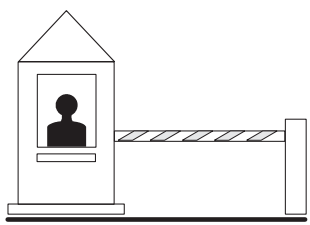
Write the number bonds for six and then colour them to match your rainbow.

Fill in the missing number then write the four equations represented by the bond.

2 + 4 = 6   6 - 2 = 4
4 + 2 = 6   6 - 4 = 2

38

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9 - 2 = 7   5 - 3 = 2   8 + 1 = 9

10 - 5 = 5   3 + 1 = 4   10 - 8 = 2

8 - 6 = 2   9 - 6 = 3   7 - 0 = 7

10 - 9 = 1   9 - 4 = 5   9 - 8 = 1

10 - 2 = 8   3 - 2 = 1   6 + 3 = 9

---

2 + 7 = 9   1 + 4 = 5   2 + 5 = 7

2 + 4 = 6   3 + 4 = 7   3 + 7 = 10

7 + 3 = 10   4 + 2 = 6   4 + 6 = 10

3 + 2 = 5   6 + 2 = 8   3 + 3 = 6

4 + 3 = 7   4 + 4 = 8   6 + 0 = 6

39

Let's start with what should be an easy review question. Which of the following pictures shows a circle that has been cut in half? Tick the right one.

I hope you picked this one , and I hope you remember that when we cut something in half we cut it into two pieces that are **exactly** the same.

Now, imagine we want to cut a sumstix in half (don't try to do it for real!). Here's a picture of an orange stick to scale. Draw a line where you think you would cut:
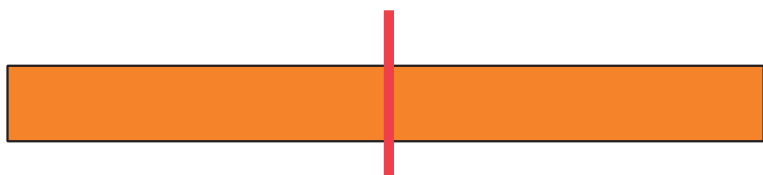
Now think: how can you check if you are correct? You need to have both sides exactly the same. You could measure it with your ruler but it is easier to just take a real ten rod and find two of which stick makes ten. Go ahead and do that now.

How did you go? Did you find that it was the yellow stick? I hope so! We'll say that the yellow sumstix "cut in half" the orange sumstix.

Now, here's a challenge. You can only find a rod that will cut in half some of your sumstix. Others (like nine, the blue stick) will not work. Can you sort your sumstix into two piles: ones that you can cut in half with another stick and ones you can't? You'll have a head start on the rest of this milestone if you can!

40

40-50 Write the number sequence from 40 to 50 on the number line.

$$\underline{40}\ \underline{41}\ \underline{42}\ \underline{43}\ \underline{44}\ \underline{45}\ \underline{46}\ \underline{47}\ \underline{48}\ \underline{49}\ \underline{50}$$
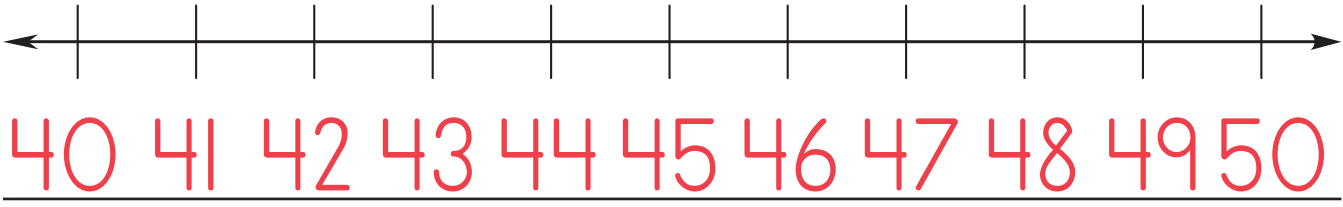
$\underline{1} + 5 = 6$ $2 + \underline{4} = 6$ $\underline{2} + 4 = 6$

$1 + \underline{5} = 6$ $0 + \underline{6} = 6$ $3 + \underline{3} = 6$

$\underline{3} + 3 = 6$ $\underline{2} + 4 = 6$ $\underline{0} + 6 = 6$

$6 + 1 = \underline{7}$ $4 + 3 = \underline{7}$ $1 + 3 = \underline{4}$

$7 + 2 = \underline{9}$ $7 + 3 = \underline{10}$ $1 + 4 = \underline{5}$

$2 + 8 = \underline{10}$ $3 + 1 = \underline{4}$ $1 + 6 = \underline{7}$

$1 + 2 = \underline{3}$ $6 + 4 = \underline{10}$ $1 + 7 = \underline{8}$

$5 + 1 = \underline{6}$ $9 + 1 = \underline{10}$ $5 + 3 = \underline{8}$

Lesson 138

Today we're going to talk about sharing. Imagine your mother gave you a treat to share with one of your siblings (brother or sister). Let's say it was some nuts. How can you be sure that each person gets the same amount? The easiest way is to divide them into two piles by taking one at a time: "One for you, and one for me, one for you and one for me, etc."

Ok, to keep our book nice and clean, we won't work with food but we'll use sumstix instead (sorry). Use white sumstix and count out as many sumstix as is shown in the pictures below. Then divide them in two equal piles and write the number of sumstix in one of those piles in the box next to the picture. I've done the first one for you.

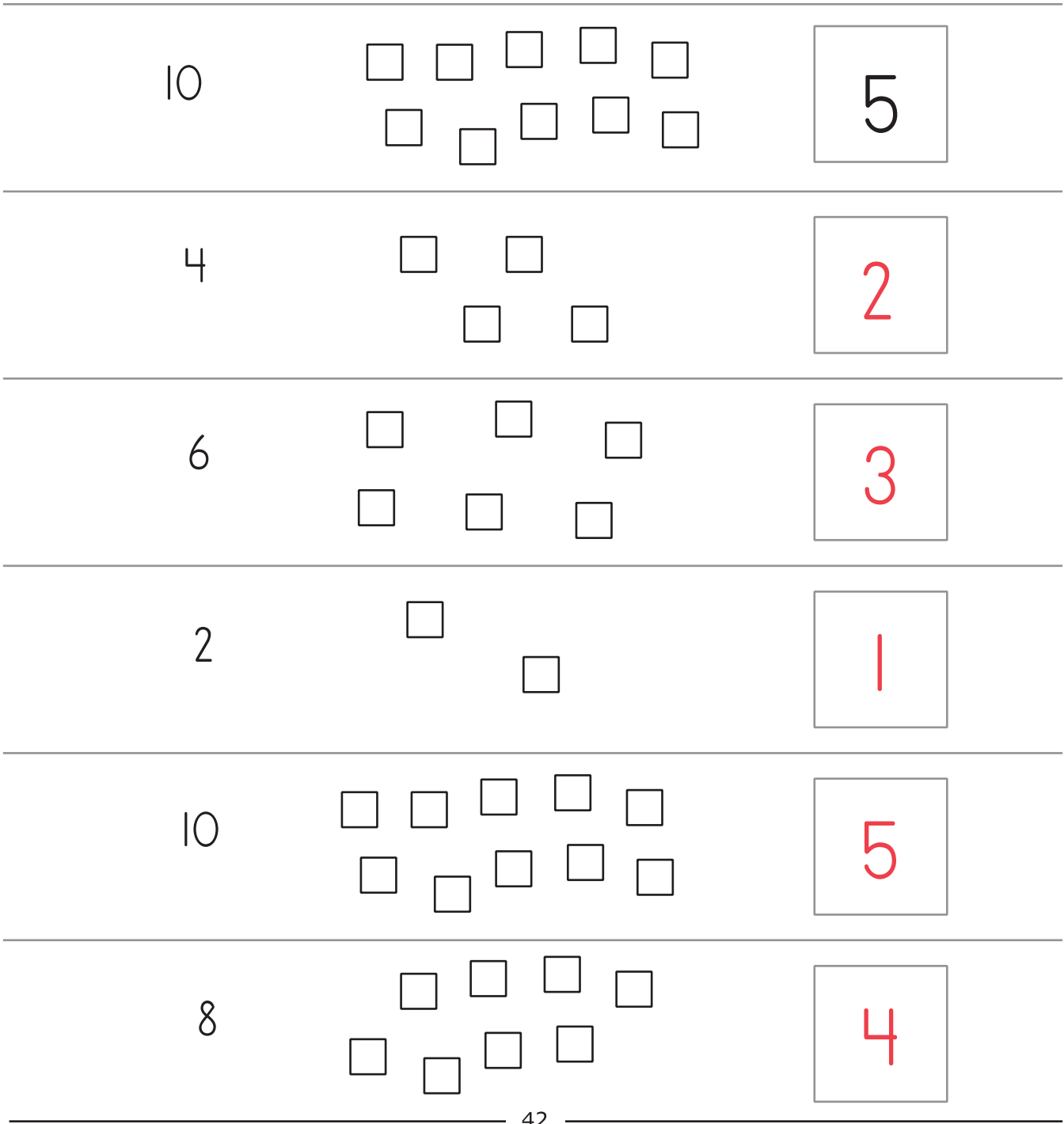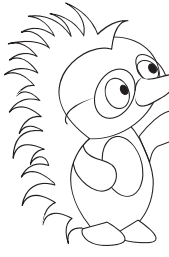
Write the fraction of the shape that is shaded.

  $1/4$ $1/2$ $3/4$

Write the number represented by the train.

  $\underline{13}$

  $\underline{16}$

$5 + 5 = \underline{10}$ $2 + 3 = \underline{5}$ $2 + 2 = \underline{4}$

$6 + 3 = \underline{9}$ $1 + 1 = \underline{2}$ $7 + 0 = \underline{7}$

$7 + 1 = \underline{8}$ $6 + 2 = \underline{8}$ $1 + 5 = \underline{6}$

$2 + 4 = \underline{6}$ $3 + 7 = \underline{10}$ $4 + 5 = \underline{9}$

$2 + 6 = \underline{8}$ $3 + 5 = \underline{8}$ $8 + 2 = \underline{10}$
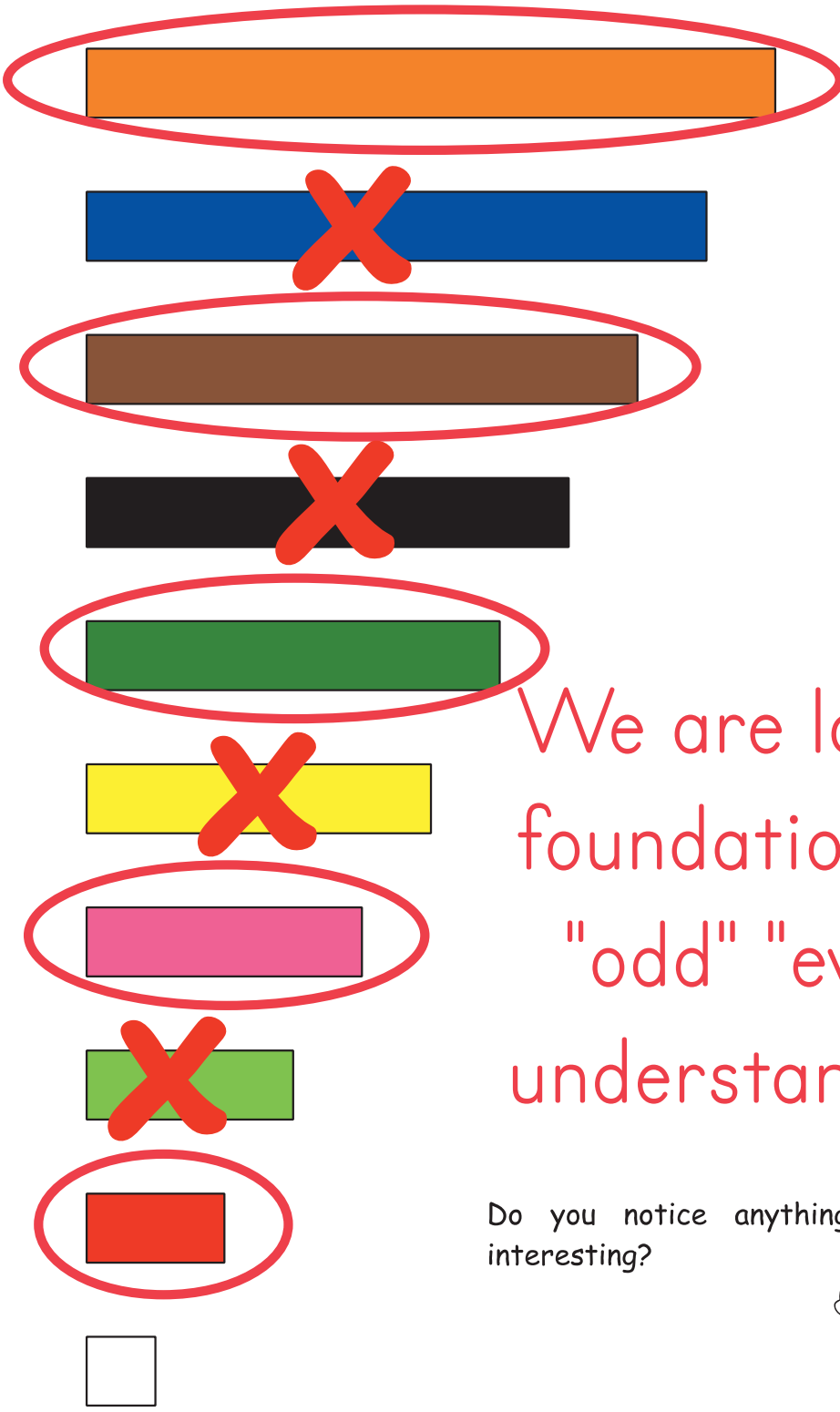

Lesson 139

Last lesson we learned about sharing things between two people. The way we did it usually works, and is pretty easy to do, but if there are a lot of things, it starts to take a lot of time, so we're going to work on finding a better way. But before we can do that, we need to find which Sumstix we can "cut in half" with another sumstix.

In the pictures of Sumstix below, cross out the ones that can't be cut in half with other Sumstix and circle the ones that can.

We are laying foundation for "odd" "even" understanding.

Do you notice anything interesting?

9 - 6 = __3__   __8__ + 1 = 9   __6__ + 0 = 6

6 - 2 = __4__   10 - 6 = __4__   9 - 7 = __2__

3 + __3__ = 6   7 - 2 = __5__   5 - 1 = __4__

3 + __2__ = 5   __2__ + 5 = 7   3 - 1 = __2__

8 - 4 = __4__   9 - 4 = __5__   1 + 8 = __9__

⏳

3 + 2 = __5__   2 + 5 = __7__   2 + 1 = __3__

4 + 4 = __8__   5 + 4 = __9__   1 + 8 = __9__

8 + 1 = __9__   6 + 0 = __6__   8 + 0 = __8__

4 + 6 = __10__   2 + 7 = __9__   3 + 4 = __7__

5 + 2 = __7__   4 + 1 = __5__   1 + 9 = __10__

Lesson 140

Last lesson you should have found that the following sumstix can be cut in half with another stick and the rest can't. Today I want you to write the number represented by the sumstix that cuts each of these sumstix in half.

$\frac{1}{2}$ of [orange bar] is __5__

$\frac{1}{2}$ of [brown bar] is __4__

$\frac{1}{2}$ of [green bar] is __3__

$\frac{1}{2}$ of [pink bar] is __2__

$\frac{1}{2}$ of [red bar] is __1__

We can do the same for trains representing bigger numbers. Try these:

$\frac{1}{2}$ of [orange+green bar] is __8__

$\frac{1}{2}$ of [orange+pink bar] is __7__

$\frac{1}{2}$ of [orange+brown bar] is __9__

__8__ + 2 = 10   8 - 3 = __5__   1 + 4 = __5__

__5__ + 4 = 9   4 - 2 = __2__   9 - 1 = __8__

6 + 0 = __6__   __6__ + 4 = 10   7 + __3__ = 10

3 + 2 = __5__   __1__ + 2 = 3   3 + 3 = __6__

2 - 1 = __1__   __7__ + 0 = 7   5 - 1 = __4__

⏳

7 + 1 = __8__   1 + 7 = __8__   3 + 5 = __8__

4 + 5 = __9__   2 + 6 = __8__   6 + 3 = __9__

3 + 7 = __10__   8 + 0 = __8__   1 + 6 = __7__

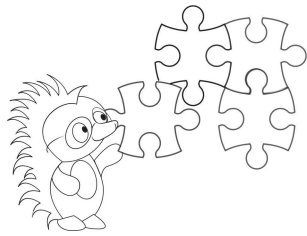2 + 1 = __3__   1 + 5 = __6__   2 + 8 = __10__

3 + 4 = __7__   6 + 2 = __8__   3 + 6 = __9__

Lesson 141

Let's put together all that we've done so far. Take ten white Sumstix and divide them evenly into two groups. Now take your orange Sumstix and find the Sumstix that "cuts it in half". Do you notice anything interesting? How many white Sumstix are there in each group? You should answer 5. What colour Sumstix cuts the orange Sumstix in half? Yes, yellow! So when we cut the Sumstix in half, it tells us how to share the number of objects it represents.

So now you should be able to solve the following problems. Use your Sumstix and "cut them in half" with other Sumstix.

$\frac{1}{2}$ of 10 is __5__ $\frac{1}{2}$ of 6 is __3__

$\frac{1}{2}$ of 8 is __4__ $\frac{1}{2}$ of 4 is __2__

Now solve these word problems.

Grandma gave Michael 8 dollar coins and told him to share them equally with his sister, Melissa. How many coins should Michael give to Melissa?

$\frac{1}{2}$ of __8__ is __4__ coins

Ruth was playing on the beach and found six pretty seashells. When she got them home, she found that half of them were broken and decided to throw them away. How many shells did Ruth have left.

$\frac{1}{2}$ of __6__ is __3__ shells

Write a cound down from 20 to 10.

$\underline{20}$ 19 18 17 16 15 14 13 12 11 10

$2 + \underline{4} = 6$ $4 + \underline{6} = 10$ $1 + \underline{9} = 10$

$1 + \underline{8} = 9$ $\underline{1} + 6 = 7$ $1 + \underline{4} = 5$

$0 + \underline{7} = 7$ $3 + \underline{6} = 9$ $\underline{3} + 5 = 8$

$3 + 3 = \underline{6}$ $4 + 2 = \underline{6}$ $2 + 5 = \underline{7}$

$5 + 4 = \underline{9}$ $4 + 4 = \underline{8}$ $5 + 3 = \underline{8}$

$1 + 4 = \underline{5}$ $9 + 1 = \underline{10}$ $2 + 8 = \underline{10}$

$3 + 6 = \underline{9}$ $2 + 6 = \underline{8}$ $3 + 4 = \underline{7}$

$3 + 2 = \underline{5}$ $4 + 5 = \underline{9}$ $5 + 2 = \underline{7}$

Lesson 142

We can extend the idea from last lesson to include big numbers. Make the numbers below with your sumstix (they should all start with an orange sumstix, remember). Then cut them in half by finding two of which rod makes a train of the same length.

$\frac{1}{2}$ of 12 is $\underline{6}$ $\frac{1}{2}$ of 18 is $\underline{9}$

$\frac{1}{2}$ of 14 is $\underline{7}$ $\frac{1}{2}$ of 16 is $\underline{8}$

Now solve these word problems:

Patricia picked sixteen flowers. Half of them were white and the rest were red. How many red flowers did Patricia pick?

$\frac{1}{2}$ of $\underline{16}$ is $\underline{8}$ flowers
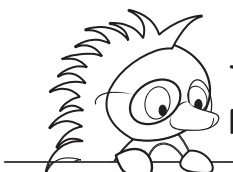
This one's a little bit tricky!

Sam sorted his twenty toy cars into two equal groups. How many cars were in one group?

$\frac{1}{2}$ of $\underline{20}$ is $\underline{10}$ cars

The farmer had a bad season and half of his crop was destroyed by bad weather. He was expecting to harvest eighteen tonnes of fruit but only achieved half of that. How many tonnes of fruit did the farmer harvest?

$\frac{1}{2}$ of $\underline{18}$ is $\underline{9}$ tonnes

$9 - 2 = \underline{7}$ $\underline{1} + 5 = 6$ $\underline{1} + 7 = 8$

$\underline{6} + 0 = 6$ $6 - 1 = \underline{5}$ $\underline{1} + 3 = 4$

$10 - 3 = \underline{7}$ $2 + \underline{7} = 9$ $1 + 1 = \underline{2}$

$\underline{7} + 1 = 8$ $10 - 7 = \underline{3}$ $5 - 3 = \underline{2}$

$8 + \underline{2} = 10$ $9 - 3 = \underline{6}$ $10 - 5 = \underline{5}$

$7 + 1 = \underline{8}$ $3 + 7 = \underline{10}$ $2 + 3 = \underline{5}$

$8 + 2 = \underline{10}$ $6 + 3 = \underline{9}$ $5 + 5 = \underline{10}$

$1 + 5 = \underline{6}$ $1 + 7 = \underline{8}$ $8 + 0 = \underline{8}$

$5 + 1 = \underline{6}$ $1 + 3 = \underline{4}$ $1 + 2 = \underline{3}$

$2 + 7 = \underline{9}$ $1 + 1 = \underline{2}$ $6 + 2 = \underline{8}$


Lesson 143

Now let's look at something very interesting. I want to show you how everything we've been learning about in this Milestone connects with all the sums we have been doing this year.

Fill in the missing number in the number bond below and then see if you can tell your parent something interesting about it.
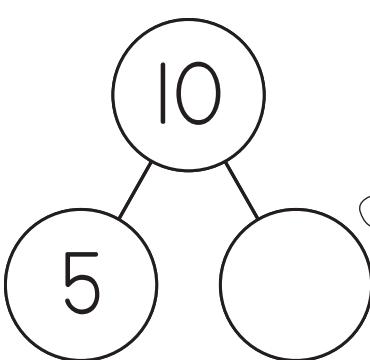
Do you remember what we call a number bond like this? Yes, it's a double! But what else can you notice? What happens if you build this number bond with your Sumstix?
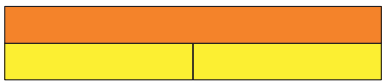
We've just cut our orange Sumstix in half! So a double is like the opposite of a half. Don't worry if this is not totally clear right now. It's pretty big kids' stuff!

For now, I just want you to practise using your sumstix to find the following doubles. You will memorise these next year.

Double 8 is $\underline{16}$
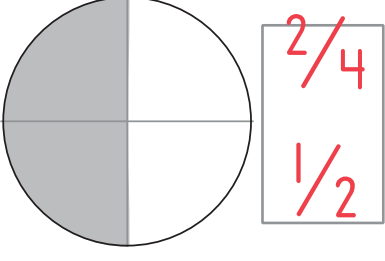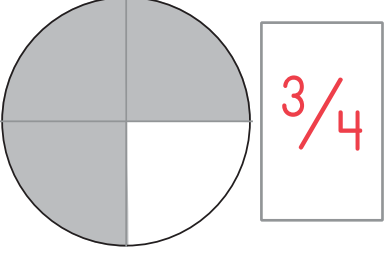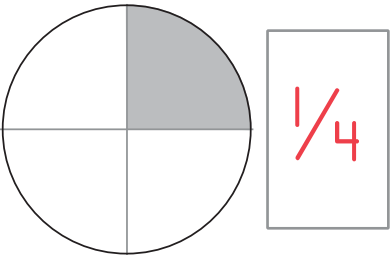
Double 6 is $\underline{12}$

Double 9 is $\underline{18}$

Double 7 is $\underline{14}$

Write the fraction of each shape that is shaded.

 $\frac{1}{4}$

 $\frac{3}{4}$

 $\frac{2}{4}$ $\frac{1}{2}$

$2 + \underline{5} = 7$ $3 + \underline{7} = 10$ $5 + \underline{5} = 10$

$4 + \underline{6} = 10$ $3 + \underline{7} = 10$ $\underline{2} + 8 = 10$

$0 + \underline{6} = 6$ $\underline{0} + 8 = 8$ $\underline{1} + 6 = 7$

$4 + 3 = \underline{7}$ $3 + 3 = \underline{6}$ $1 + 1 = \underline{2}$

$2 + 7 = \underline{9}$ $3 + 2 = \underline{5}$ $2 + 3 = \underline{5}$

$2 + 6 = \underline{8}$ $2 + 5 = \underline{7}$ $4 + 4 = \underline{8}$

$2 + 8 = \underline{10}$ $2 + 4 = \underline{6}$ $5 + 4 = \underline{9}$

$7 + 0 = \underline{7}$ $1 + 6 = \underline{7}$ $1 + 8 = \underline{9}$

 Lesson 144

CHECKPOINT 18

$\frac{1}{2}$ of is $\underline{4}$

$\frac{1}{2}$ of is $\underline{2}$
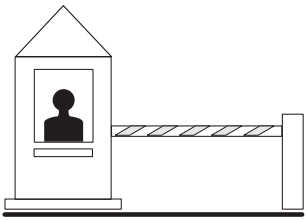
$\frac{1}{2}$ of is $\underline{9}$

$\frac{1}{2}$ of 10 is $\underline{5}$ $\frac{1}{2}$ of 4 is $\underline{2}$

$\frac{1}{2}$ of 8 is $\underline{4}$ $\frac{1}{2}$ of 2 is $\underline{1}$

$\frac{1}{2}$ of 16 is $\underline{8}$ $\frac{1}{2}$ of 20 is $\underline{10}$

$\frac{1}{2}$ of 14 is $\underline{7}$ $\frac{1}{2}$ of 12 is $\underline{6}$

$\underline{1} + 9 = 10$ $\underline{5} + 1 = 6$ $10 - 6 = \underline{4}$

$\underline{6} + 3 = 9$ $7 + \underline{2} = 9$ $9 - 1 = \underline{8}$

$\underline{3} + 5 = 8$ $\underline{1} + 7 = 8$ $\underline{1} + 5 = 6$

$4 - 2 = \underline{2}$ $4 + 1 = \underline{5}$ $5 + 3 = \underline{8}$

$9 + 1 = \underline{10}$ $8 - 1 = \underline{7}$ $\underline{1} + 4 = 5$

$9 + 1 = \underline{10}$ $7 + 1 = \underline{8}$ $1 + 4 = \underline{5}$

$5 + 1 = \underline{6}$ $4 + 6 = \underline{10}$ $1 + 3 = \underline{4}$

$7 + 2 = \underline{9}$ $8 + 1 = \underline{9}$ $3 + 4 = \underline{7}$

$1 + 7 = \underline{8}$ $1 + 5 = \underline{6}$ $4 + 2 = \underline{6}$

$4 + 1 = \underline{5}$ $5 + 3 = \underline{8}$ $6 + 2 = \underline{8}$

 Lesson 145

DATA DISPLAYS: PICTOGRAMS

I asked a bunch of my friends what their favourite fruit is. Here's what I found out:

 3 people like cherries. 5 people like apples.

 2 people like pears. 1 person likes strawberries.

and 8 people like bananas.

We can show this information in a pictograph like this. Study this picture and tell your parent some things you notice.

50-60 Write the sequence from 50 to 60 on the number line.

50 51 52 53 54 55 56 57 58 59 60

$\frac{1}{2}$

$\frac{1}{4}$
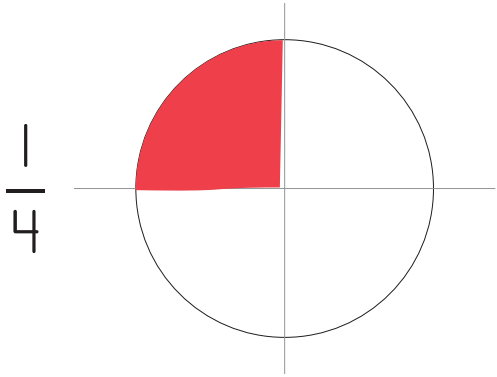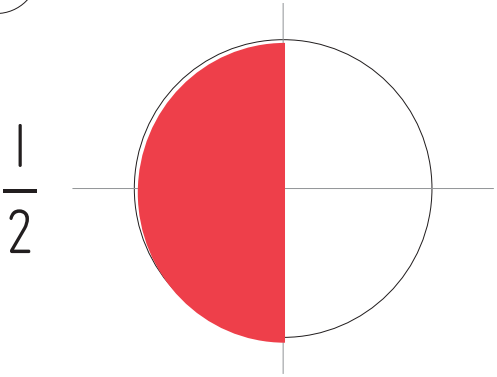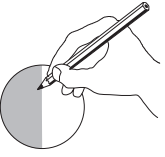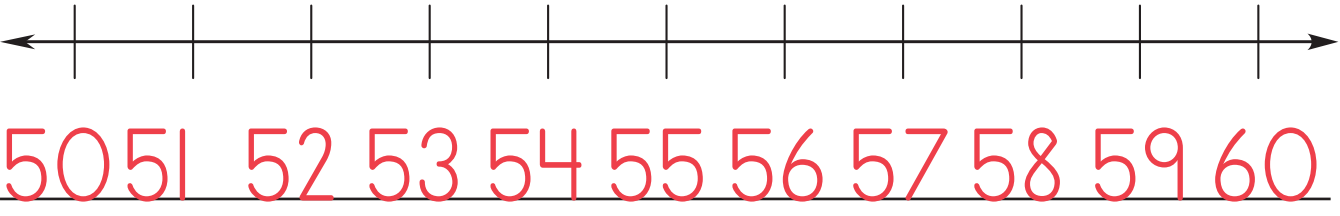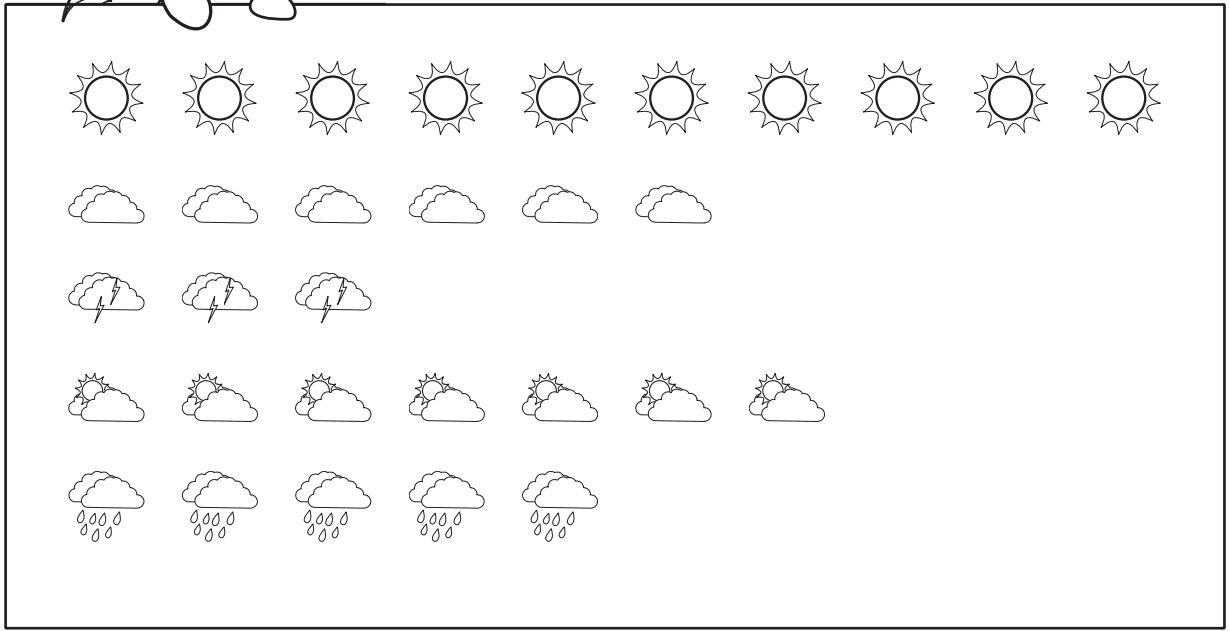
$5 + 4 = 9$ $3 + 6 = 9$ $2 + 2 = 4$

$7 + 3 = 10$ $4 + 6 = 10$ $2 + 7 = 9$

$3 + 2 = 5$ $1 + 9 = 10$ $8 + 0 = 8$

$1 + 3 = 4$ $4 + 1 = 5$ $3 + 3 = 6$

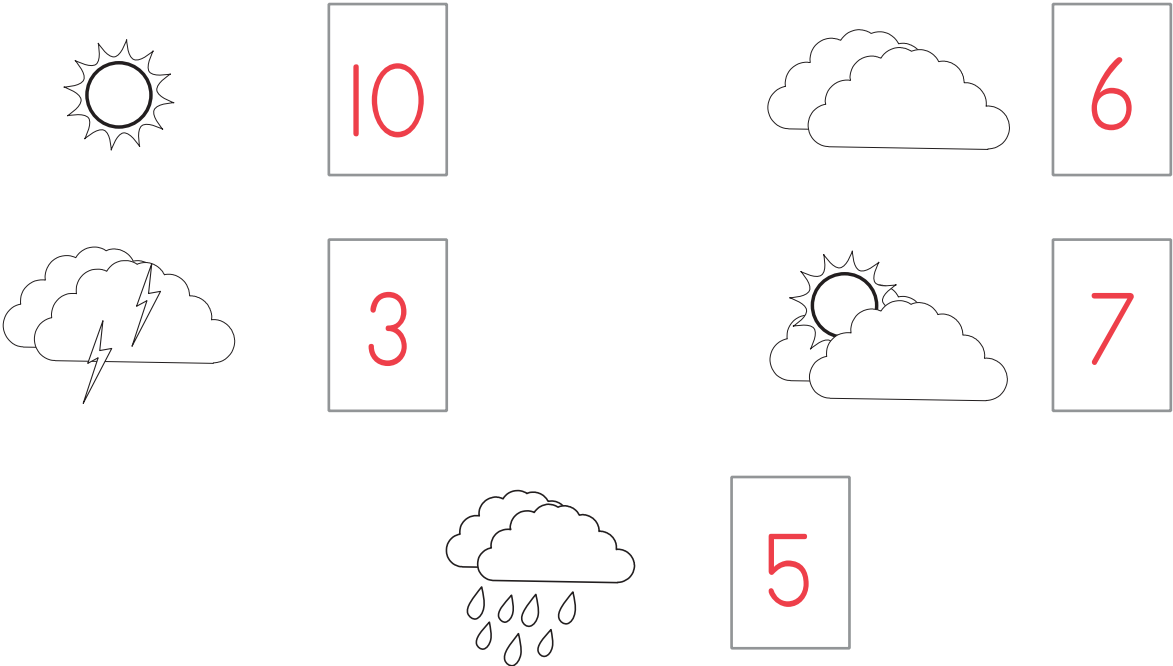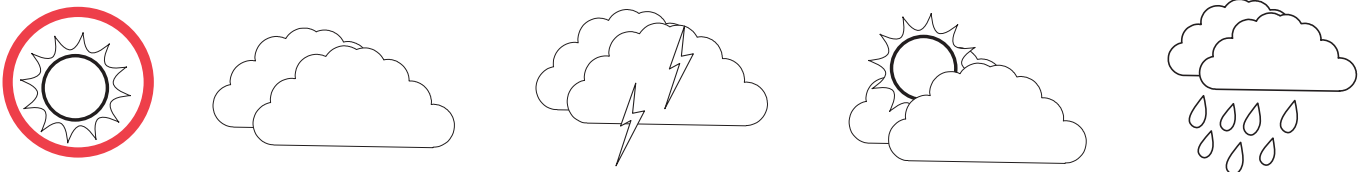$1 + 7 = 8$ $2 + 4 = 6$ $2 + 5 = 7$

Lesson 146
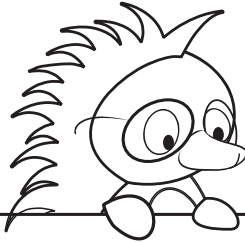
This chart shows the weather for each day in a month.

How many days was it... ? (Write your answers in the boxes.)

10

6

3

7

5

Circle the weather which happened most often during the month:

$4 + 3 = 7$ $7 - 2 = 5$ $4 - 1 = 3$

$7 - 1 = 6$ $10 - 4 = 6$ $3 - 1 = 2$

$2 + 3 = 5$ $1 + 4 = 5$ $8 - 3 = 5$

$10 - 1 = 9$ $6 + 3 = 9$ $2 + 8 = 10$

$2 - 1 = 1$ $8 - 5 = 3$ $10 - 7 = 3$

$7 + 2 = 9$ $6 + 0 = 6$ $1 + 2 = 3$

$1 + 5 = 6$ $4 + 4 = 8$ $3 + 4 = 7$

$8 + 1 = 9$ $6 + 2 = 8$ $7 + 1 = 8$

$2 + 6 = 8$ $1 + 6 = 7$ $7 + 0 = 7$

$4 + 2 = 6$ $4 + 5 = 9$ $8 + 2 = 10$

Lesson 147
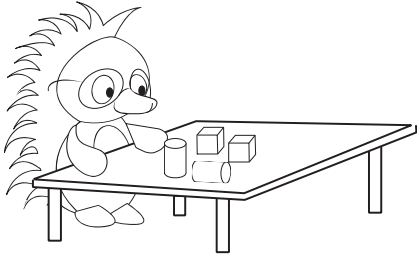
John sorted his blocks by shape. This is what he found:

7   5   8

3   4
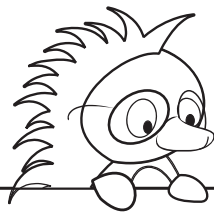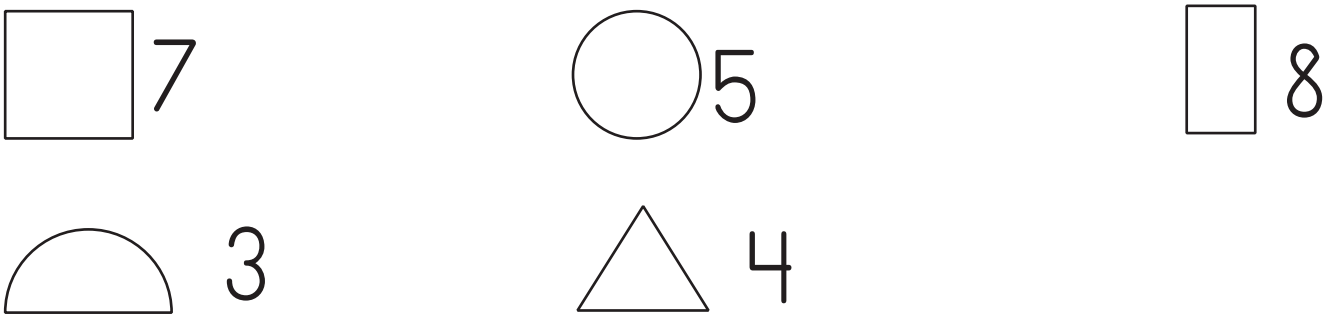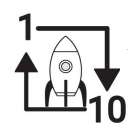
Draw a pictogram below to show the information above.
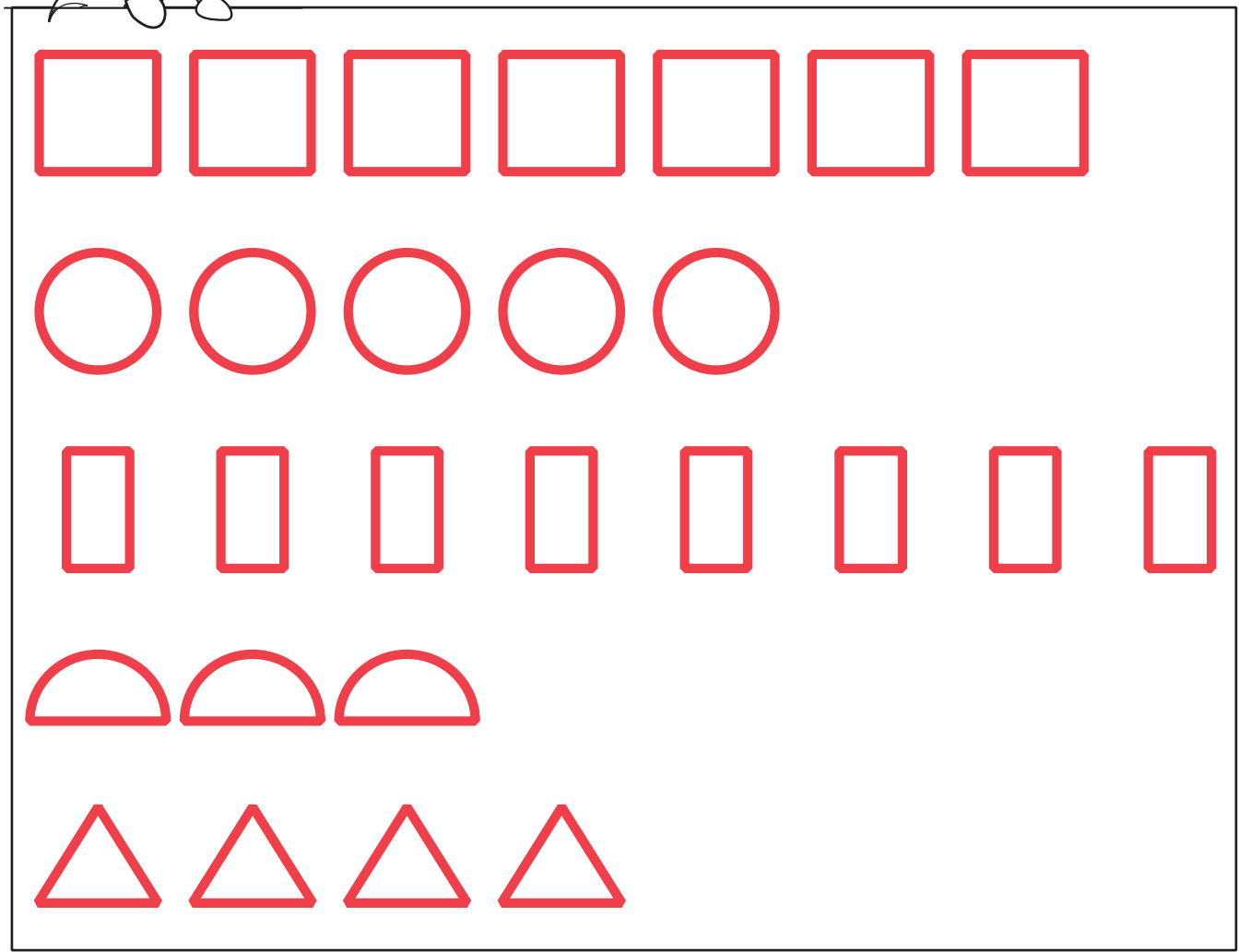
Write the numbers in each group in order from biggest to smallest.

| 6 | 1 | 16 | 12 | 3 | 18 |

16   6   1 | 18   12   3

Fill in the missing number then write the four equations represented by the bond.

7
3 4

$3 + 4 = 7$ $7 - 3 = 4$
$4 + 3 = 7$ $7 - 4 = 3$
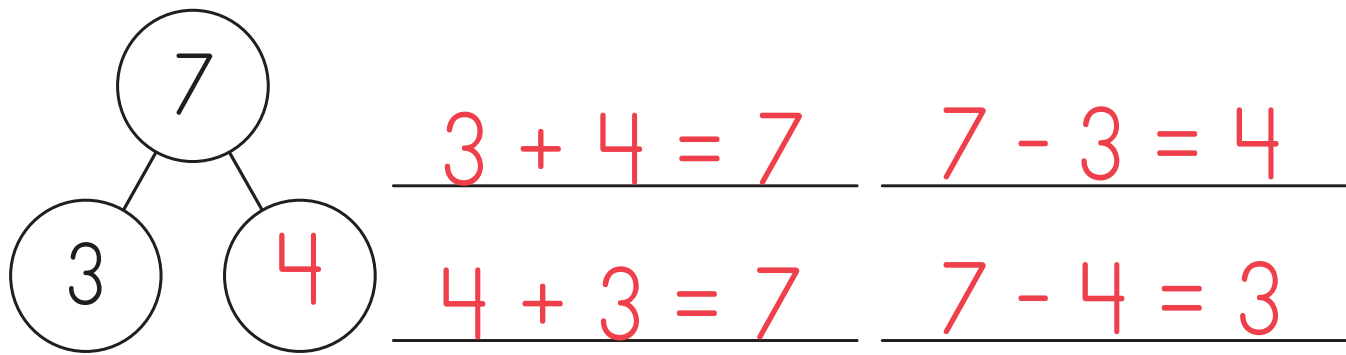
$2 + 6 = 8$ $1 + 6 = 7$ $7 + 0 = 7$

$4 + 2 = 6$ $4 + 5 = 9$ $8 + 2 = 10$

$6 + 0 = 6$ $1 + 2 = 3$ $5 + 5 = 10$

$4 + 4 = 8$ $3 + 4 = 7$ $1 + 8 = 9$

$6 + 2 = 8$ $7 + 1 = 8$ $5 + 1 = 6$

Let's have some fun and make our own pictogram. Find something around the house that you can classify by colour, shape, etc. or ask your friends and family what their favourite (sport, car, food, etc) is. Make a table of the results here:

Draw a picture of your thing	Draw marks for each person that likes it (or each thing that is similar in your collection)	4 Count your marks. Write the number here.

Answers will vary.
Parent to check

Make a pictogram here:

Answers will vary.
Parent to check

$5 + 5 = 10$ $3 + 2 = 5$ $7 + 2 = 9$

$1 + 2 = 3$ $2 + 6 = 8$ $1 + 7 = 8$

$4 + 5 = 9$ $3 + 7 = 10$ $4 + 4 = 8$

$3 + 6 = 9$ $5 + 3 = 8$ $3 + 1 = 4$

$6 + 4 = 10$ $2 + 2 = 4$ $2 + 8 = 10$

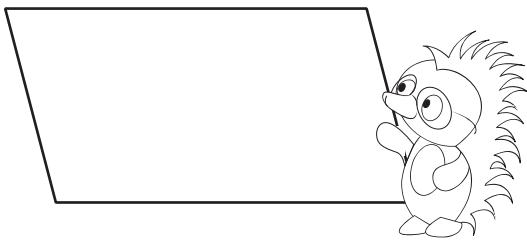
We're nearly done learning all the number families for the numbers up to ten. Four is super easy and I expect you can work out the three number bonds on your own by now. Have a go at writing them below. Remember you can use your sumstix to help if you need them.

4
0 4

4
1 3

4
2 2
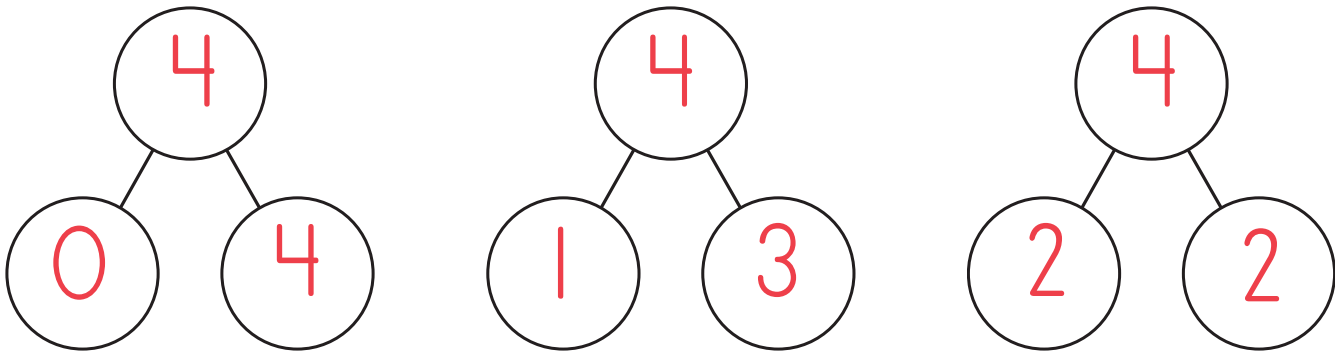
Draw a four rainbow. Use a different colour for each line.
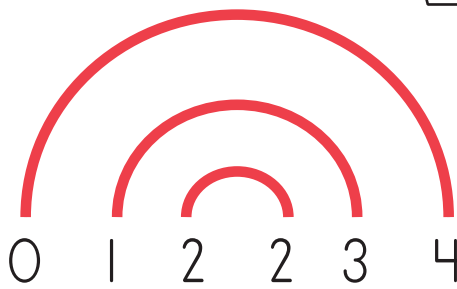
0 1 2 2 3 4

$1 + 8 = 9$ $3 + 4 = 7$ $3 - 2 = 1$

$2 + 2 = 4$ $5 + 4 = 9$ $2 + 5 = 7$

$6 - 2 = 4$ $2 + 8 = 10$ $8 - 0 = 8$

$1 + 7 = 8$ $5 - 4 = 1$ $6 - 5 = 1$

$6 + 2 = 8$ $10 - 7 = 3$ $7 - 2 = 5$

$4 + 6 = 10$ $5 + 3 = 8$ $2 + 5 = 7$

$4 + 1 = 5$ $7 + 3 = 10$ $1 + 8 = 9$

$7 + 2 = 9$ $8 + 2 = 10$ $3 + 3 = 6$

$7 + 0 = 7$ $1 + 2 = 3$ $2 + 6 = 8$

$3 + 4 = 7$ $2 + 2 = 4$ $1 + 1 = 2$

$2 + 2 = 4$ $4 + 0 = 4$ $1 + 3 = 4$

$1 + 3 = 4$ $3 + 1 = 4$ $0 + 4 = 4$

$0 + 4 = 4$ $2 + 2 = 4$ $3 + 1 = 4$

In the puzzle below, the brick above every pair of bricks should contain the sum of the numbers in the pair of bricks below it. Fill in the missing numbers. Example:

	5	
2		3
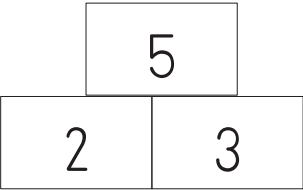
Parent note: your child will probably need help with this but even just watching you work through it is an excellent training in logical thinking. Each group of three bricks forms a number bond (see example). Start by filling in the missing numbers in the three number bonds in the bottom two rows. Then work your way up.
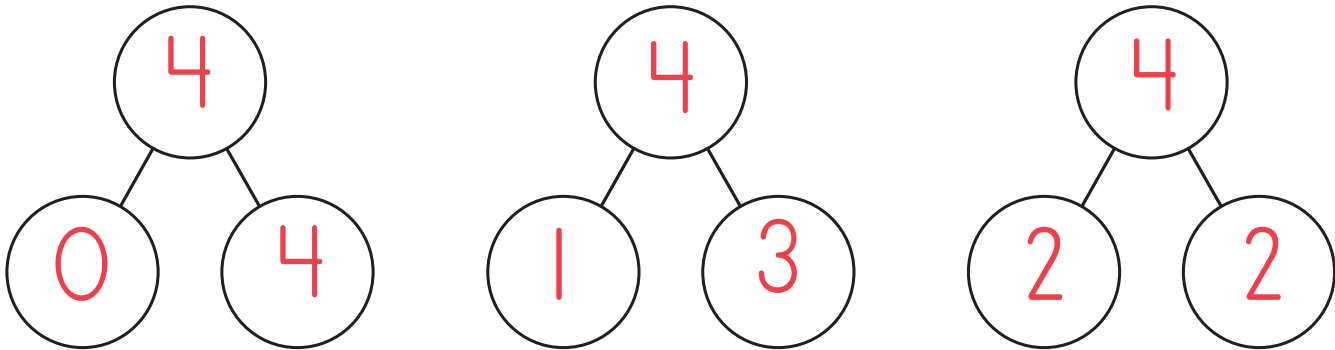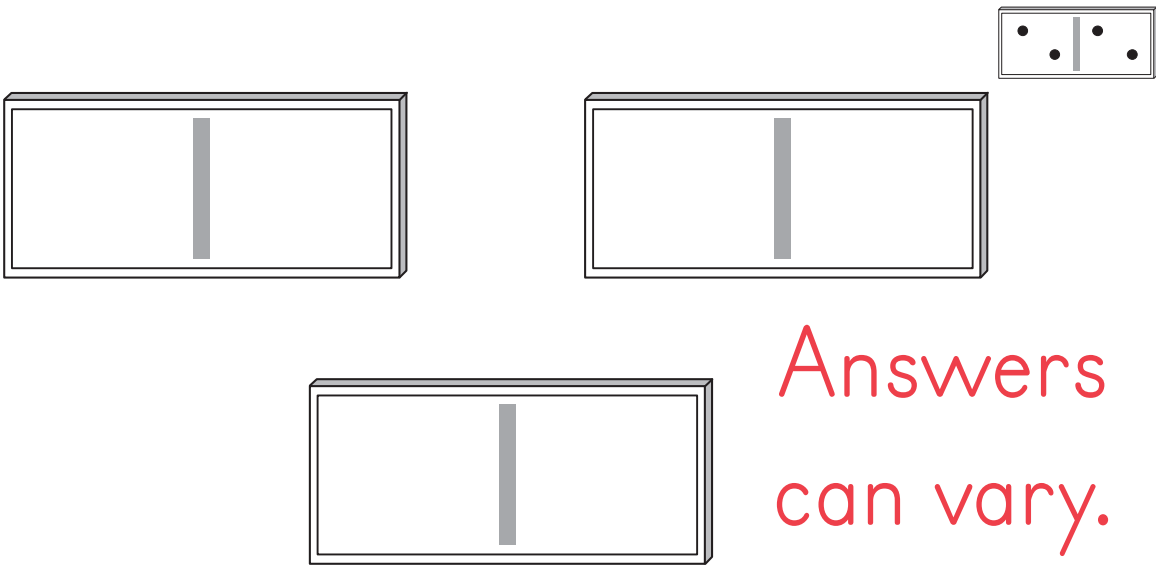
	10		
	6	4	
3	3	1	
1	2	1	0

Count down from 20 to 10.

20 19 18 17 16 15 14 13 12 11 10

Colour in the fraction of the shape indicated.

$\frac{1}{4}$ $\frac{3}{4}$

$7 + 3 = 10$ $3 + 4 = 7$ $3 + 6 = 9$

$2 + 3 = 5$ $2 + 7 = 9$ $4 + 5 = 9$

$3 + 3 = 6$ $4 + 4 = 8$ $2 + 8 = 10$

$2 + 4 = 6$ $4 + 6 = 10$ $1 + 5 = 6$

$5 + 5 = 10$ $2 + 6 = 8$ $3 + 5 = 8$
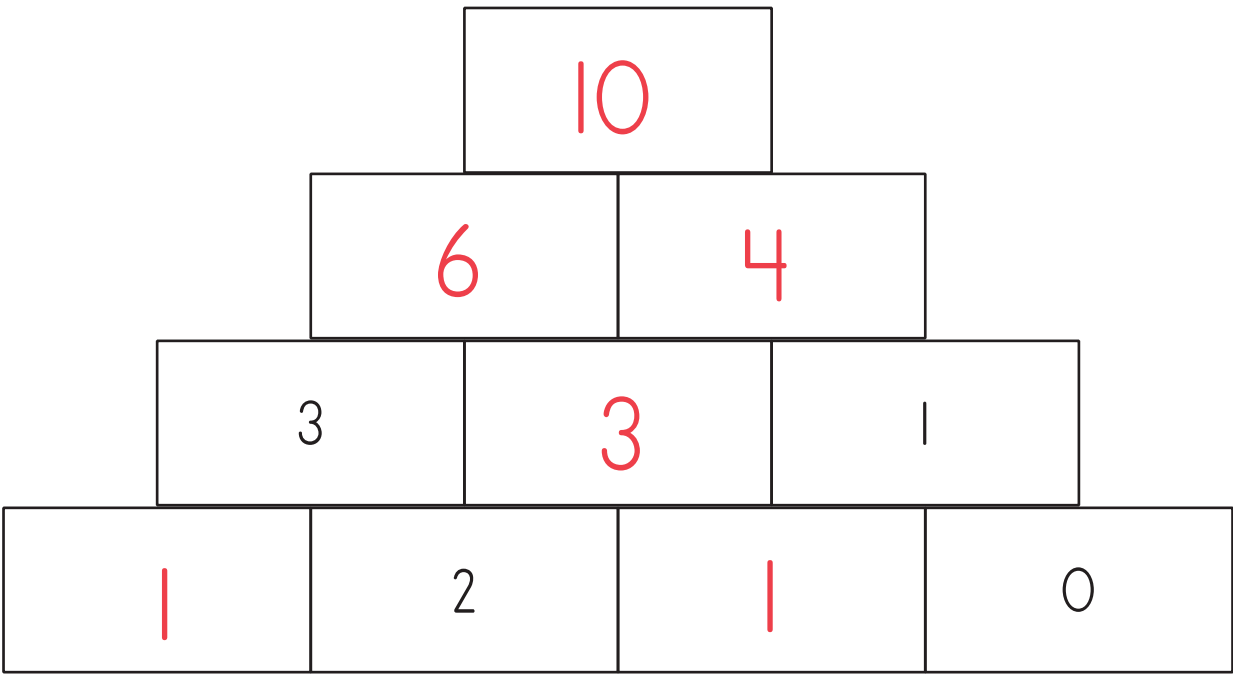
Make a number four rainbow, using a different colour for each line.

0 1 2 2 3 4
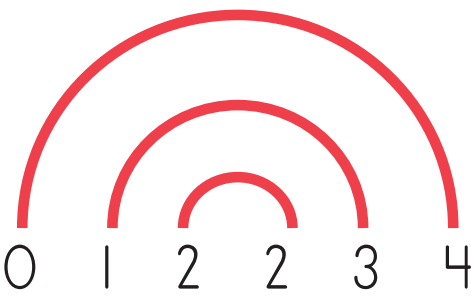
Make a number bond for each trio. Use coloured pencils/textas to match the rainbow if you like.

4 → 0, 4   4 → 1, 3   4 → 2, 2

Draw dots on the dominos so that the two sides of each domino add up together to make four.

Answers can vary.

$2 + 5 = 7$ $7 - 3 = 4$ $4 + 3 = 7$

$9 + 1 = 10$ $2 + 2 = 4$ $5 + 5 = 10$

$3 - 2 = 1$ $10 - 2 = 8$ $2 - 1 = 1$

$6 - 1 = 5$ $5 + 2 = 7$ $3 + 5 = 8$

$5 + 1 = 6$ $8 - 4 = 4$ $10 - 3 = 7$

⏳

$4 + 6 = 10$ $2 + 7 = 9$ $4 + 3 = 7$

$2 + 8 = 10$ $3 + 7 = 10$ $1 + 5 = 6$

$3 + 2 = 5$ $5 + 3 = 8$ $4 + 5 = 9$

$2 + 4 = 6$ $3 + 6 = 9$ $4 + 4 = 8$

$6 + 2 = 8$ $3 + 3 = 6$ $5 + 5 = 10$

$4 + 0 = 4$ $4 - 1 = 3$ $2 + 2 = 4$

$0 + 4 = 4$ $3 + 1 = 4$ $1 + 3 = 4$

$4 - 4 = 0$ $4 - 2 = 2$ $4 - 3 = 1$

$4 - 0 = 4$ $3 + 1 = 4$ $4 + 0 = 4$

$2 + 2 = 4$ $4 - 3 = 1$ $4 - 2 = 2$

Colour the picture according to the code below.

6 = orange
7 = yellow
8 = blue
9 = light blue

60–70 Write the number sequence from 60 to 70.

60 61 62 63 64 65 66 67 68 69 70

$\frac{1}{2}$ of 16 is 8 $\frac{1}{2}$ of 10 is 5

$\frac{1}{2}$ of 20 is 10 $\frac{1}{2}$ of 2 is 1

⏳

$2 + 2 = 4$ $1 + 6 = 7$ $5 + 3 = 8$

$1 + 7 = 8$ $5 + 2 = 7$ $4 + 5 = 9$

$1 + 5 = 6$ $3 + 6 = 9$ $2 + 4 = 6$

$2 + 5 = 7$ $3 + 1 = 4$ $4 + 6 = 10$

$4 + 1 = 5$ $7 + 1 = 8$ $6 + 3 = 9$

Fill in the missing numbers then write the equations represented by each number bond.

$0 + 4 = 4$ $4 - 0 = 4$
$4 + 0 = 4$ $4 - 4 = 0$

Look! Another double!

$2 + 2 = 4$
$4 - 2 = 2$

$1 + 3 = 4$ $4 - 1 = 3$
$3 + 1 = 4$ $4 - 3 = 1$

2 + 5 = 7   4 – 1 = 3   4 + 6 = 10

4 + 1 = 5   7 + 1 = 8   9 – 3 = 6

1 + 6 = 7   5 + 3 = 8   7 – 3 = 4

5 + 2 = 7   4 + 5 = 9   10 – 1 = 9

9 – 6 = 3   6 – 4 = 2   2 + 1 = 3

⌛
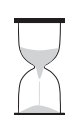
2 + 7 = 9   5 + 5 = 10   3 + 5 = 8

4 + 5 = 9   4 + 6 = 10   4 + 4 = 8

6 + 2 = 8   7 + 3 = 10   3 + 3 = 6

2 + 4 = 6   3 + 4 = 7   1 + 5 = 6

8 + 2 = 10   6 + 3 = 9   2 + 3 = 5

---

4 – 3 = 1   4 – 1 = 3   4 – 1 = 3

4 – 2 = 2   4 – 0 = 4   4 – 4 = 0

4 – 0 = 4   4 – 3 = 1   4 – 2 = 2

2 + 2 = 4   1 + 3 = 4   0 + 4 = 4

1 + 3 = 4   0 + 4 = 4   2 + 2 = 4

0 + 4 = 4   1 + 3 = 4   1 + 3 = 4

Join the spiders to their webs so that the numbers equal four.
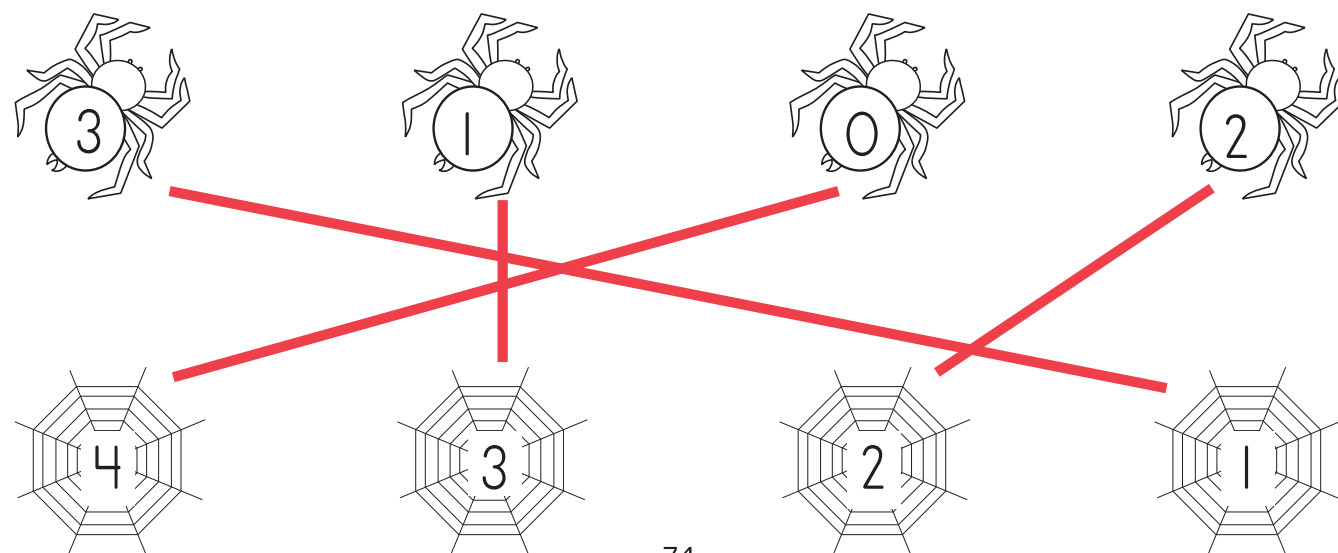
🚀 Count down.

10 9 8 7 6 5 4 3 2 1 0

🚀 Count back.

12 11 10   17 16 15   16 15 14

14 13 12   18 17 16   13 12 11

⌛

2 + 5 = 7   2 + 3 = 5   5 + 1 = 6

6 + 2 = 8   4 + 1 = 5   4 + 2 = 6

6 + 0 = 6   4 + 3 = 7   7 + 1 = 8

1 + 5 = 6   7 + 3 = 10   4 + 6 = 10

3 + 3 = 6   1 + 2 = 3   1 + 7 = 8

Can you remember the number bonds for four yet? Try to write them here without looking back (use your Sumstix if you get stuck):
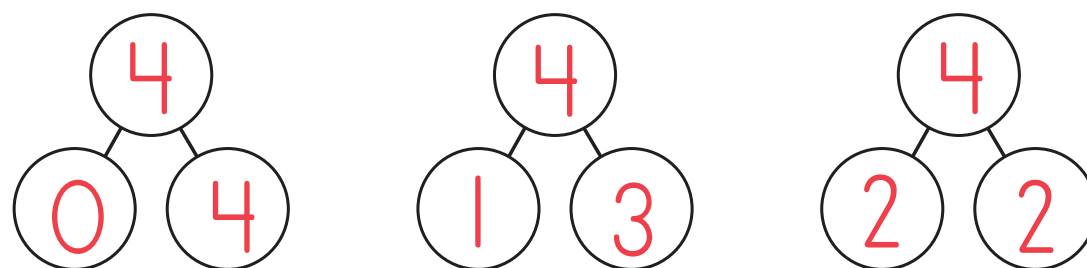
Make a number rainbow for four. Use a different colour for each line.

0 1 2 2 3 4

Fill in the missing number in the number bond and write the four equations represented by it.

1 + 3 = 4   4 – 1 = 3

3 + 1 = 4   4 – 3 = 1
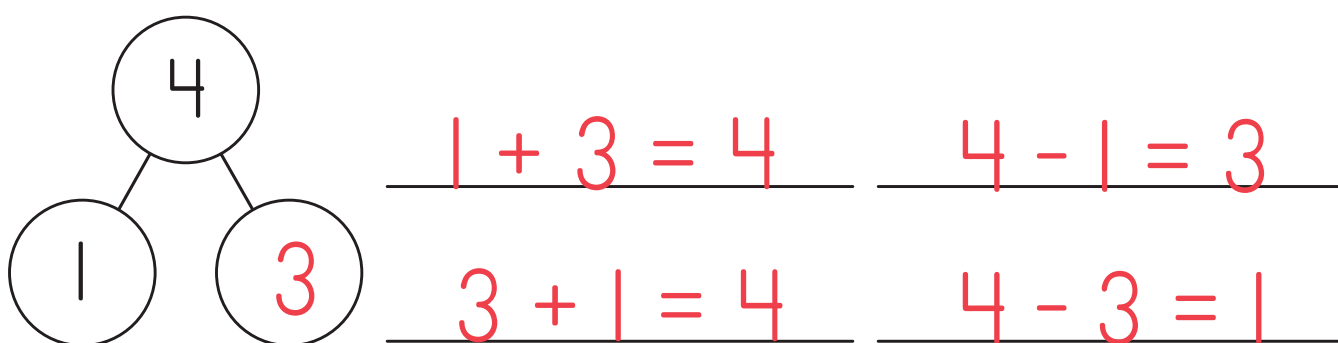
$\frac{1}{2}$ of 18 is __9__ $\frac{1}{2}$ of 4 is __2__

$\frac{1}{2}$ of 14 is __7__ $\frac{1}{2}$ of 8 is __4__
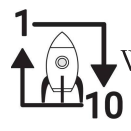
Write the numbers in order from biggest to smallest.

3	20	0	9	11	15
20	3	0	15	11	9

4 + 4 = 8   8 + 2 = 10   1 + 6 = 7
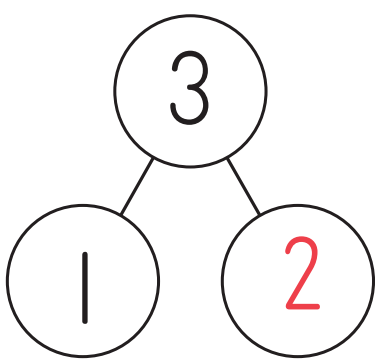
3 + 5 = 8   6 + 4 = 10   8 + 1 = 9

5 + 5 = 10   5 + 4 = 9   3 + 4 = 7

6 + 1 = 7   3 + 7 = 10   4 + 5 = 9

5 + 3 = 8   1 + 8 = 9   7 + 2 = 9

Lesson 156

There are only a few number bonds left to learn and they are all super easy. Actually, you probably know the additions represted by these number bonds already! Using your Sumstix if you need to, fill in the missing number in each of the number bonds below.
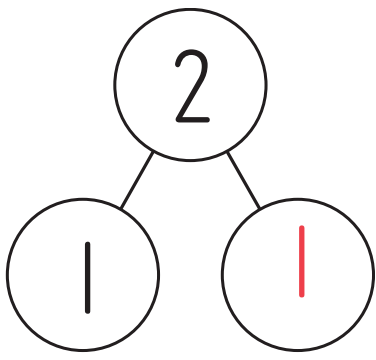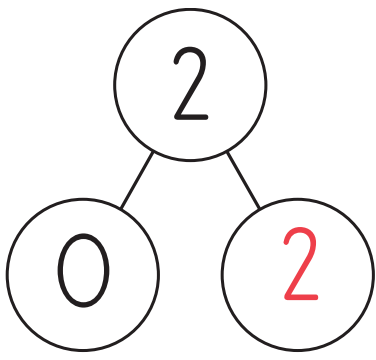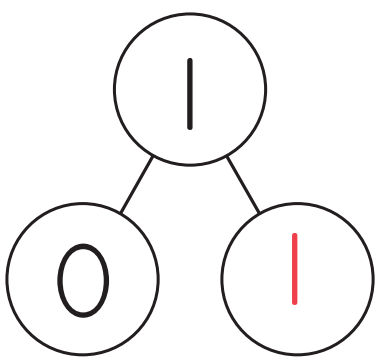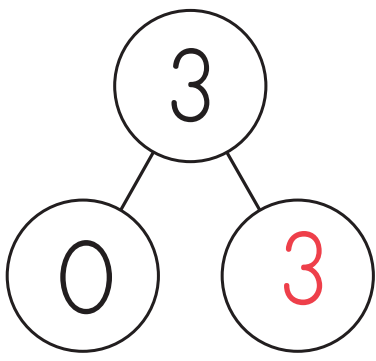
70-80 Write the sequence of numbers from 70-80 on the number line.

70 71 72 73 74 75 76 77 78 79 80

| 5 | (9) | Circle the biggest number in each group. |

12	(18)	4	(20)	9	14
(20)	1	10	(18)	3	16

7 + 0 = 7   2 + 8 = 10   2 + 6 = 8

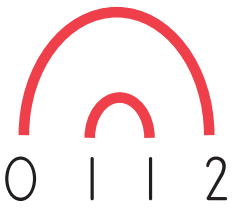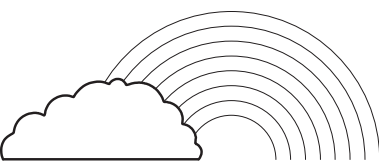1 + 1 = 2   3 + 2 = 5   6 + 3 = 9

2 + 1 = 3   3 + 1 = 4   5 + 2 = 7
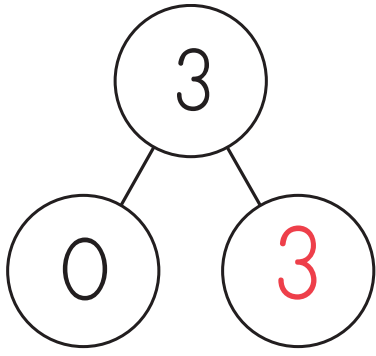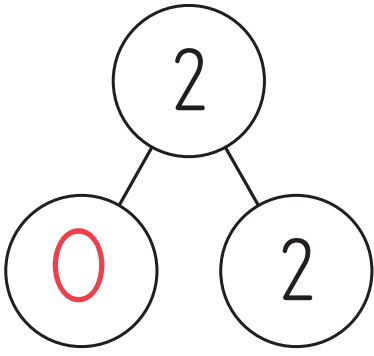
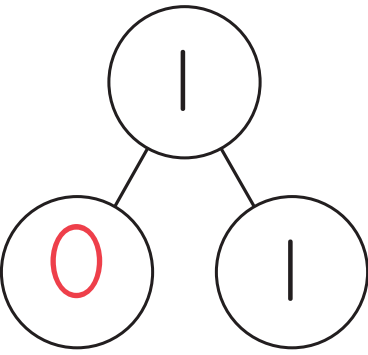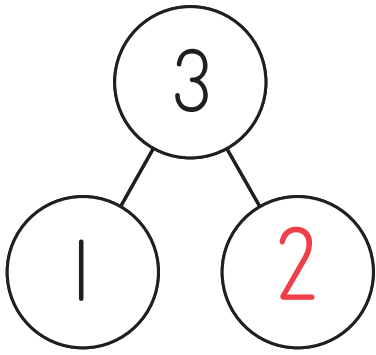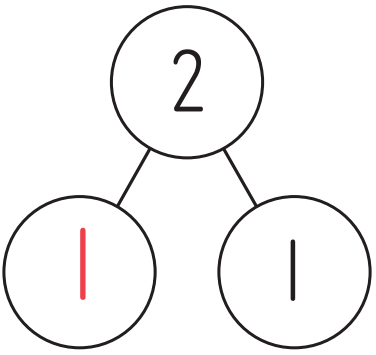2 + 4 = 6   1 + 4 = 5   2 + 2 = 4

2 + 7 = 9   1 + 9 = 10   1 + 3 = 4

Lesson 157

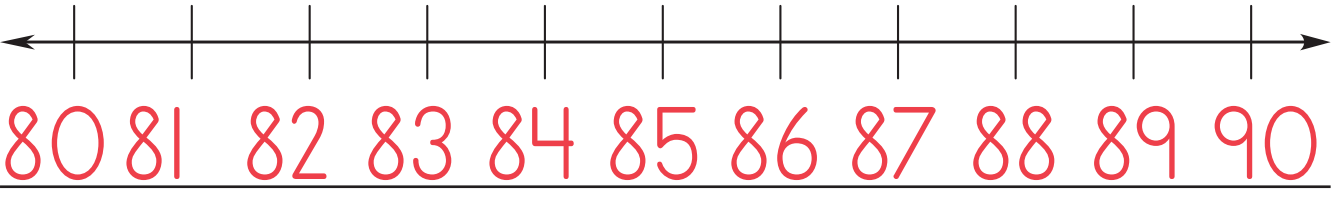The number rainbows for one, two and three are really tiny. Draw them here:

0 1

0 1 1 2

0 1 2 3

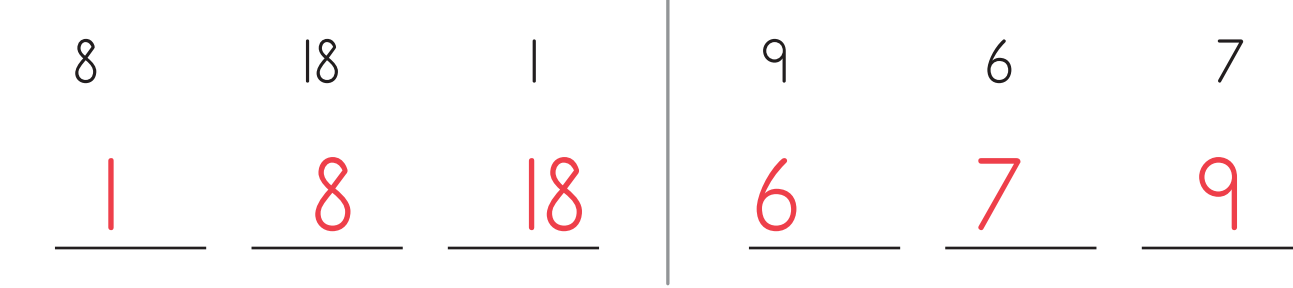Fill in the missing numbers in the number bonds.

80-90 Write the number sequence from 80-90 on the number line.

80 81 82 83 84 85 86 87 88 89 90

Write the numbers in order from smallest to biggest.

8	18	1		9	6	7
1	8	18		6	7	9

⏳

$2 + 4 = 6$ $1 + 4 = 5$ $2 + 2 = 4$

$2 + 7 = 9$ $1 + 9 = 10$ $1 + 3 = 4$

$2 + 8 = 10$ $2 + 6 = 8$ $3 + 6 = 9$

$3 + 2 = 5$ $6 + 3 = 9$ $8 + 0 = 8$

$3 + 1 = 4$ $5 + 2 = 7$ $9 + 1 = 10$

Lesson 158

$10 - 8 = 2$ $3 - 2 = 1$ $6 + 4 = 10$

$3 + 3 = 6$ $6 + 1 = 7$ $7 - 3 = 4$

$10 - 9 = 1$ $8 - 0 = 8$ $5 + 4 = 9$

$7 - 4 = 3$ $4 + 5 = 9$ $10 - 5 = 5$
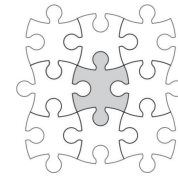
If you can't remember how to do these puzzles, go back to lesson 150 for instructions.

Pyramid:
- Top: 10
- Row: 3, 7
- Row: 2, 1, 6
- Bottom: 2, 0, 1, 5

$1 + 8 = 9$

$7 - 4 = 3$

$9 - 1 = 8$

$2 + 7 = 9$

$5 + 2 = 7$

$10 - 3 = 7$

$8 - 0 = 8$

$3 + 4 = 7$

$5 - 4 = 1$

$4 + 5 = 9$

$3 + 0 = 3$

$3 + 3 = 6$

$0 + 9 = 9$

$1 + 1 = 2$

$0 + 3 = 3$

$3 + 2 = 5$

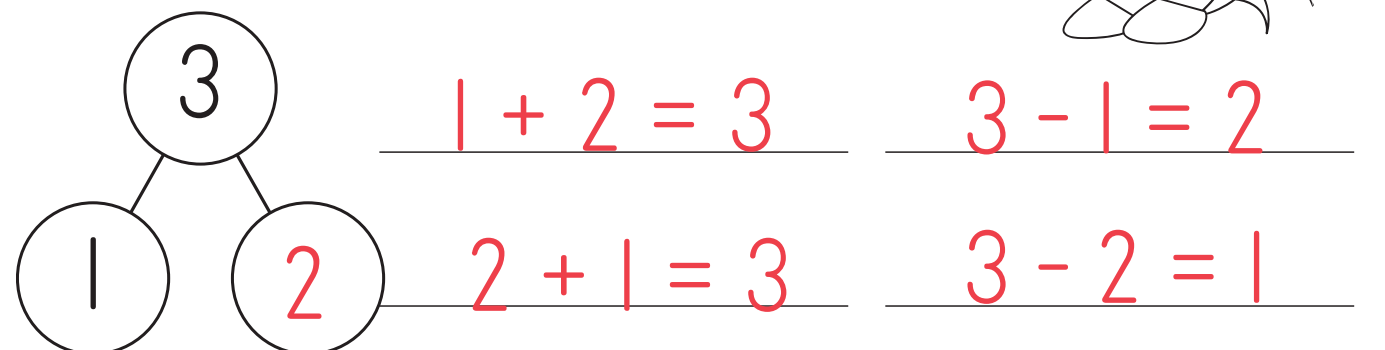$5 + 1 = 6$

$4 - 2 = 2$

$8 - 4 = 4$

$3 + 5 = 8$
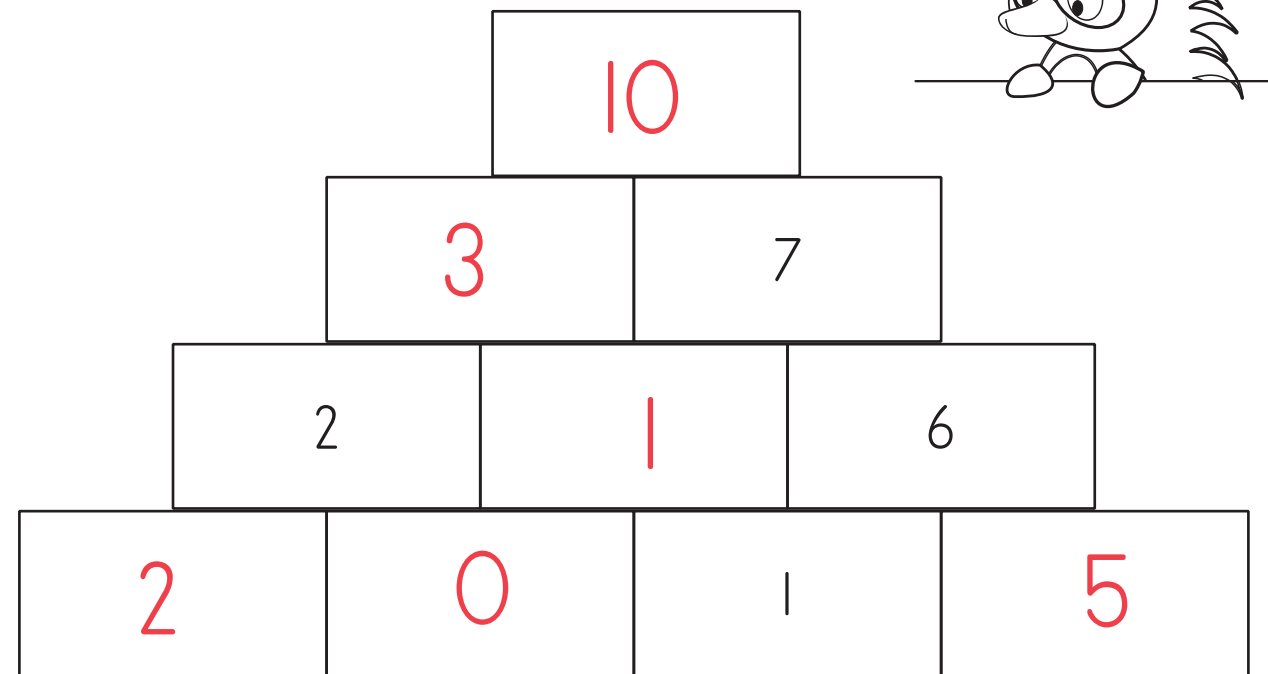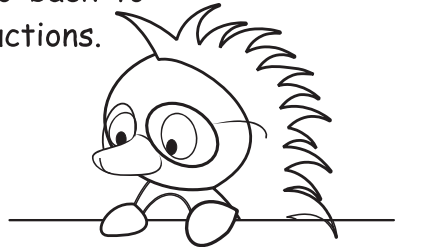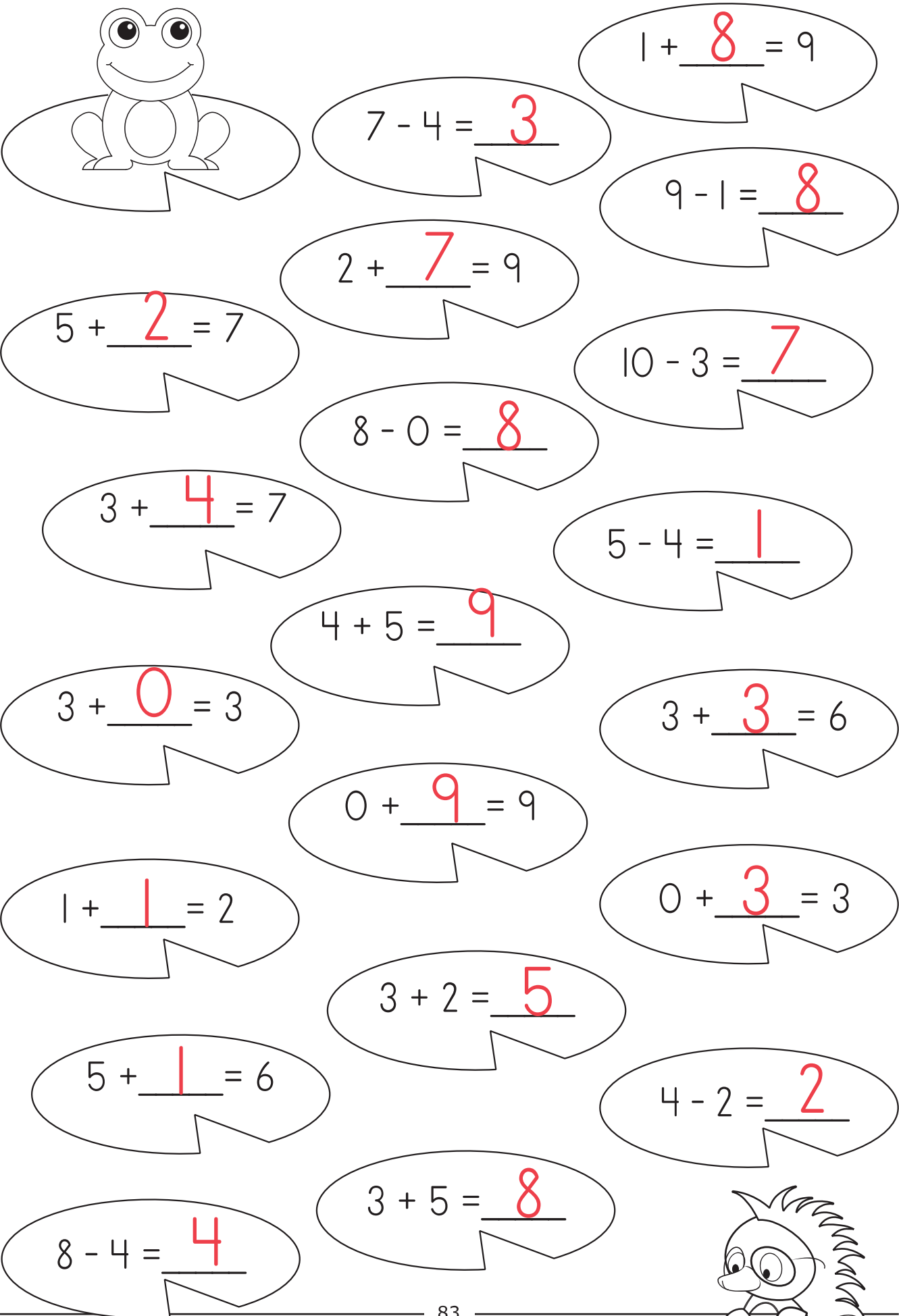
Lesson 159

We've had a big year! The most useful thing we've learned is that one number bond can help us find four different equations.

Fill in the missing numbers on the number bond then write the equations they represent:

Number bond: 3 → 1 and 2

$1 + 2 = 3$ $3 - 1 = 2$

$2 + 1 = 3$ $3 - 2 = 1$

The most colourful thing we've learned is that number rainbows can be used to help us find all the number trios for a particular number. Make one for the number nine here:

0 1 2 3 4 5 6 7 8 9

We've also learned how to use sumstix to solve lots of different problems, to find fractions of shapes and to share stuff. We learned how to measure stuff and most importantly, we've practised our logical thinking skills and started thinking mathematically!
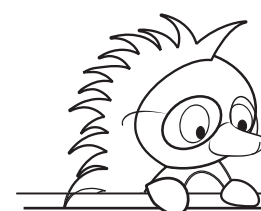
And last but not least, we've learned a LOT of sums. Not counting the "plus zero" sums, you've now seen 45 sums. Here they all are on a race track. See how fast you can zoom through them!

Teacher note: You may do these as an oral drill with your child or have them colour each bubble to match the Cuisenaire rods. Eg: If the total is 3, colour the bubble light green and if total is 6, colour dark green, etc.

Race track sums:
5+3, 1+5, 6+2, 6+1, 7+2, 8+1, 3+6, 1+1, 3+4, 1+6, 7+1, 1+2, 1+9, 4+1, 8+2, 4+5, 3+1, 7+3, 4+4, 2+5, 4+3, 3+7, 1+7, 9+1, 4+6, 1+8, 1+3, 2+1, 2+2, 5+2, 3+3, 1+4, 2+3, 6+3, 3+2, 5+5, 2+8, 5+4, 2+7, 6+4, 2+4, 3+5, 2+6, 5+1, 4+2

Turn this into a board game! Find the rules in the parent notes at the front of this book.

Well Done!

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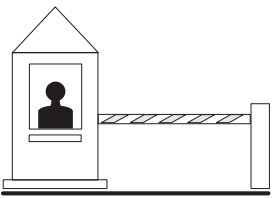
Complete the number lines.

0 1 2 3 4 5 6 7 8 9 10

90-100
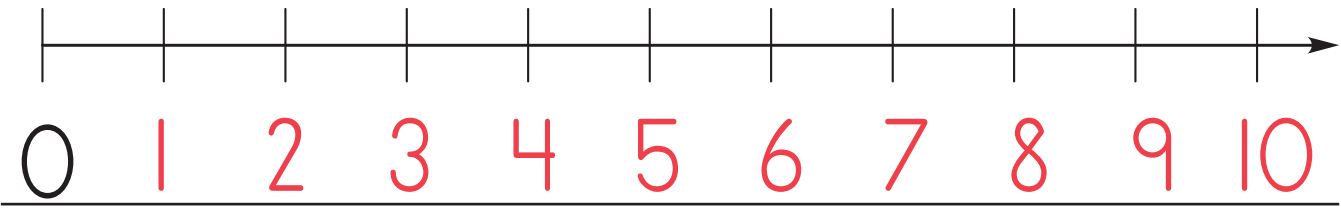
90 91 92 93 94 95 96 97 98 99 100

Fill in the missing numbers:

6 → 2, 4
9 → 1, 8
10 → 4, 6
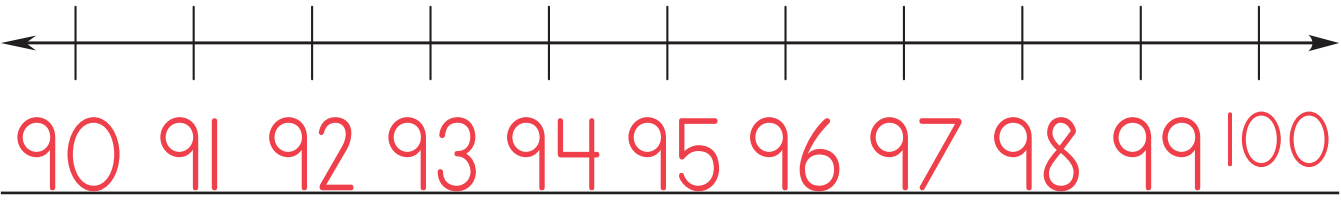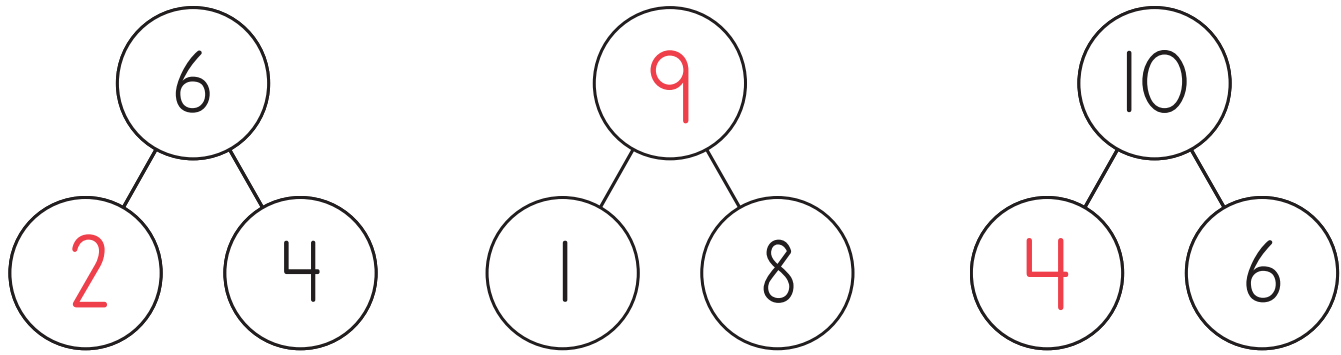
Write the four equations represented by the number bond:

9 → 4, 5

$$4 + 5 = 9 \qquad 5 + 4 = 9$$
$$9 - 4 = 5 \qquad 9 - 5 = 4$$

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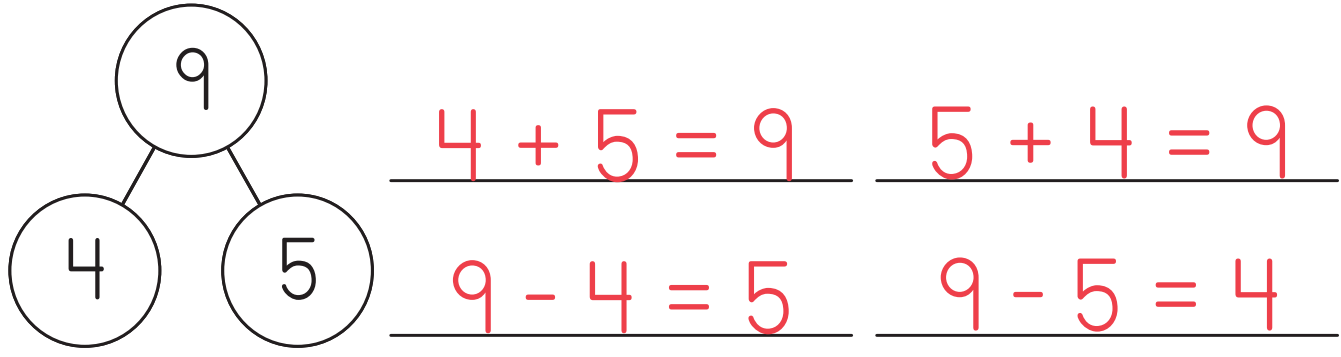
5 + 1 = 6	4 + 3 = 7	2 + 7 = 9
2 + 1 = 3	7 + 1 = 8	8 + 2 = 10
3 + 3 = 6	6 + 2 = 8	4 + 4 = 8
1 + 2 = 3	2 + 2 = 4	6 + 4 = 10
3 + 4 = 7	9 + 1 = 10	8 + 1 = 9
1 + 9 = 10	2 + 4 = 6	1 + 6 = 7
3 + 1 = 4	7 + 0 = 7	3 + 6 = 9
6 + 1 = 7	1 + 1 = 2	6 + 0 = 6
2 + 3 = 5	4 + 2 = 6	5 + 3 = 8
4 + 6 = 10	7 + 3 = 10	
4 + 1 = 5	1 + 8 = 9	
5 + 2 = 7	6 + 3 = 9	

Yay! We did it. We got to the end of the book and learned heaps of new maths skills.

Have a great break and my friend Cookie will will join you for another fun year of maths in level C.

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