Milestone Maths B2
by
Kathy Gonzalez

Milestone

For Joshua

Milestone Maths B2

First Edition (2024)

www.milestonemaths.com.au

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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 two, 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 Milestone Maths B2 your child will learn:

- The concept of subtraction and how it is related to addition. Relating addition and subtraction makes learning facts much easier and also lays a foundation for algebraic thinking.
- The addition and subtraction facts for a total of five and 10.
- About counting forwards and recognising numbers from 10 to 20.
- To recognise half of an object.

Milestone 6

Milestone Goals

By the end of this milestone, your child should be able to:

- Solve missing number addition equations using Sumstix and/or number bonds.
- Represent subtraction pictorially by drawing and crossing out the appropriate number of objects.
- Solve simple subtraction equations using Sumstix.
- Write the two addition facts and two subtraction facts represented by a number bond.
- Solve simple work problems involving subtraction.

Special Teaching Directions

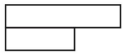
Begin each lesson with a flashcard drill (using cards 1-11 from the number bonds flashcards deck).

Lesson 42

This lesson introduces the concept of subtraction as taking something away from a total. It is a good idea to "act it out" before introducing the concept on paper. Use whatever toy or object you like to illustrate the concept. Begin by writing a simple subtraction equation (eg 4-1=_) on a whiteboard and place as many counters on the table as the equation starts with then take away the number indicated. Have the child count the number remaining and write that as the answer to the equation on the board.

Lesson 44

Another way to illustrate the use of Sumstix to solve subtraction problems is to proceed as follows. Write a subtraction equation on the board (eg 5-3=_). Ask the child to find the Sumstix for the numbers in the equation. Place the rods together as illustrated:



Then ask the child to find the rod that "fills in" the gap. Put the rod in the gap and then say, "Five take away 3 is two." As you say this, you should first point to the yellow rod and then take away the light green rod and finally point to the red rod that is left behind.

Milestone 7

Milestone Goals

This Milestone is the first of a series of milestones on addition that will be alternated with other topics. The reason for this is to allow sufficient time for the child to gain a deep understanding of the process of addition and to learn the associated facts. They will be learning the related subtraction facts at the same time.

- When the child has completed this Milestone they should:
- Know the number bonds for five.
- Be able to give the two addition facts and two subtraction facts related to a given number bond
- Be able to solve addition, subtraction and missing number equations with a total of five.

Special Teaching Directions

Each lesson should begin with a game (see next page for suggestions) and/or flashcard drill. The number bond flashcards can be used in a number of ways to reinforce the learning in this Milestone.

- To reinforce the number bonds, simply have the child read the number trio off each card. For five you will use cards AS-5 and AS-6 and the child will read card AS-5 as, "Five, one, four".
- To work on addition, you will flash the card with the total covered and ask the child to tell the total. This is not effective when cards with only one total are used so is best used for mixed reviews.
- To work on missing number and subtraction problems, flash the cards with one of the parts covered over and have the child name the part that is covered.
- To give extra practice identifying the equations represented by the number bond the child can work through a stack of cards on their own. They look at the number bond on the front of the card and write the four (or two for doubles) equations represented on a whiteboard or spare paper. They can then self correct by looking at the back of the card.

Flashcards to introduce/ highlight: AS-9 to AS-11

This heading will appear in all Milestones related to addition. It gives the range of flashcard numbers related to the facts being studied in the current Milestone. All previously introduced flashcards should also be reviewed.

Rationale for this milestone

Most people have five fingers on one hand and this turns out to be a very useful reference point for mathematical problem solving so it is a good idea to learn all the pairs of numbers that add to five. Since order is not important in a number bond, we only have three unique number bonds for the number five. This small number of facts is relatively easy to learn and memorise, however, it actually allows the child to derive 12 separate addition and subtraction facts. By starting at five we also open the option of practising the facts almost anywhere because the fingers on one hand can be used as a manipulative.

By the end of this year, your child will have seen all the number bonds for the single digit numbers and should be well on the way to memorising the associated trios of numbers. Once these trios are memorised, the child will have learned half of the 10x10 addition table and will also know the associated subtraction facts. Your child will only need to consciously memorise 35 number trios but, using these, they will be able to derive 132 addition and subtraction facts. In time and with continued practice, the associations will be so strong that the child will subconsciously derive the addition and subtraction facts, freeing their attention up to focus on more challenging problem solving. Hence, this is a very efficient way of laying the most important foundation of mathematics.

Having this tight association between related addition and subtraction facts will also give your child a very good "number sense" which is the ability to easily manipulate (add, subtract, multiply, divide) numbers without needing pencil and paper or a calculator. It is also essential for success in algebra and the other higher level mathematical areas.

Suggested Warm Up and Practical Activities

Daily counting practice should continue through this Milestone. The child should orally count (either just reciting the numbers or counting actual objects) on a daily basis. As soon as your child has completely mastered counting to 10, begin introducing the numbers 11-20. If this is also easy for your child, you may extend counting to 100 or more (see page 28)

Play a "game" where the child tells you how many fingers you are holding up on one hand. It is best if you vary which fingers are used to represent each number (eg, 1 may be represented with the pinky or the thumb raised). Discretion about doing this to avoid offensive gestures is advised.

Use any suitable object as counters to show how five counters can be divided into 2 groups in several ways to make the number five fact family. This activity is excellent to show the concept but should not be repeated too often as it will tend to encourage unit counting.

Have the child use Sumstix to find combinations of digits that add to five. To further encourage the development of number sense, you may allow the child to use more than two Sumstix to make a 'five train'. This activity is superiour to the previous one as it avoids developing the habit of "unit counting." Repeat it as often as you and your child like!

Sing the song "Five Little Ducks Went Out One Day" with your child and then re-enact it but this time ask the child how many ducks are left behind the hill after each stanza.

If you feel like getting messy and/or arty, you could have your child paint a number rainbow for five. This would be a great poster to hang in your child's room to remind them of what they are learning!

Games

We want to fix the number trios taught in this Milestone firmly in the student's mind. While studying this Milestone, seek and exploit every opportunity to practise the fives.

Here's one "game" idea which is portable because it requires no equipment: Say, "The total is five tell me the missing number." Then in rapid fire say the numbers 0-5 in random order. After each number the child should give the complement in five (the other number that gives a total of five when added to the number you mentioned). Many repetitions can be done in only one minute.

Another game idea: Find lots of small objects (I'll call them counters) that you can fit five of easily in your hand. Hide 0-5 counters in your hand. Then ask the child to take as many counters as they think they will need to add to the hidden counters to make five and hold them in their open palm so you can see. Then reveal your counters. If the total number of counters is five AND your child can say the number trio formed (so if you have two counters and your child has three they would say, "five, three, two") they get to keep the counters. If the total is not five or they did not say the trio properly, you keep the counters. Make the game more interesting by using edible counters. For a version without chance: The parent shows the child 0-5 counters and the child counts out the number required to make five.

Milestone 8

Milestone Goals

By the end of this Milestone your child should:

- Be able to count fluently to twenty
- Be developing fluency counting back from 20 to 0.
- Be able to represent numbers from 10-20 using Sumstix
- Be developing the skill of writing the sequence of numbers from 10-20

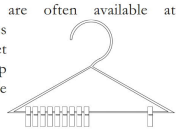
Special Teaching Directions

The student books delay the introduction of numbers higher than 20 until term 3 for the following reasons:

- The addition and subtraction facts taught do not need the student to know numbers over 10.
- Some children take a long time to understand and be fluent at counting to 20 which is the most difficult task to master. Once the sequence to 20 is properly mastered, the rest of the numbers are very easy to teach.
- To avoid confusion of numbers by reversing the digits, for example, many children will confuse 12 with 21 and 14 with 41 etc.
- To avoid introducing the concept of place value too early. I have found in my tutoring practice that delaying the introduction of place value helps develop a stronger number sense. Place value is taught in year 2/level C.

If your child masters counting to twenty very quickly, you may if you wish extend their number skills to 100 before the end of this term. See the extension section of this book. (From page 28.)

One fun way to practise counting backwards is to complete dot-to-dot activities backwards. Books of these are often available at department stores and quick Internet search can turn up several suitable pictures.



Lesson 57

The number line is a useful visualisation tool. In reality, all number lines should have arrows at both ends but we do not need to confuse the child by alerting them to the existence of negative numbers at this stage.

Milestone 9

See notes for Milestone 7 for goals and special teaching directions.

Game suggestion

Make a number bond peg abacus. Use a coathanger with a flat bottom (a wire one works very well) and ten clothes pegs. Peg the pegs to the bottom wire of the coat hanger. Start with them all on one side and say (or write) the number bond represented (10-0-10). Move one peg over and say the new bond (10-1-9). Keep going until you have all the pegs on the other side. You can do this for any number so play often!

Flashcards to introduce: AS-12 to AS-17

Lessons 67 & 68

These lessons point out that one of the number bonds for ten is a "double" (10-5-5). This is not a very difficult concept but it might not be obvious to a young child how to deal with these when writing the equations represented by the number bond. We will also use this concept as a basis for learning how to find half of a quantity in a later milestone.

Milestone 10

Milestone Goals

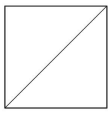
By the completion of this Milestone your child should:

- Understand that an object needs to be divided into two ***equal*** parts to find one half.
- Be able to colour one half of an object that has been divided into two pieces.
- Be able to write the fractional representation of one half. The do not need to understand what this means at this stage and you should treat it as just another number that looks a bit "funny".

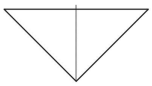
Special Teaching Directions

An excellent practical application of finding halves (and other simple fractions) is origami. Doing origami with your child is not only a fun way to learn fractions it will also help develop their fine motor skills and spacial reasoning. Many simple origami projects can be found by doing a quick web search. As a start, try the very simple butterfly that involves folding the paper in half twice on the opposite page.

Origami Butterfly



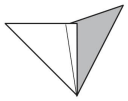
1. Fold paper in half along diagonal.



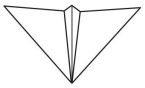
2. Fold triangle in half.

3. Fold top layer as shown.

4. Flip over.



5. Repeat step 3.



6. Completed butterfly.

Hi! Emmy Echinda is back and ready for another term of Milestone Maths.

We've got lots more fun things to learn about the numbers 0 to 10 this term. We'll also learn about taking away stuff as well as finding one half of something. And finally we're going to learn to count to 20 and write the numbers 11 to 20.

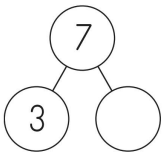
So put your thinking cap on and let's go do some maths!

Lesson 41

The Concept of Subtraction

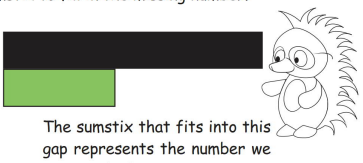
In the last milestone we looked at how to solve addition equations where one of the parts are missing. This will come in very handy as we learn about subtraction so let's remind ourselves how this works.

$3 + \_\_\_\_ = 7$



This blank is the number we want to find.

We can use our Sumstix to fill in the missing number.

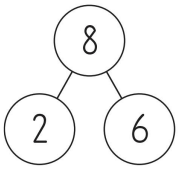


The sumstix that fits into this gap represents the number we want to find.

Fill in the missing numbers:

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

It is also useful for us to remember that we can flip equations around so that one number bond can represent two addition equations. Write the two addition equations represented by the number bond:



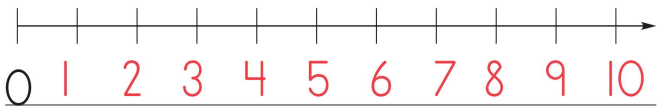
$2 + 6 = 8$

$6 + 2 = 8$

Remember that we call these mirror sums.

Review and Practice

Fill in the missing numbers:



This icon marks drills. Timing is optional. The suggested time limit is one minute.

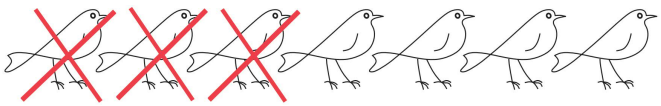
$2 + 3 = 5$	$3 + 1 = 4$	$2 + 2 = 4$
$1 + 4 = 5$	$3 + 2 = 5$	$1 + 2 = 3$
$2 + 1 = 3$	$1 + 1 = 2$	$4 + 1 = 5$

Lesson 42

Let's look at a different type of story problem:

Seven birds were sitting on a fence. A squabble broke out so three birds took off and flew away. How many birds were left sitting on the fence?

Let's draw a picture to help us solve the problem:



Now cross out three of the birds. How many birds are left? Write the number on the line below:

4

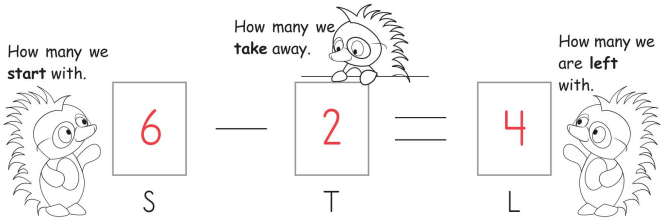
We write the equation for the above problem like this:

$7 - 3 = 4$

Let's do another without a story this time.

This big "-2" means cross out two of the pictures. Do that now!

Now write the numbers where they belong below:



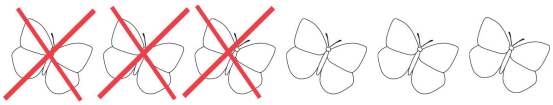
Do the same again for each of the following pictures.

-2

5 — 2 = 3

S T L

-3



6 — 3 = 3

S T L

Review and Practice

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

1 + 4 = 5 1 + 0 = 1 3 + 1 = 4

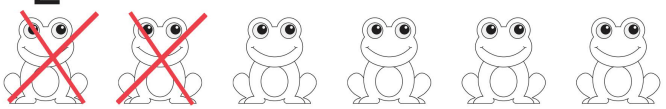
2 + 1 = 3 1 + 2 = 3 2 + 3 = 5

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

Lesson 43

Last lesson we crossed out some pictures and wrote equations. Do another one now:

-2



6 — 2 = 4

S T L

Now let's think about how we can solve a take away problem when we only have an equation. Look at the equation below:

5 - 2 = _____

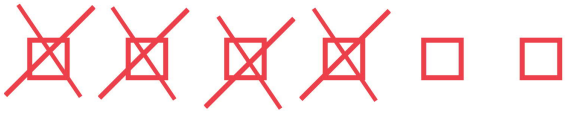
The first number (5) is the number of things we should start with. The second number (2) is the number of things we need to cross out (or take away). If you like, start by putting five Sumstix cubes on the table then put two of them back in the box. Count how many you have left. Now, show what you did by drawing five squares and crossing out two of them:

Now write the number of things left as the answer to the equation:

5 - 2 = 3

Draw pictures to help you solve the following take away problems.

3 - 2 = 1



6 - 4 = 2

Review and Practice

Write a countdown from 10 to 0 on the line below.

10 9 8 7 6 5 4 3 2 1 0

4 + 1 = 5 5 + 0 = 5 3 + 1 = 4

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

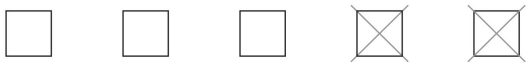
1 + 2 = 3 2 + 2 = 4 1 + 3 = 4

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

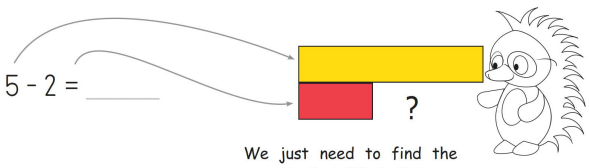
Lesson 44

Last lesson we solved take away equations by drawing pictures and crossing some of them out. Here's an equation for us to think about:

5 - 2 = _____



From the picture we can see that the first number (5) is the total number of objects that we started with. This total is broken into two parts: one part has no crosses and the other part has crosses. In the equation we are only given the total and the number of crossed out shapes. So, we can use Sumstix to find the missing part :



Find the missing sumstix and then write the answer to the equation below. The answer is the number that corresponds to the sumstix that you found.

5 - 2 = 3

It is easy to see that a light green sumstix fills in the gap, so the answer is three. Remember you may use your Sumstix whenever you need to.

Have a go at these subtractions on your own.

7 - 4 = 3

10 - 1 = 9

6 - 1 = 5

5 - 3 = 2

10 - 4 = 6

8 - 4 = 4

4 - 2 = 2

7 - 2 = 5

Use your stix!

Review and Practice

Write the mirror sums:

4 + 1 = 5

1 + 4 = 5

2 + 3 = 5

3 + 2 = 5

2 + 1 = 3

0 + 1 = 1

0 + 3 = 3

2 + 2 = 4

5 + 0 = 5

1 + 4 = 5

1 + 2 = 3

1 + 1 = 2

1 + 3 = 4

4 + 1 = 5

0 + 4 = 4

3 + 2 = 5

Lesson 45

Last lesson we looked at solving a take away equation using Sumstix. Did it look familiar to you at all? Let's look at another example:

7 - 3 = _____

These two Sumstix patterns are the same!

Compare this to the first example in lesson 41.

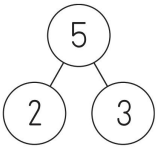
3 + _____ = 7

This is a big idea we'll look at more later but, for now, it means you can get away with memorising a whole lot fewer facts than you might expect.

In fact, instead of memorising tables like, "one plus one is two, two plus one is three..." we're just going to learn groups of numbers that are related and each group will allow us to solve four different equations. That's like getting four things for the price of one at the shops!

OK, so let's get back to work. You've already seen how Sumstix and number bonds can be used to show the same thing. We have been using them to represent different addition equations. Today I am going to show you that one Sumstix pattern and it's matching number bond can represent four different equations.

Let's look at an example:



This Sumstix pattern and number bond can represent two addition equations and two subtraction (take away) equations:

Mirror Sums

2 + 3 = 5

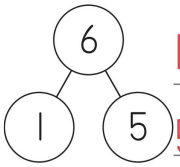
3 + 2 = 5

5 - 3 = 2

5 - 2 = 3

Mirror Take-aways

Your turn to practise! Write two addition equations and two subraction equations for each of the number bonds.

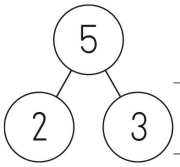


1 + 5 = 6

5 + 1 = 6

6 - 1 = 5

6 - 5 = 1



2 + 3 = 5

3 + 2 = 5

5 - 2 = 3

5 - 3 = 2

Review and Practice

3 + 2 = 5

2 + 2 = 4

5 + 0 = 5

1 + 2 = 3

1 + 0 = 1

3 + 1 = 4

4 + 1 = 5

1 + 3 = 4

1 + 1 = 2

4 + 0 = 4

2 + 1 = 3

2 + 3 = 5

Lesson 46

We are going to put all this together to solve some story problems. Let's work out the first one together.

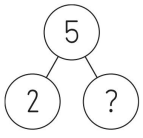
Bill took five bottles of water with him to the beach. He gave two bottles of water to a friend he met there. How many bottles of water did he have left for himself?

5 - 2 = _____

_____ bottles

Use your Sumstix to find the missing number then write it on the lines above.

The first thing we need to do is to work out what information we have been given and what we need to find. A number bond can help us:



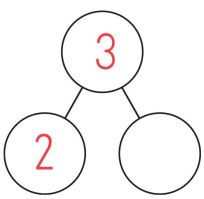
We know this is a take away because Bill started with five bottles and gave some away. The total is the number he started with. The number he gave away is one of the parts and the number he has left is the other part.

Now try some on your own.

Three turtles were sunning themselves on a log. Two dived into the water. How many turtles were left on the log?

3 - 2 = 1

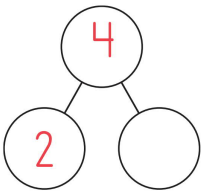
1 turtles



Ethan got 4 cookies from his mum. He gave two to his brother. How many did he have left for himself?

4 - 2 = 2

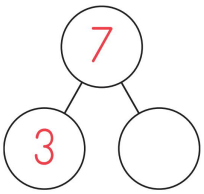
2 cookies



Melissa blew up seven balloons. Three of them popped. How many balloons were left?

7 - 3 = 4

4 balloons



Review and Practice

2 + 0 = 2 | 3 + 2 = 5 | 2 + 2 = 4

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

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

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

Lesson 47

Problems in real life don't always come in nice organised sets. You might have to add one minute and then subtract (take away) the next. Try solving these mixed up problems. You will have to watch the signs closely.

9 - 2 = 7 | 9 - 3 = 6

4 + 4 = 8 | 4 - 3 = 1

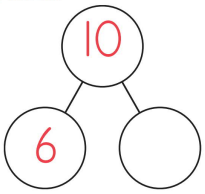
3 + 1 = 4 | 1 + 3 = 4

1 + 8 = 9 | 1 + 2 = 3

The shop manager put ten bananas in the "fruit for kids box" at the shop. When he came to check the box later in the day, he found that six of them had been taken. How many were left?

10 - 6 = 4

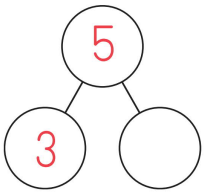
4 bananas



There were five glasses on the bench. Three had juice in them and the rest had water in them. How many glasses had water in them?

3 + 2 = 5

2 glasses



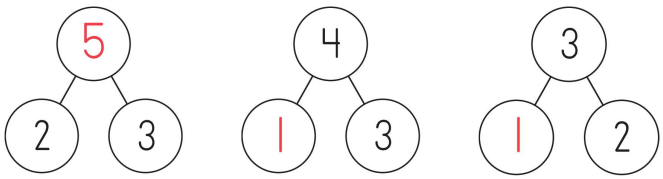
Review and Practice

Count on from the numbers.

0 1 2 | 7 8 9 | 8 9 10

4 5 6 | 5 6 7 | 3 4 5

Fill in the missing numbers.

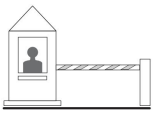


2 + 0 = 2 | 1 + 1 = 2 | 3 + 0 = 3

1 + 2 = 3 | 3 + 2 = 5 | 2 + 1 = 3

4 + 1 = 5 | 1 + 4 = 5 | 1 + 3 = 4

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



Lesson 48

Checkpoint 6

Fill in the missing number in each of the following addition equations.

3 + 4 = 7 | 9 + 1 = 10

4 + 1 = 4 | 2 + 9 = 10

1 + 3 = 4 | 2 + 2 = 8

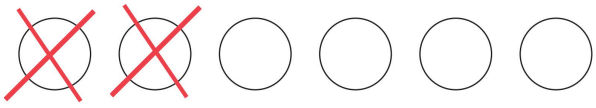
5 + 3 = 5 | 5 + 2 = 5

4 + 2 = 6 | 3 + 3 = 8

2 | 5

Cross out 2 shapes and then write a subtraction equation to describe the picture.

-2



6 - 2 = 4

Solve the following subtraction equations.

7 - 4 = 3

10 - 1 = 9

6 - 1 = 5

5 - 3 = 2

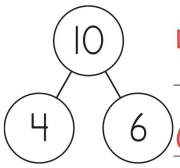
10 - 4 = 6

8 - 4 = 4

4 - 2 = 2

7 - 2 = 5

Write the two addition equations and two subtraction equations represented by the number bond:



4 + 6 = 10

10 - 4 = 6

6 + 4 = 10

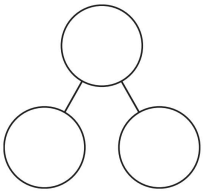
10 - 6 = 4

Write an equation and solve it to answer the following story problem. You may use Sumstix to help you solve the equation.

Seven ducks were swimming on a pond. Three flew away. How many were left?

7 - 3 = 4

4 ducks



Lesson 49

Numbers that Add to Five

Since you have five fingers on one hand, you can use this to find sums that add to five by holding some fingers up and folding the rest down. You can then write a sum about the two groups of fingers: fingers up plus fingers down equals five. Write the sums represented by the following pictures.

Example

Fingers up = 3

Fingers down = 2

3 + 2 = 5

4 + 1 = 5

2 + 3 = 5

1 + 4 = 5

5 + 0 = 5

3 + 2 = 5

Review and Practice

Count on from the numbers.

0 1 2

7 8 9

8 9 10

Write the mirror equations.

5 + 0 = 5

0 + 5 = 5

3 + 2 = 5

2 + 3 = 5

4 + 1 = 5

1 + 4 = 5

5 - 2 = 3

5 - 3 = 2

2 + 2 = 4

1 + 3 = 4

3 + 0 = 3

5 + 0 = 5

2 + 3 = 5

4 + 1 = 5

3 + 2 = 5

2 + 0 = 2

3 + 1 = 4

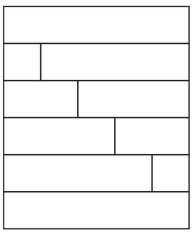
1 + 1 = 2

1 + 4 = 5

1 + 2 = 3

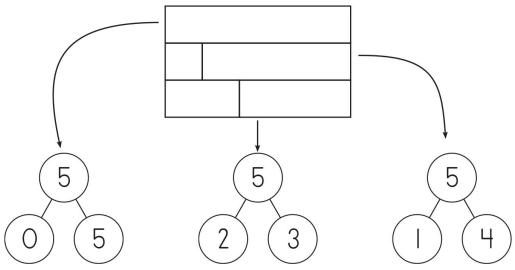
Lesson 50

We'll use Sumstix and number bonds to help us learn all the sums and take aways that involve a total of five. Build the following pattern (which we will call a Sumstix sandwich) and then (if you like) colour the picture to match:

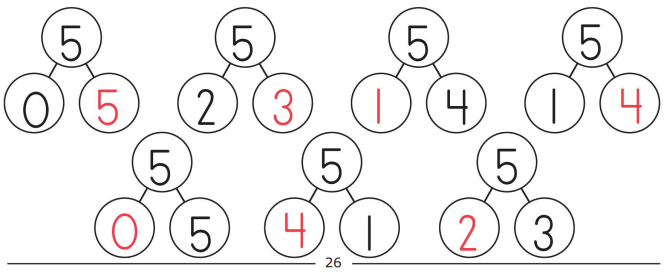


We call this a Sumstix sandwich. Can you see why?

Since the bottom half of the sandwich is just a flip of the top half, we'll toss it and work with only the top half. Each row of the pattern represents a number bond.



Fill in the missing number in the following number bonds:

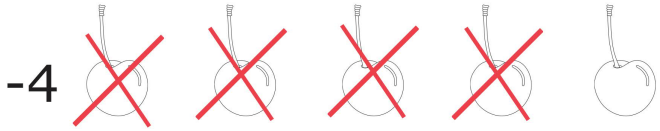


Review and Practice

Write the missing numbers on the number line.

0 1 2 3 4 5 6 7 8 9 10

Cross out four cherries and write an equation to describe the picture.



5 − 4 = 1

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

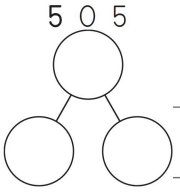
Lesson 51

Arrange the numbers in the number bond and then write the two addition facts and the two subtraction facts that are represented by the number bond.

Example: 4 1 3

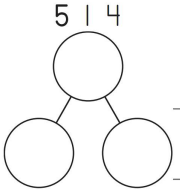
1+3=4 3+1=4

4-1=3 4-3=1



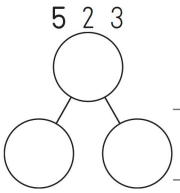
0 + 5 = 5 5 - 0 = 5

5 + 0 = 5 5 - 5 = 0



1 + 4 = 5 5 - 1 = 4

4 + 1 = 5 5 - 4 = 1



2 + 3 = 5 5 - 2 = 3

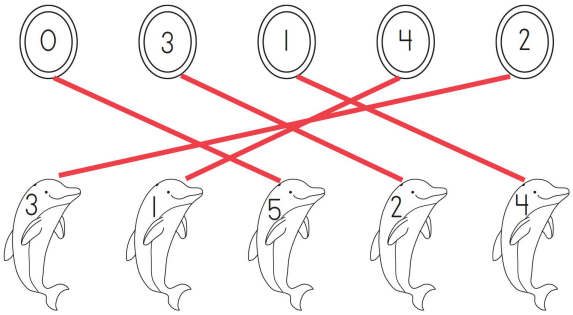
3 + 2 = 5 5 - 3 = 2

Review and Practice

Write a countdown from 10 to 0 on the line below.

10 9 8 7 6 5 4 3 2 1 0

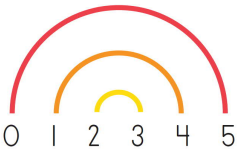
Join each dolphin to the ring that will make five when added to the number on the dolphin.



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

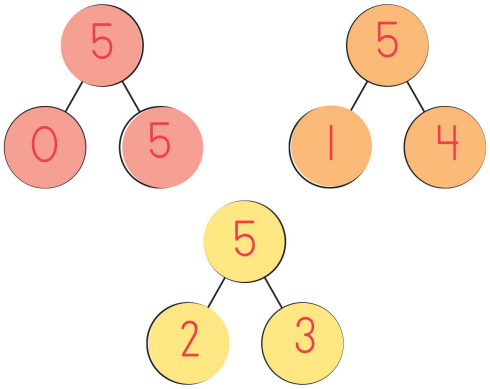
Lesson 52

Number rainbows are another interesting (and colourful) way to learn the number bonds/trios that add to five. Join the numbers that add to five using a rainbow. Use a different colour for each line.



Each line on the rainbow represents the parts in a number bond. Make number bonds to match the rainbow above.

Colouring is optional.



Review and Practice

1 2 3

Count the shapes and write the number.

7 9 5

Fill in the missing numbers.

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

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

5 + 0 = 5 1 + 4 = 5 4 + 1 = 5

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

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

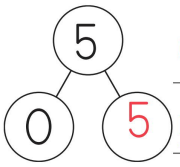
1 + 2 = 3 1 + 1 = 2 1 + 0 = 1

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

Lesson 53

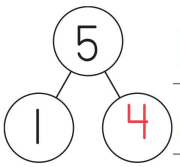
We've now seen all the tools we can use to help us learn and remember the number trios for five. We will spend the rest of this milestone practising until (hopefully) we know them all off by heart. Since they will all be practice and revision, most of the remaining exercises this milestone will not have any instructions.

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



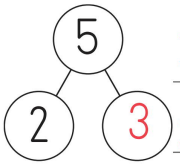
0 + 5 = 5 5 - 0 = 5

5 + 0 = 5 5 - 5 = 0



1 + 4 = 5 5 - 1 = 4

4 + 1 = 5 5 - 4 = 1



2 + 3 = 5 5 - 2 = 3

3 + 2 = 5 5 - 3 = 2

Review and Practice

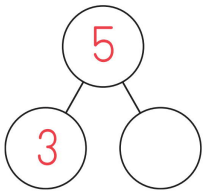
Write a countdown from 10 to 0 on the line below.

10 9 8 7 6 5 4 3 2 1 0

John planted five seeds in the garden. Three of them sprouted. How many did not sprout?

5 - 3 = 2

2 seeds didn't sprout



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

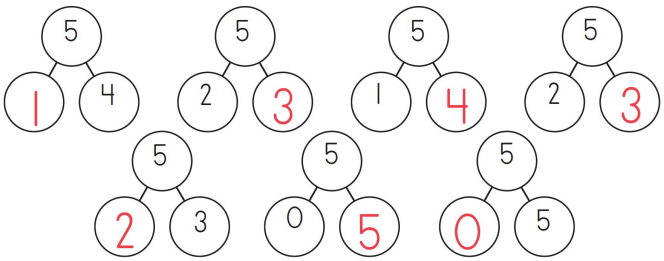
3 + 2 = 5 1 + 2 = 3 1 + 3 = 4

1 + 0 = 1 5 + 0 = 5 2 + 1 = 3

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

Lesson 54

Fill in the missing number in the following number bonds:

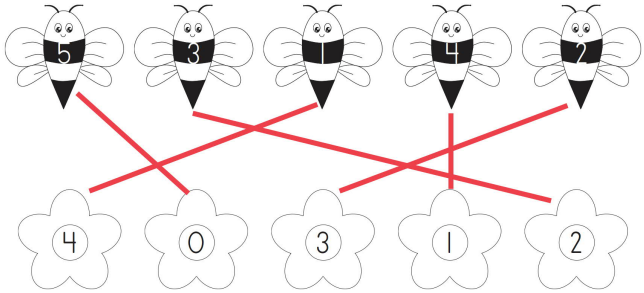


5 - 3 = 2 5 - 4 = 1 5 - 0 = 5

5 - 1 = 4 5 - 2 = 3 5 - 3 = 2

5 - 5 = 0 5 - 1 = 4 5 - 4 = 1

Join the bee to the flower that makes five.



Review and Practice

Count down (back) from the numbers.

10 11 12 7 8 9 8 9 10

Cross out three ducks and write an equation to describe the picture.

-3

5 — 3 = 2

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

2 + 2 = 4 5 + 0 = 5 2 + 3 = 5

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

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

Lesson 55

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

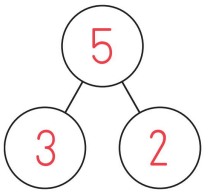
4 + 1 = 5 3 + 2 = 5 2 + 3 = 5

0 + 5 = 5 4 + 1 = 5 1 + 4 = 5

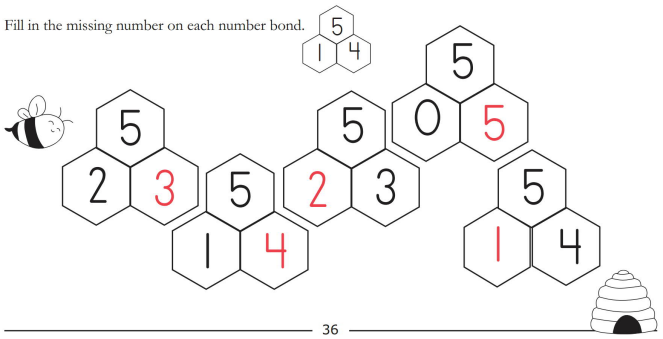
Alice was picking white and yellow flowers. She had five flowers all together. Three of the flowers were yellow. How many white flowers did she have?

3 + 2 = 5 or 5-3=2

5 white flowers



Fill in the missing number on each number bond.



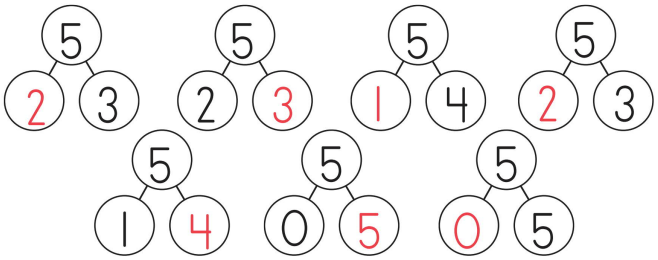
Review and Practice

1 2 3

Count the number of dots.

6 3 8

Fill in the missing number in the following number bonds:



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

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

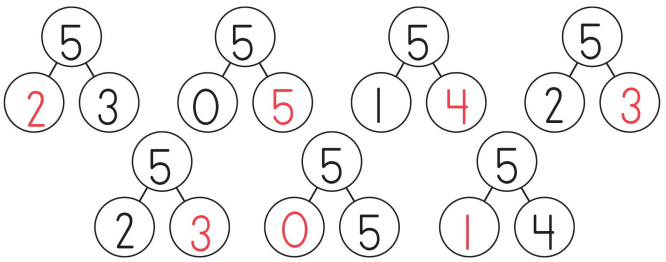
1 + 2 = 3 1 + 1 = 2 1 + 0 = 1

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

Lesson 56

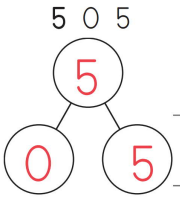
Checkpoint 7

Fill in the missing number in the following number bonds:



Write the numbers in the correct places in the number bond and then write the two addition facts and the two subtraction facts that are represented by the number bond.

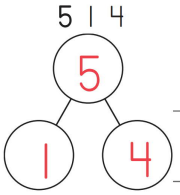
5 0 5



0 + 5 = 5 5 - 0 = 5

5 + 0 = 5 5 - 5 = 0

5 1 4



1 + 4 = 5 5 - 1 = 4

4 + 1 = 5 5 - 4 = 1

5 - 3 = 2 | 5 - 4 = 1 | 5 - 0 = 5

5 - 1 = 4 | 5 - 2 = 3 | 5 - 3 = 2

5 - 5 = 0 | 5 - 1 = 4 | 5 - 4 = 1

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

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

0 + 5 = 5 | 4 + 1 = 5 | 1 + 4 = 5

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

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

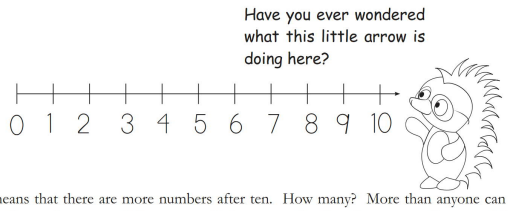
2 + 2 = 4 | 1 + 1 = 2 | 5 + 0 = 5

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

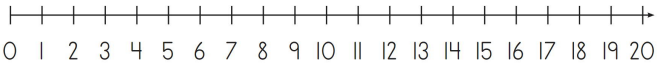
Lesson 57

Counting to and from Twenty

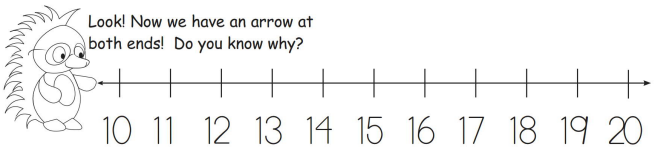
We have seen that a number line is a neat way to organise numbers. So far we have only seen number lines like the following:



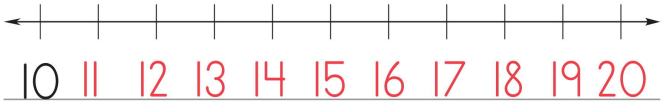
The arrow means that there are more numbers after ten. How many? More than anyone can count! In fact, if you had enough space and time you could draw a number line that goes on for ever. (That's a very long way.) But no human can do that! For now we are going to add just ten more numbers:



Read through the numbers from 11 to 20 a few times with your parent. As you can see on the number line above, the more numbers we try to put on a number line, the more squashed up they need to be, so normally, we only look at a piece of a number line. Here's one that goes from 10-20:



Make your own copy of the number line above by writing the numbers 10-20 on the number line below:



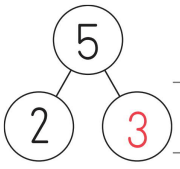
Review and Practice

Write the mirror equations.

5 - 4 = 1 | 5 - 0 = 5

5 - 1 = 4 | 5 - 5 = 0

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



2 + 3 = 5 | 5 - 2 = 3

3 + 2 = 5 | 5 - 3 = 2

1 + 2 = 3 | 2 + 2 = 4 | 1 + 3 = 4

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

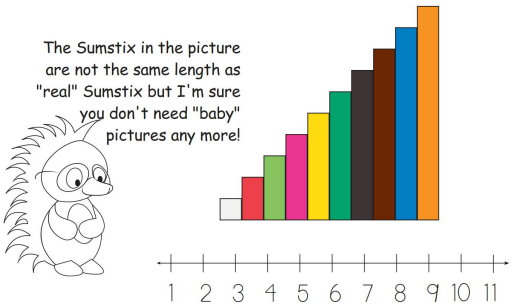
1 + 4 = 5 | 3 + 2 = 5 | 0 + 4 = 4

1 + 1 = 2 | 5 + 0 = 5 | 4 + 1 = 5

Lesson 58

We saw in the last book that we can build a Sumstix staircase to represent the numbers from 1-10. Colour in the picture below to match a Sumstix staircase.

When you finish colouring, draw a line from each rod to the correct number on the number line.



You'll notice that we don't have any Sumstix to represent number 11, or any other number bigger that 10 for that matter. Since eleven is just one more than ten, we represent it with a train like the one below. Build it then colour the picture:

Twelve is just one more than eleven so we could represent it like this:

But two white Sumstix are the same length as one red Sumstix so we can make a simpler train for twelve:

Thirteen is just one more than twelve so we could do this:

But this is simpler:

Do you get the idea now? Build all the numbers from 11-20 one at a time and then see if you can build any random number from the same range. You should practise doing this every day for a while.

Review and Practice

Write the number represented by each train.

15

19

Fill in the missing numbers.

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

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

2 + 3 = 5 5 + 0 = 5 3 + 2 = 5

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

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

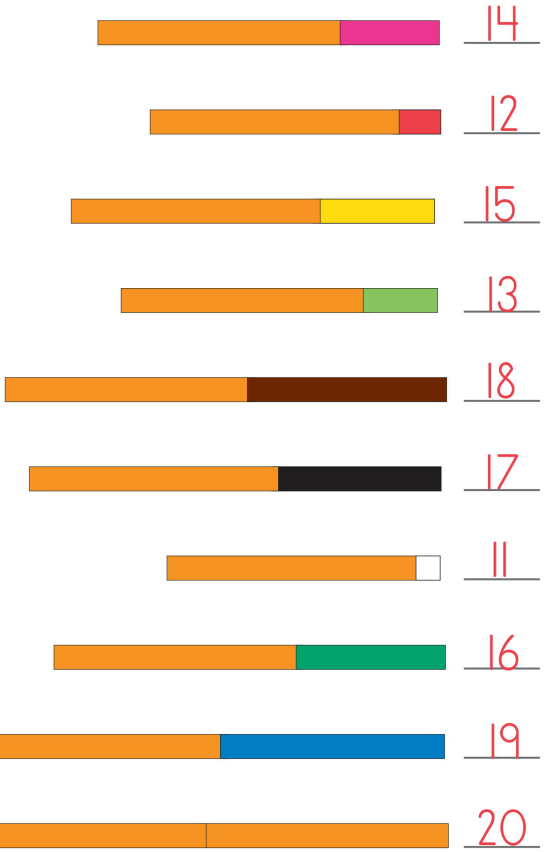
0 + 4 = 4 1 + 0 = 1 1 + 3 = 4

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

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

Lesson 59

Write the number represented by each train.



14

12

15

13

18

17

11

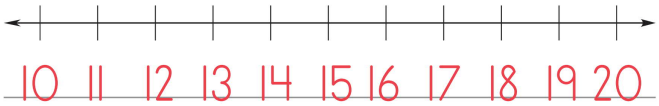
16

19

20

Review and Practice

Write the numbers 10-20 on the number line.



10 11 12 13 14 15 16 17 18 19 20

5 9

Circle the smallest number in each group.

20	10	14	15	11	18
16	17	12	19	13	10

2 + 0 = 2 2 + 3 = 5 1 + 2 = 3

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

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

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

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

Lesson 60

Now that we've learned to count to twenty, let's try to count backwards!

Read the numbers below as many times as you think you need to, then try to count backwards from 20 without looking.

20 19 18 17 16 15 14 13 12 11

10 9 8 7 6 5 4 3 2 1 0

Write a countdown starting at 20.

20

The number here tells us to start at 20.

20 19 18 17 16 15 14 13 12 11

10 9 8 7 6 5 4 3 2 1

Review and Practice

Count on from the number.

18 19 20

14 15 16

17 18 19

12 13 14

16 17 18

9 10 11

Write the mirror equation.

6 + 3 = 9

3 + 6 = 9

9 - 4 = 5

9 - 5 = 4

2 + 2 = 4

1 + 3 = 4

3 + 0 = 3

5 + 0 = 5

2 + 3 = 5

4 + 1 = 5

3 + 2 = 5

2 + 0 = 2

3 + 1 = 4

1 + 1 = 2

1 + 4 = 5

1 + 2 = 3

Lesson 61

Write a countdown starting at 20.

20

20 19 18 17 16 15 14 13 12 11

10 9 8 7 6 5 4 3 2 1

Count back from the number shown.

18 17 16

16 15 14

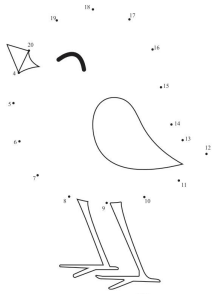
12 11 10

20 19 18

14 13 12

9 8 7

Join the dots. Start at 20 and count down.



Review and Practice

1 2 3

Count the dots.

19

14

17

5 9

Circle the biggest number in each group.

11	**16**	15	19	14	**20**
12	10	**17**	13	**18**	17

0 + 4 = 4

5 + 0 = 5

4 + 1 = 5

1 + 4 = 5

1 + 2 = 3

2 + 2 = 4

1 + 3 = 4

3 + 2 = 5

3 + 1 = 4

2 + 3 = 5

2 + 1 = 3

1 + 1 = 2

Lesson 62

20

Write a countdown starting at 20.

20 19 18 17 16 15 14 13 12 11

10 9 8 7 6 5 4 3 2 1

1 10

Rearrange the numbers in each group so that they are in order from biggest to smallest.

14 19 17	20 12 18
19 17 14	20 18 12

Fill in the missing number.

9 8 7

16 15 14

12 11 10

14 13 12

20 19 18

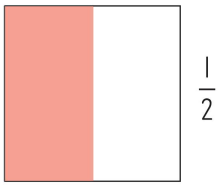
18 17 16

Review and Practice

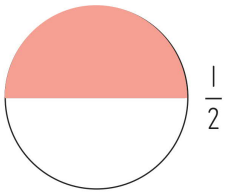
10-20 Write the sequence of numbers from 10 to 20.

10 11 12 13 14 15 16 17 18 19 20

Colour the fraction of the shape shown.



$\frac{1}{2}$



$\frac{1}{2}$

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

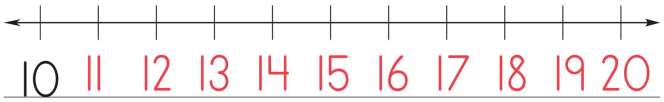
1 + 2 = 3 5 + 0 = 5 1 + 1 = 2

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

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

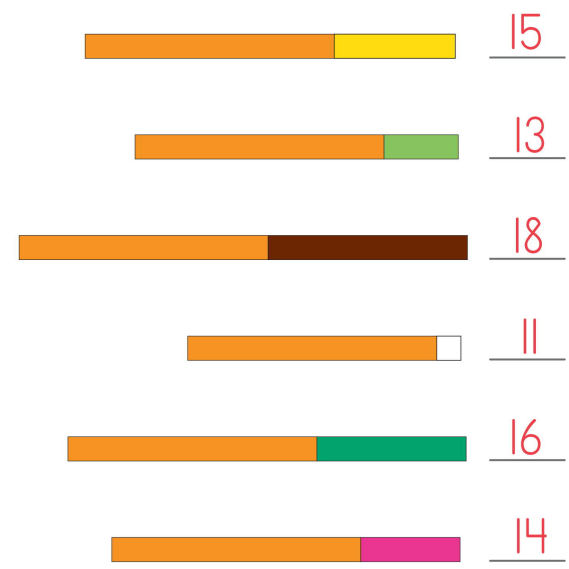
Lesson 63

Write the numbers 10-20 in the correct places under the number line.



10 11 12 13 14 15 16 17 18 19 20

Write the number represented by each train.



15

13

18

11

16

14

Review and Practice

20 Write a countdown from 20 to 0 on the line below.

20 19 18 17 16 15 14 13 12 11

10 9 8 7 6 5 4 3 2 1

Count back from the number shown.

20 19 18 17 16 15

11 10 9 12 11 10

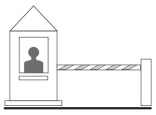
14 13 12 18 17 16

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

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

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

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



Lesson 64

Checkpoint 8

20 Write a countdown starting at 20.

20 19 18 17 16 15 14 13 12 11

10 9 8 7 6 5 4 3 2 1

Count forward from the number shown.

18 19 20 16 17 18 12 13 14

10 11 12 14 15 16 9 10 11

Fill in the missing number.

11 10 9 16 15 14 13 12 11

15 14 13 20 19 18 18 17 16

Rearrange the numbers in each box so that they are in order from biggest to smallest.

13	10	11	15	16	19
13	11	10	19	16	15
14	12	17	20	18	10
17	14	12	20	18	10

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

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

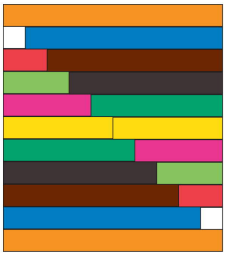
1 + 2 = 3 | 1 + 1 = 2 | 1 + 0 = 1

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

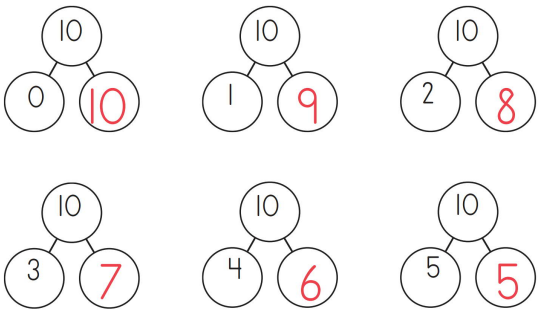
Lesson 65

Numbers That Add to Ten

Build a Sumstix sandwich for the number ten, then colour the picture below to match.



Use the sandwich above to complete the number bonds below.



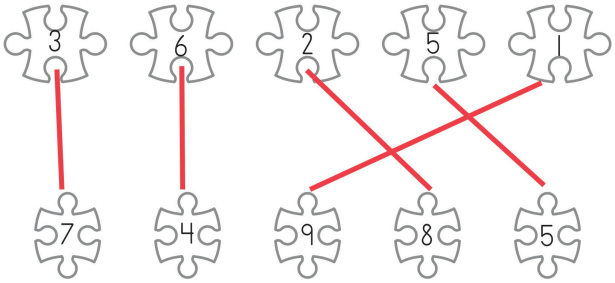
Review and Practice

Write the mirror equation.

4 + 6 = 10 → 6 + 4 = 10

2 + 8 = 10 → 8 + 2 = 10

Join the puzzle pieces that add to ten.



9 + 1 = 10 | 7 + 3 = 10 | 5 + 5 = 10

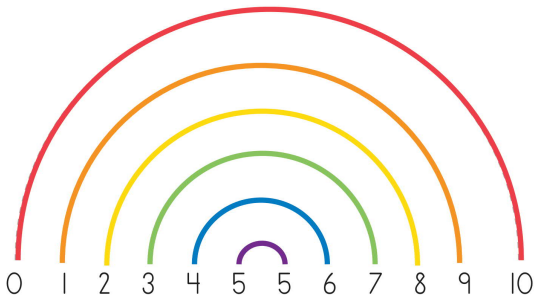
2 + 3 = 5 | 3 + 2 = 5 | 8 + 2 = 10

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

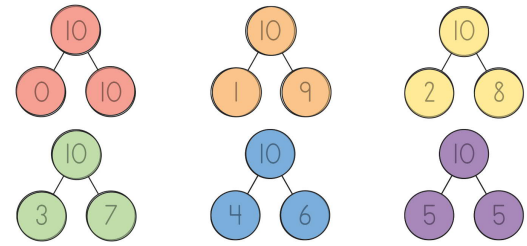
2 + 8 = 10 | 3 + 7 = 10 | 4 + 6 = 10

Lesson 66

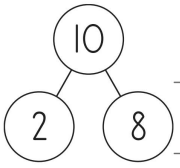
Make a number rainbow for the number ten. Use a different colour for each line of the rainbow.



Colour the number bonds to match the rainbow you just made.



Write two addition equations and two subtraction equations for the number bond shown.

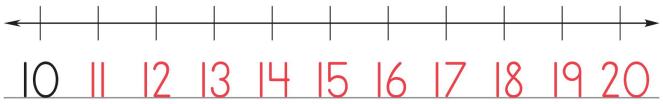


2 + 8 = 10 | 10 - 2 = 8

8 + 2 = 10 | 10 - 8 = 2

Review and Practice

Write the sequence of numbers from 10 to 20 on the number line.



Count up.

12 13 14 14 15 16 13 14 15

Write the number represented by the Sumstix train.


14


17

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

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

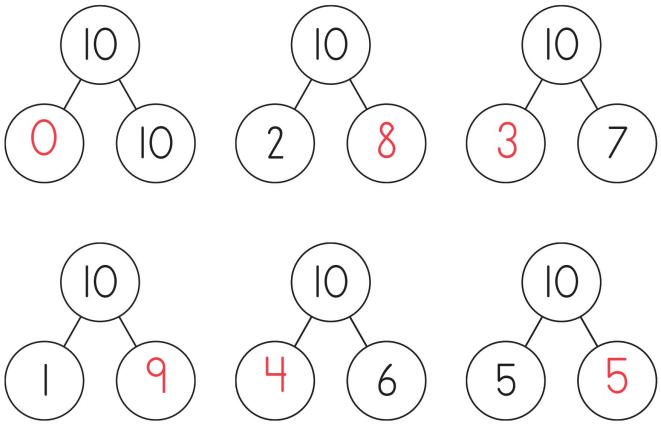
1 + 3 = 4 1 + 9 = 10 3 + 7 = 10

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

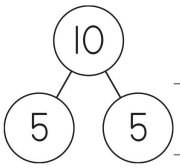
2 + 8 = 10 4 + 6 = 10 1 + 2 = 3

Lesson 67

Fill in the missing number on each of the number bonds below:



Something interesting happens with one of the number bonds for ten. See if you can find the four equations represented by the following number bond. Do you have four ***different*** equations?

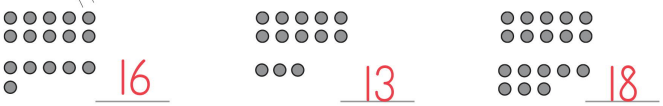


5 + 5 = 10 10 - 5 = 5

Did you find only TWO unique equations? I hope so, because that's all there is. We'll look at why next lesson. But for now, can you guess?

Review and Practice

1 2 3 Count the dots.


16 13 18

Fill in the blanks.

2 + 8 = 10 2 + 8 = 10 5 + 5 = 10

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

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

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

2 + 0 = 2 2 + 3 = 5 3 + 2 = 5

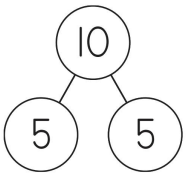
1 + 2 = 3 2 + 2 = 4 4 + 1 = 5

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

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

Lesson 68

We found a weird number bond last lesson, didn't we? Well, let's see what's going on with it. Build the Sumstix pattern that represents the number bond below.



You should end up with something like this. Colour the picture below to match your train:

Now try and swap the train around!

There are two Sumstix of the same colour. So when we swap them around, it still looks exactly the same! It's like a butterfly that's the same on both sides.

Now let's see what happens with the equations when we try to swap the parts around:

This looks like a butterfly too!

5 + 5 = 10

5 + 5 = 10

We can only find two equations (one addition equations and one subtraction equation) for these sorts of number bonds because when we swap the parts around, the equations still look the same.

We call this type of number bond a "double" because the two parts are exactly the same and double means two of the same thing. Some people find learning the doubles really easy. I hope you are one of them! Don't worry if you're not: you probably find something else easy that others find hard to do.

Review and Practice

Write the numbers 10-20 on the number line.

10 11 12 13 14 15 16 17 18 19 20

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

11	(20)	14	17	12	(19)
15	10	(16)	13	(18)	15

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

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

1 + 4 = 5 | 1 + 2 = 3 | 9 + 1 = 10

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

8 + 2 = 10 | 5 + 5 = 10 | 6 + 4 = 10

Lesson 69

Fill in the missing numbers in the following sums to ten:

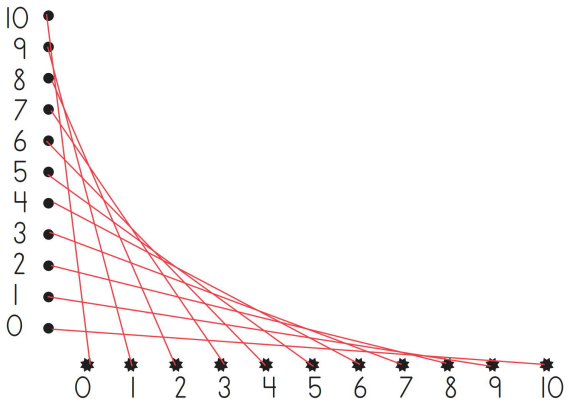
7 + 3 = 10 | 9 + 1 = 10 | 4 + 6 = 10

10 + 0 = 10 | 6 + 4 = 10 | 0 + 10 = 10

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

1 + 9 = 10 | 2 + 8 = 10 | 7 + 3 = 10

Join the circles to the stars so they add to ten. If you do it carefully with a ruler, you'll get a cool pattern.



Review and Practice

Write the number sequence from 10 to 20.

10-20

10 11 12 13 14 15 16 17 18 19 20

Write the mirror equations.

4 + 6 = 10 | 10 - 8 = 2

6 + 4 = 10 | 10 - 2 = 8

Write the number represented by the train.

19

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

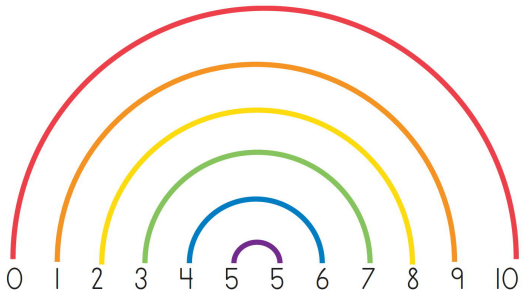
1 + 2 = 3 | 8 + 2 = 10 | 3 + 1 = 4

5 + 5 = 10 | 2 + 3 = 5 | 1 + 4 = 5

3 + 7 = 10 | 1 + 9 = 10 | 2 + 8 = 10

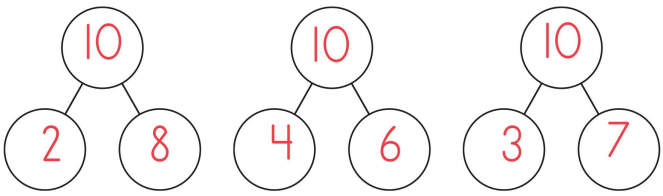
3 + 2 = 5 | 4 + 6 = 10 | 2 + 2 = 4

Lesson 70



Fill in the number bonds with the numbers given. You can use coloured pencils to match your rainbow if you like.

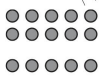
10 2 8 | 10 4 6 | 10 3 7



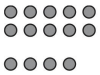
Review and Practice

1 2 3

Count the dots.



15



14

19

3 + 7 = 10

3 + 7 = 10

5 + 5 = 10

2 + 8 = 10

4 + 6 = 10

1 + 9 = 10

1 + 9 = 10

2 + 8 = 10

4 + 6 = 10

3 + 2 = 5

3 + 1 = 4

6 + 4 = 10

1 + 2 = 3

1 + 4 = 5

7 + 3 = 10

1 + 1 = 2

4 + 6 = 10

3 + 7 = 10

2 + 3 = 5

2 + 2 = 4

2 + 8 = 10

1 + 9 = 10

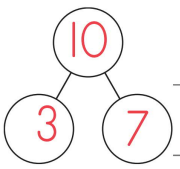
5 + 5 = 10

8 + 2 = 10

Lesson 71

Write the numbers in the number bond then write the equations represented by the number bond.

10 3 7



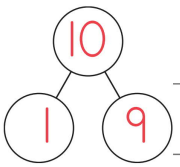
3 + 7 = 10

7 + 3 = 10

10 - 3 = 7

10 - 7 = 3

10 1 9



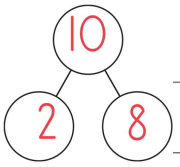
1 + 9 = 10

9 + 1 = 10

10 - 1 = 9

10 - 9 = 1

10 2 8



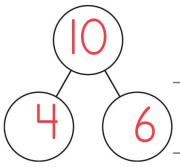
2 + 8 = 10

8 + 2 = 10

10 - 2 = 8

10 - 8 = 2

10 4 6



4 + 6 = 10

6 + 4 = 10

10 - 4 = 6

10 - 6 = 4

Review and Practice

Write the numbers 10-20 on the number line.

10 11 12 13 14 15 16 17 18 19 20

Count on.

9 10 11

14 15 16

16 17 18

Write the number represented by the train.

20

14

5 + 5 = 10

2 + 8 = 10

7 + 3 = 10

1 + 9 = 10

1 + 1 = 2

8 + 2 = 10

2 + 2 = 4

6 + 4 = 10

2 + 3 = 5

3 + 1 = 4

1 + 4 = 5

4 + 6 = 10

3 + 7 = 10

2 + 1 = 3

3 + 2 = 5

Lesson 72

2 + 8 = 10

4 + 6 = 10

1 + 9 = 10

5 + 5 = 10

0 + 10 = 10

4 + 6 = 10

2 + 8 = 10

1 + 9 = 10

2 + 8 = 10

1 + 9 = 10

3 + 7 = 10

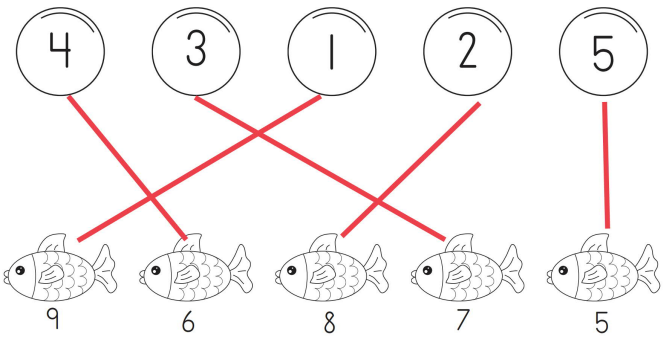
5 + 5 = 10

3 + 7 = 10

9 + 1 = 10

2 + 8 = 10

Make 10 by joining the fish to the bubbles.



Review and Practice

Write the numbers 10-20 on the number line.

10 11 12 13 14 15 16 17 18 19 20

5 9 Circle the smallest number in each group.

10	19	12	16	13	14
18	15	11	20	17	16

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

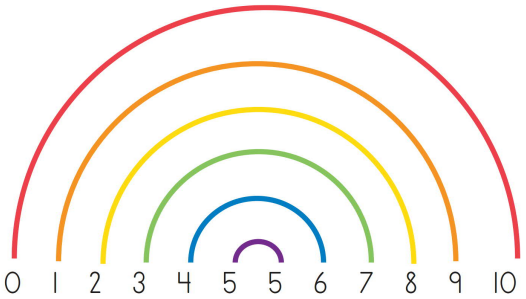
1 + 1 = 2 7 + 3 = 10 3 + 1 = 4

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

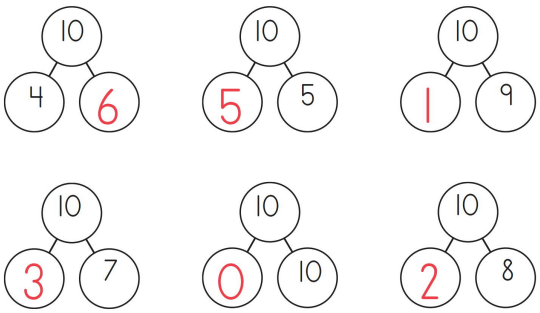
4 + 6 = 10 8 + 2 = 10 2 + 3 = 5

3 + 2 = 5 5 + 5 = 10 1 + 2 = 3

Lesson 73



Fill in the missing number in each number bond then colour the number bond to match your rainbow.



Review and Practice

10-20 Write the number sequence from 10 to 20.

10 11 12 13 14 15 16 17 18 19 20

Write the mirror equations.

1 + 9 = 10
9 + 1 = 10

10 - 7 = 3
10 - 3 = 7

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

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

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

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

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

Lesson 74

10 - 0 = 10 10 - 9 = 1 10 - 0 = 10

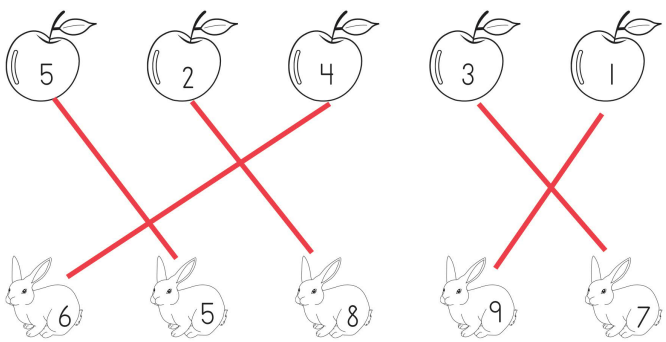
10 - 2 = 8 10 - 5 = 5 10 - 1 = 9

10 - 3 = 7 10 - 4 = 6 10 - 5 = 5

10 - 9 = 1 10 - 10= 0 10 - 7 = 3

10 - 6 = 4 10 - 4 = 6 10 - 8 = 2

Join the bunnies to the apples to make ten.



Review and Practice

Count on.

13 14 15 | 15 16 17 | 11 12 13

16 17 18 | 10 11 12 | 12 13 14

10 - 1 = 9 | 10 - 3 = 7 | 10-9 = 1

10 - 4 = 6 | 10 - 8 = 2 | 10 - 5 = 5

10 - 7 = 3 | 10 - 6 = 4 | 10 - 2 = 8

2 + 3 = 5 | 5 + 5 = 10 | 2 + 8 = 10

3 + 7 = 10 | 5 + 0 = 5 | 3 + 2 = 5

1 + 9 = 10 | 4 + 6 = 10 | 1 + 4 = 5

7 + 3 = 10 | 2 + 3 = 5 | 2 + 2 = 4

Lesson 75

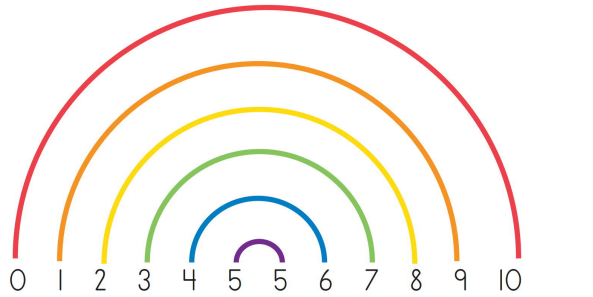
10 + 0 = 10 | 9 + 1 = 10 | 10 + 0 = 10

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

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

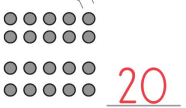
1 + 9 = 10 | 0 +10 =10 | 7 + 3 = 10

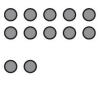
6 + 4 = 10 | 6 + 4 = 10 | 2 + 8 = 10



Review and Practice

1 2 3 Count the dots.

 20

 12

 16

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

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

4 + 6 = 10 | 1 + 9 = 10 | 2 + 8 = 10

3 + 7 = 10 | 2 + 1 = 3 | 1 + 1 = 2

2 + 2 = 4 | 8 + 2 = 10 | 2 + 3 = 5

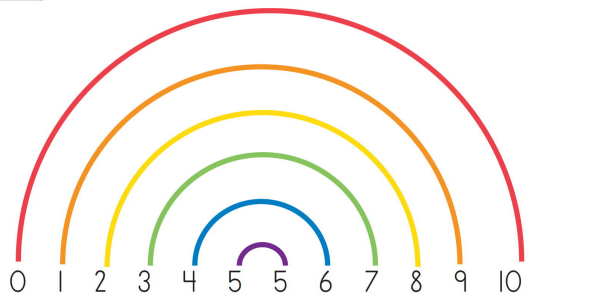
4 + 6 = 10 | 1 + 3 = 4 | 6 + 4 = 10

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

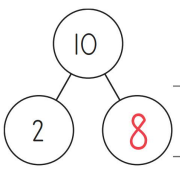
1 + 9 = 10 | 4 + 1 = 5 | 5 + 5 = 10

Lesson 76

Checkpoint 9

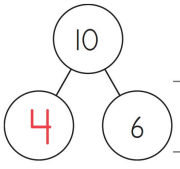


Fill in the missing number in the number bond then write the four equations represented by it.



2 + 8 = 10 | 10 - 2 = 8

8 + 2 = 10 | 10 - 8 = 2



4 + 6 = 10 | 10 - 4 = 6

6 + 4 = 10 | 10 - 6 = 4

8 + 2 = 10 | 8 + 2 = 10 | 7 + 3 = 10

5 + 5 = 10 | 2 + 8 = 10 | 2 + 8 = 10

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

4 + 6 = 10 | 9 + 1 = 10 | 0 + 10 = 10

10 + 0 = 10 | 6 + 4 = 10 | 1 + 9 = 10

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

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

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

6 + 4 = 10 | 2 + 1 = 3 | 8 + 2 = 10

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

Review and Practice

Find the mirror equations.

7 + 3 = 10

3 + 7 = 10

5 - 3 = 2

5 - 2 = 3

Write the number represented by the train.

15

18

3 + 7 = 10 | 1 + 2 = 3 | 1 + 4 = 5

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

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

7 + 3 = 10 | 2 + 8 = 10 | 6 + 4 = 10

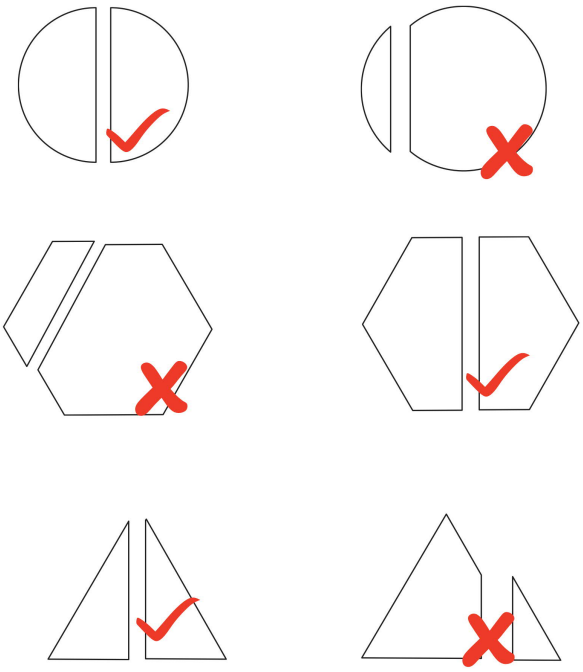
1 + 9 = 10 | 5 + 5 = 10 | 2 + 3 = 5

Lesson 77

Finding Half of an Object

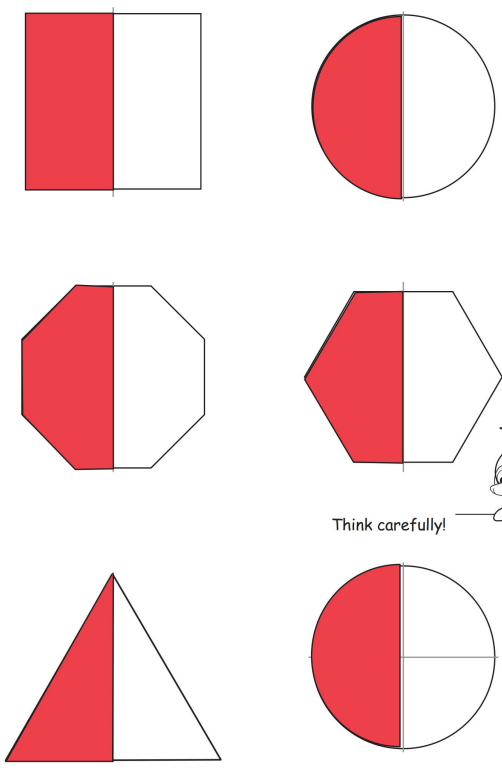
You've probably said something like, "I want the big half!" some time in your life but did you know this is actually **impossible**? That's because in order to have one half of something you need to divide (cut/break) it into two pieces that are ***exactly*** the same size.

Tick the pictures that show a shape that has been cut half and cross those that where the shape is cut into two unequal pieces.



Lesson 78

Colour one half of each of the following shapes. The guidelines will help you.

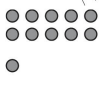


Think carefully!

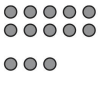
Review and Practice

1 2 3

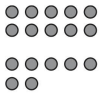
Count the dots.



11



13



17

1 + 9 = 10

4 + 6 = 10

2 + 3 = 5

1 + 4 = 5

3 + 7 = 10

2 + 8 = 10

5 + 5 = 10

1 + 9 = 10

1 + 4 = 5

2 + 3 = 5

1 + 2 = 3

8 + 2 = 10

1 + 1 = 2

3 + 7 = 10

7 + 3 = 10

6 + 4 = 10

2 + 8 = 10

1 + 4 = 5

2 + 2 = 4

4 + 6 = 10

3 + 2 = 5

1 + 9 = 10

3 + 1 = 4

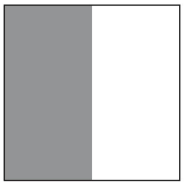
5 + 5 = 10

Lesson 79

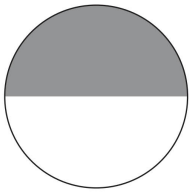
In maths we write one half like this...

$\frac{1}{2}$

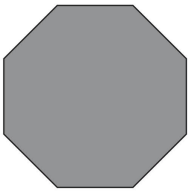
Write one half (using the maths notation above) next to each picture that shows one half of the shape shaded. If the whole shape is shaded, write the number 1 in the box. If neither one half nor one whole is shaded, write nothing.



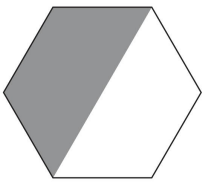
$\frac{1}{2}$



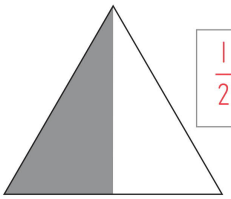
$\frac{1}{2}$



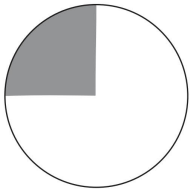
1



$\frac{1}{2}$



$\frac{1}{2}$



Review and Practice

Write the numbers in the number bond then write the equations represented by the number bond.

18 19 20

11 12 13

16 17 18

Write the number represented by the train.

14

5 - 4 = 1

10 - 5 = 5

10-2 = 8

10 - 3 = 7

5 - 2 = 3

10 - 4 = 6

10 - 1 = 9

10 - 7 = 3

5 - 0 = 5

4 + 6 = 10

1 + 1 = 2

2 + 8 = 10

3 + 7 = 10

2 + 3 = 5

2 + 2 = 4

1 + 9 = 10

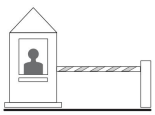
4 + 1 = 5

5 + 5 = 10

8 + 2 = 10

6 + 4 = 10

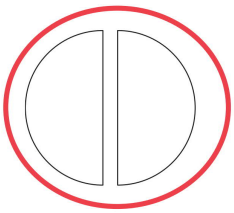
1 + 2 = 3

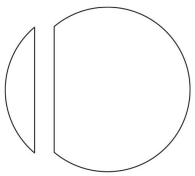


Lesson 80

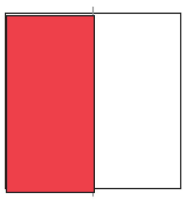
Checkpoint 10

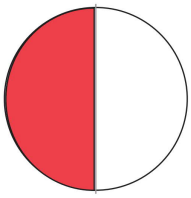
Circle the picture which shows one half.



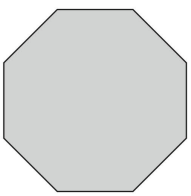


Colour one half of each of the shapes below.

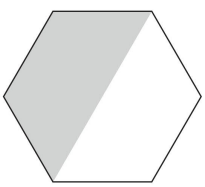




Write one or one half next to each shape to tell how much is shaded.



1



$\frac{1}{2}$

6 + 4 = 10 | 1 + 3 = 4 | 4 + 6 = 10

5 + 5 = 10 | 1 + 1 = 2 | 3 + 2 = 5

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

2 + 2 = 4 | 2 +8 =10 | 1 + 9 = 10

2 + 3 = 5 | 1 + 4 = 5 | 3 + 7 = 10

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

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

1 + 3 = 4 | 1 + 1 = 2 | 2 + 8 = 10

4 + 6 = 10 | 7 + 3 = 10 | 2 + 3 = 5

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