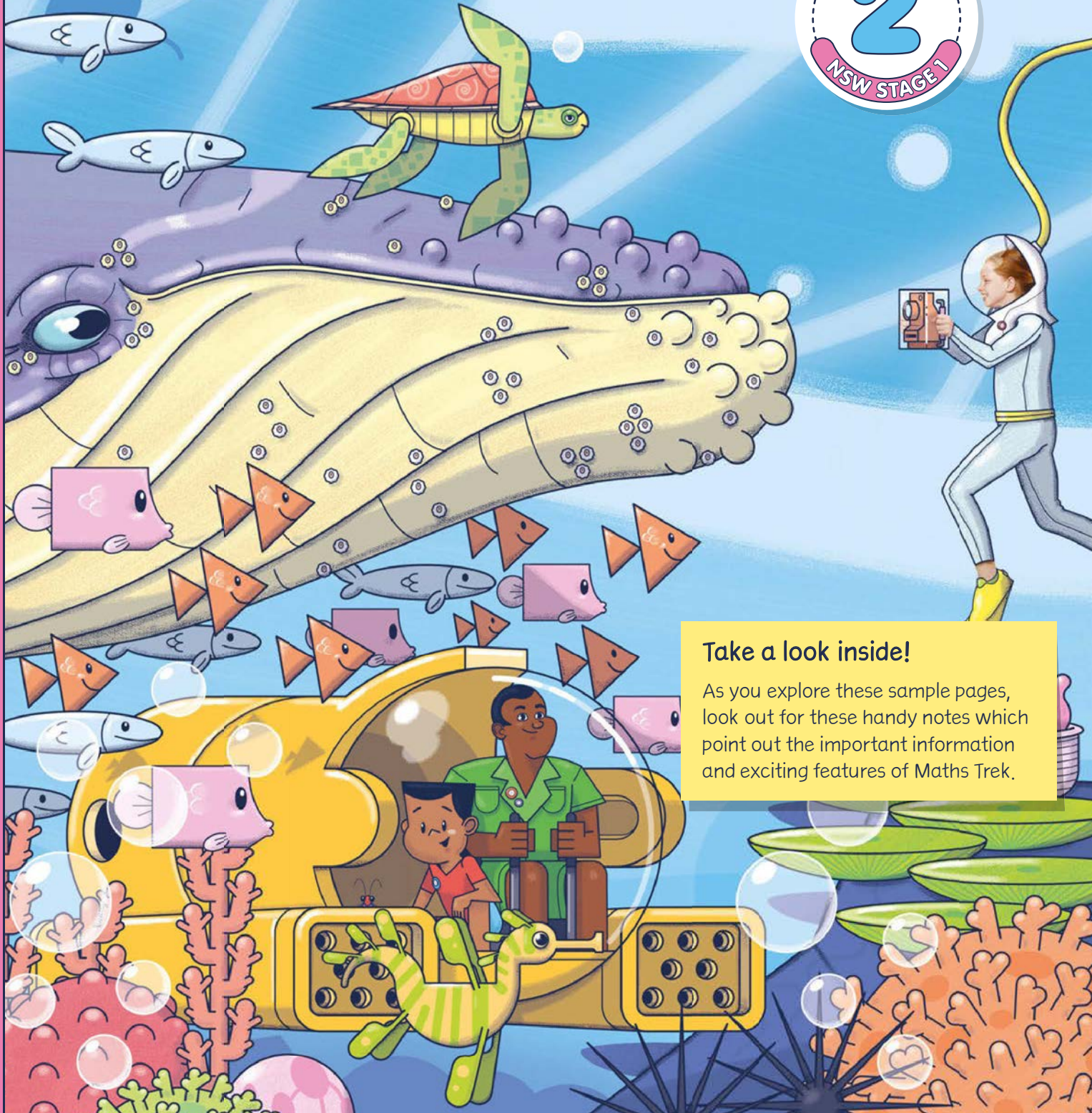


# Maths Trek

Exploring maths in the real world

2  
NSW STAGE 1



## Take a look inside!

As you explore these sample pages, look out for these handy notes which point out the important information and exciting features of Maths Trek.

Sample Student Book Pages  
(NSW Syllabus Edition)

firefly  
EDUCATION

# Your Maths Trek Teacher Guide

- Maths Trek is a whole-school numeracy program that provides everything you and your students need to explore maths in real-world contexts.

To maximise the benefits of the program, use the Student Book with the explicit teaching resources at Maths Trek Online to build, develop and strengthen each student's ability to work mathematically.

An adventure in maths for every student from Kindergarten to Year 6!

## Maths Trek Online

Maths Trek Online is home to lesson guides, teaching slides, interactive teaching tools, videos, printable differentiation tasks and termly assessments.

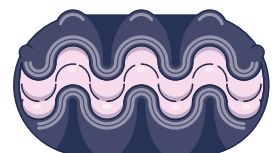
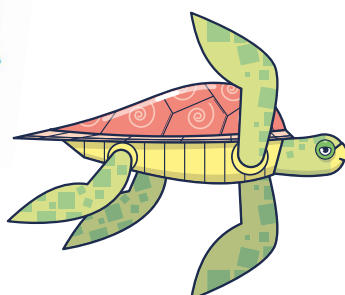
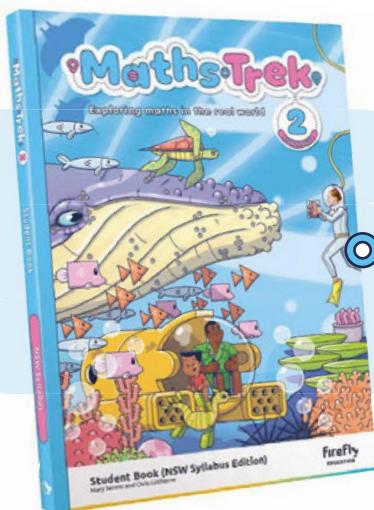
You will also find investigation notes, Student Book answers, and preparation and planning documents at Maths Trek Online.



## Maths Trek Student Book

The Student Book is packed with teacher-guided and independent activities for every topic and problem-solving strategy.

Students will also find plenty of practice problems, revision activities, application questions and investigation pages in the Student Book.



# Using the Student Book with Online

## Topics

Use the online lesson guides and teaching slides to explicitly teach each topic.

Complete the *Work together* activities with your students and then have them move on to the *Your turn* activities for independent practice.

The Student Book is an integral part of the consolidation process. Once you have explicitly taught each concept, it is essential that students apply what they have learned to the activities.

## Revision

Use the revision activities throughout the Student Book to consolidate each student's learning and identify strengths and weaknesses.

## Problem-solving

Use the videos, teaching slides and modelled examples in the Student Book to teach each problem-solving strategy.

Students consolidate their skills throughout the year by independently completing practice problems. These build confidence in choosing appropriate strategies to solve a variety of unfamiliar problems.

Download the *Problem-Solving Progress Checklist* to record each student's progress throughout the year.

## Investigations

Investigations provide students with opportunities to apply maths concepts learned in previous weeks to unfamiliar, extended mathematical problems.

Use the online teaching notes, exemplars, videos and printable resources to introduce and guide students through each step of the investigation.

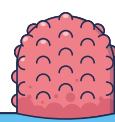
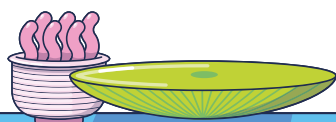
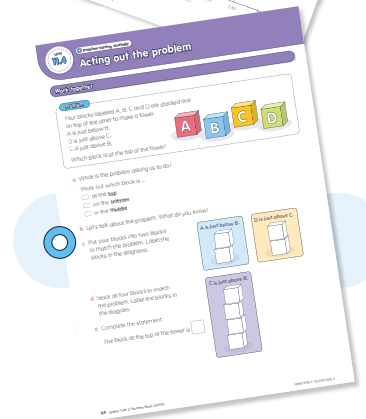
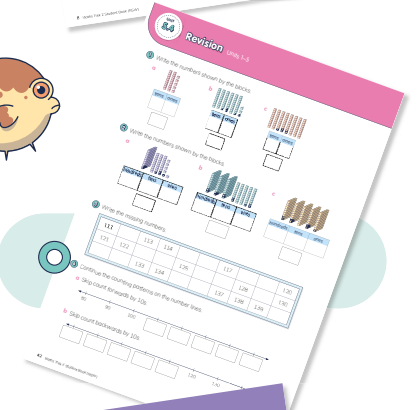
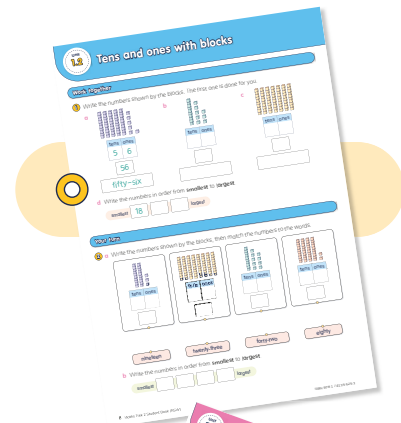
Work together with your students to read, plan and complete each step of the investigation, including the Student Book activity.

Use the online critical thinking lessons to ensure students can reflect, reason and communicate their understanding of what they have discovered.

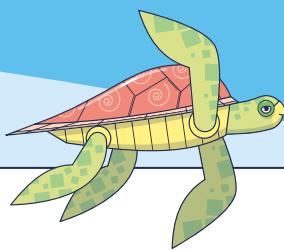
Download the *Investigation report* and use the formative assessment checklist to record each student's progress.

## Assessment


Download the four termly assessments at Maths Trek Online to assess each student's understanding of the preceding topics. Each assessment includes graded C to A level questions.




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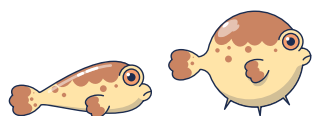


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### Want more investigations?

You'll find extra investigations at Maths Trek Online – a great way to round off a year of maths!

### Planning made easy

Maths Trek guides you and your students through a sequence of topics, problem-solving, revision and investigations. As the year progresses, your students consolidate their learning and revisit concepts. They also have ample opportunity to apply what they've learned to unfamiliar, extended maths problems.

You'll find four assessments in the Yearly Plan too – one for each term. They assess each student's understanding of the preceding topics and are available to print at Maths Trek Online.

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### Extra investigations

Why not conclude the year with an extra investigation? Teachers can log in to Maths Trek Online to access the printable pages and resources.

 **Investigation: Paint it**


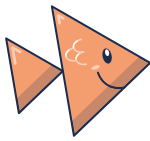
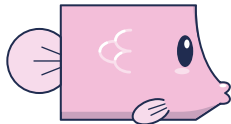
 **Investigation: Up, up and away**

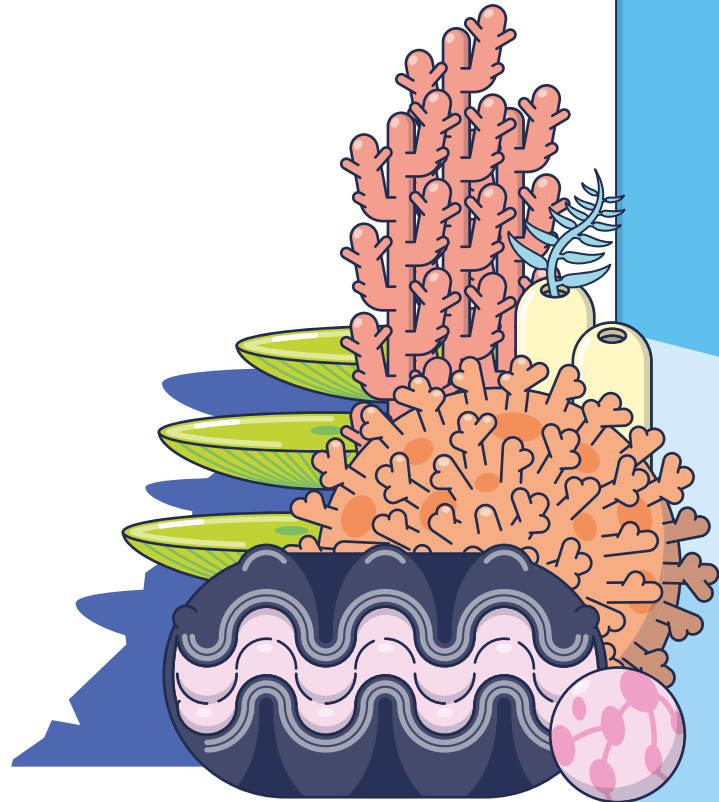
\* Log in to Maths Trek Online to download and print assessments.

# Maths is everywhere

## Cover hunt

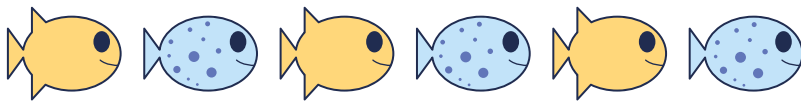
Look at the front cover of your book. Count the fish.  
Use tally marks to show how many fish.

Fish	Tally
	
	
	

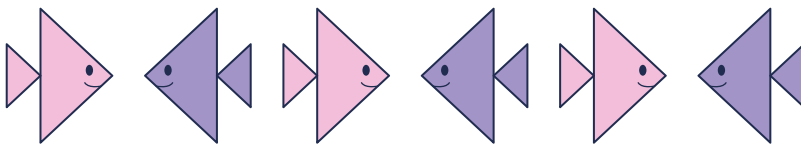


## Fish patterns

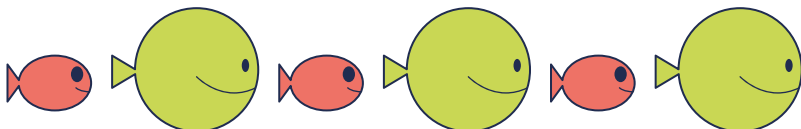
Say the patterns aloud. Circle the repeated parts. Continue the patterns.



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## Engaging activities from day one

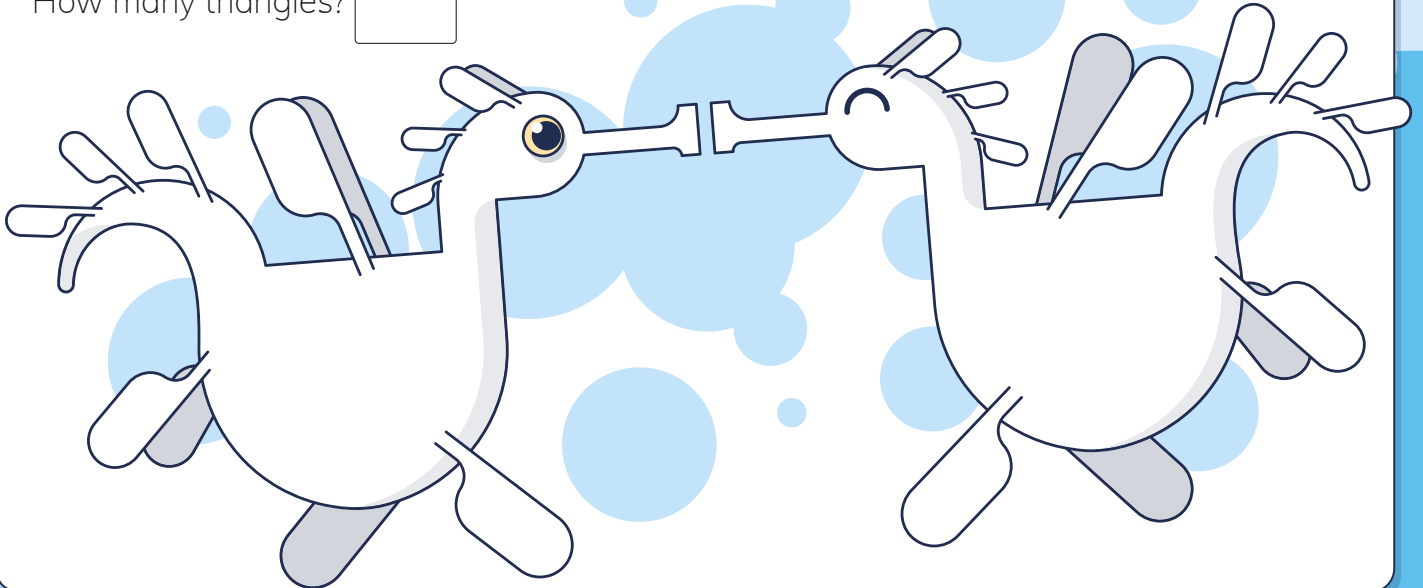
Get your students excited about maths as they apply skills learned in the previous year to these fun activities – all cleverly inspired by the art on the cover.

### Sea dragon art

Draw **yellow** circles on one sea dragon. Draw

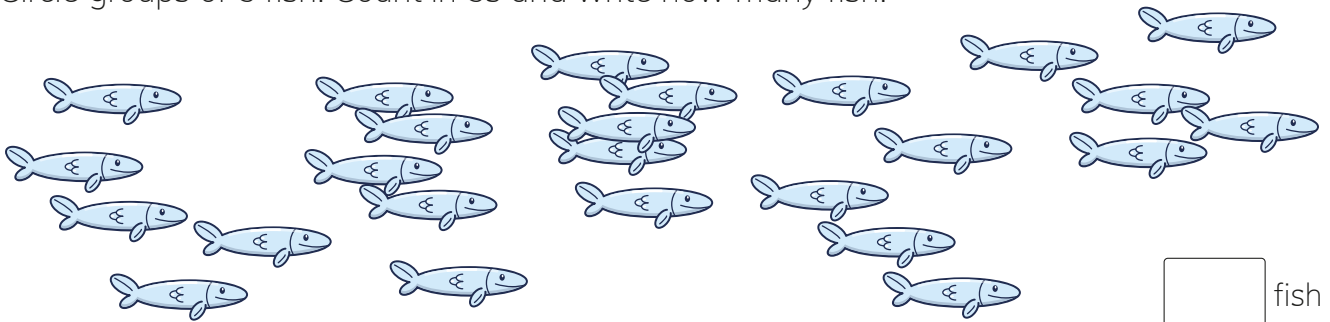
How many circles did you draw?

How many triangles?



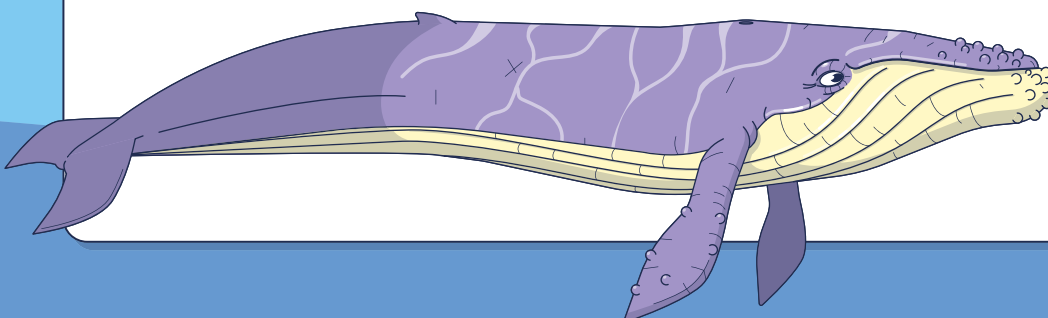
### Groups of five

Circle groups of 5 fish. Count in 5s and write how many fish.



### Whale of a problem!

A humpback whale has a mass of 30 tonnes! Work out the mass of 2 humpback whales.




tonnes

## Work together

1 Complete each set of times. The first one is done for you.

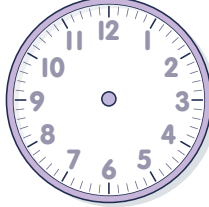
**a**



9:15

quarter past 9


**b**



:

quarter past 5


**c**



8:30

past


**d**



:

past


**Reminder**

quarter past	half past
	
10:15 quarter past 10	4:30 half past 4

## Your turn


2 Write the digital times to match the clocks and pictures.

**a**




:

Lin wakes up.

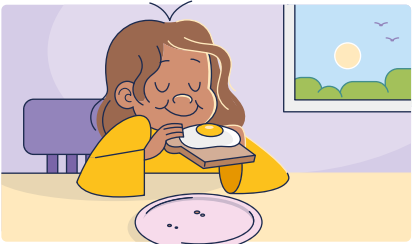


**b**



:

Lin has an egg on toast.



**c**



:

Lin hops on the school bus.






3 Complete each set of times to show when you wake up and when you go to bed.

**70+ topics in every year**

From number and algebra to statistics and probability, your students complete a wide variety of activities to apply what they've learned in each lesson.

Some concepts are revisited throughout the year to consolidate learning.

**a**

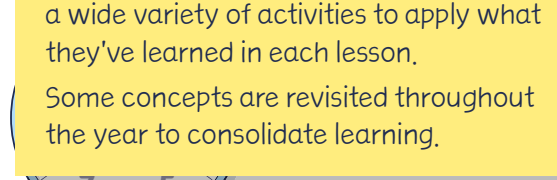


:

I wake up at

in the morning.

**b**



:

I go to bed at

at night.

4 **Riddle time:** Read the times shown on the clocks. To solve the riddle, copy the letters into the boxes below to match the times.



What do you call the third hand on a clock?

half past 9	12:15	4:00
<input type="text"/>	<input type="text"/>	<input type="text"/>

9 o'clock	4:00	3:30	2:30	half past 4	quarter past 6
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

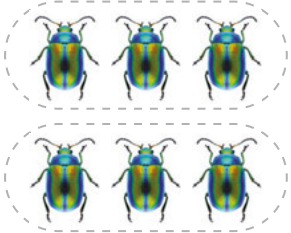
12:15	quarter past 8	half past 4	quarter past 6
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



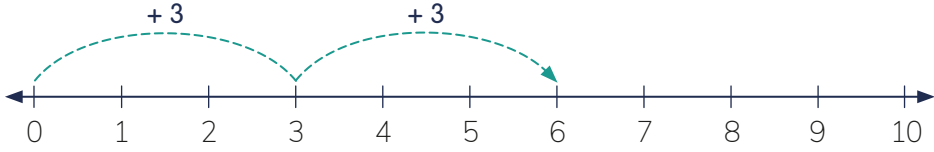
## Work together

- 1 Complete the number sentences to match the equal groups.  
Use the number lines to help you. The first one is started for you.

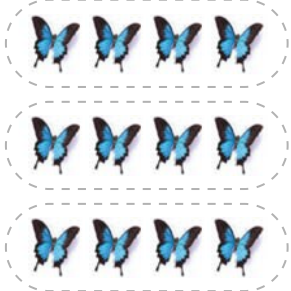
**a**



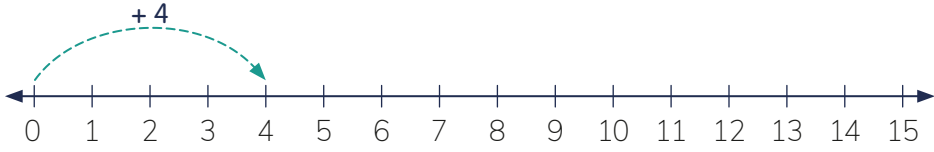
$3 + 3 = 6$   
 or  $2$  groups of  $3 = \square$



**b**

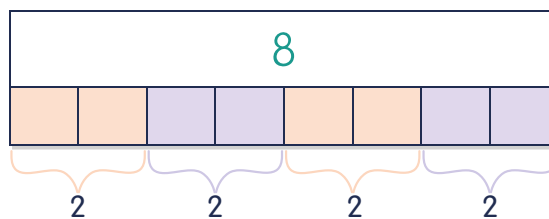


$\square + \square + \square = \square$   
 or  $\square$  groups of  $\square = \square$



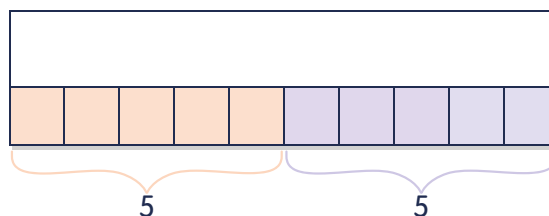
- 2 Use the bar models to solve the problems. The first one is started for you.

- a** There are 4 jars with 2 lollies in each jar.  
How many lollies altogether?



$2 + 2 + 2 + 2 = \square$   
 4 groups of 2 =  $\square$

- b** There are 2 bags with 5 balls in each bag.  
How many balls altogether?

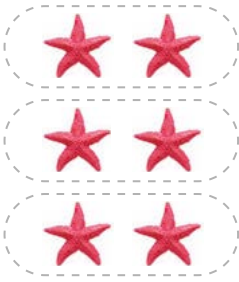


$\square + \square = \square$   
 2 groups of 5 =  $\square$

## Your turn

3 Complete the number sentences to match the equal groups.

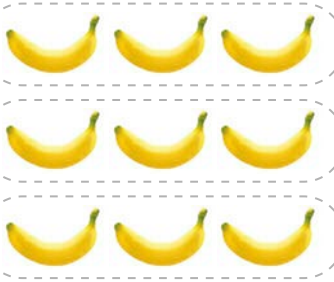
**a**



+  +  =

groups of  =

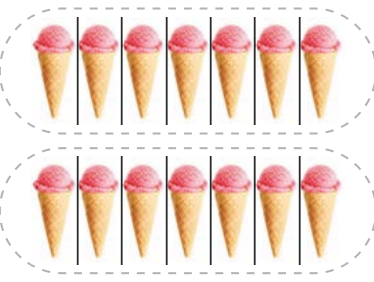
**b**



+  +  =

groups of  =

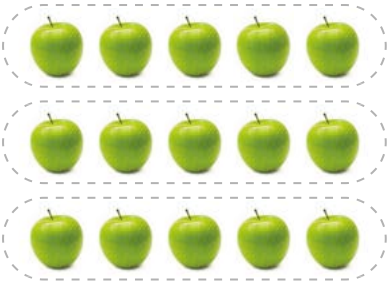
**c**



+  =

groups of  =


**d**



+  +  =

groups of  =

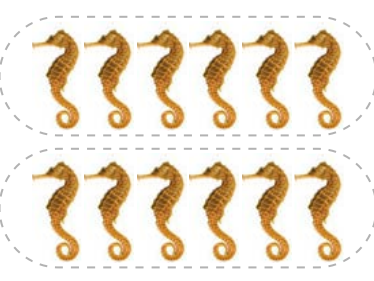
**e**



+  +  =

groups of  =

**f**

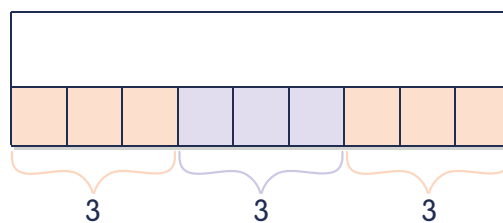


+  =

groups of  =

4 Use the bar models to solve the problems.

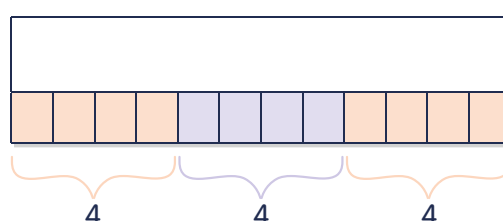
- a** There are 3 bowls with 3 bananas in each bowl.  
How many bananas altogether?



+  +  =

groups of  =

- b** There are 3 jars with 4 pencils in each jar.  
How many pencils altogether?

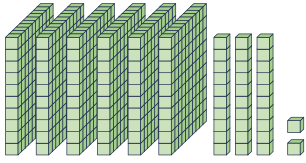


+  +  =

groups of  =

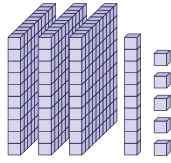
1 Write the numbers shown by the blocks.

a



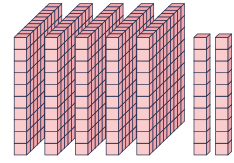
hundreds	tens	ones

b



hundreds	tens	ones

c



hundreds	tens	ones

2 Colour the bubble to show the place value name of the 5 in each number.

a 365  hundreds  tens  ones

b 536  hundreds  tens  ones

c 653  hundreds  tens  ones

3 Write the numbers in order from **smallest** to **largest**.

615    560    650    605    500

--	--	--	--	--

4 Write the digital times to match the clocks.

a


 : 

b

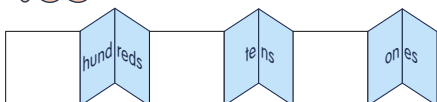

 : 

c

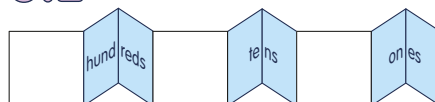

 : 

5 Expand each number, then write it in expanded notation.

a 465


 +  + 

b 612


 +  +

### Regular revision

Every 4–5 weeks, your students complete revision activities based on the preceding topics. This regular revision is great for consolidating learning and identifying each student's strengths and weaknesses.

6 Write the numbers in expanded notation.

a  $599 =$

b  $708 =$

c  $650 =$

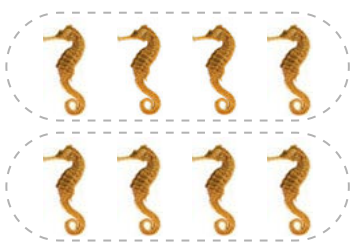
d  $455 =$

e  $314 =$

f  $625 =$

7 Complete the number sentences to match the equal groups.

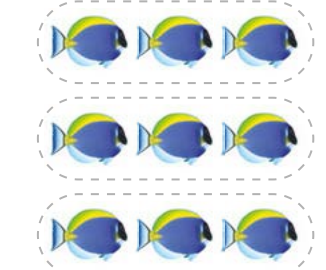
a



+  =

groups of  =


b



+  +  =

groups of  =

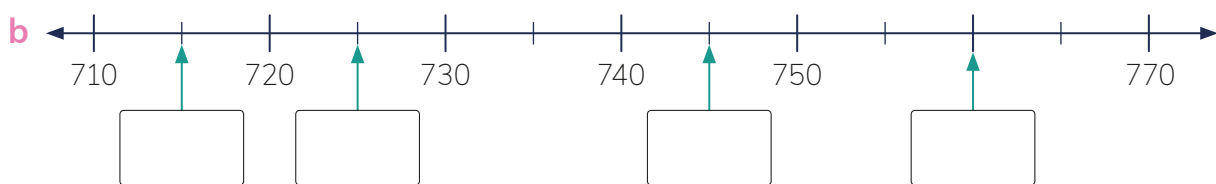
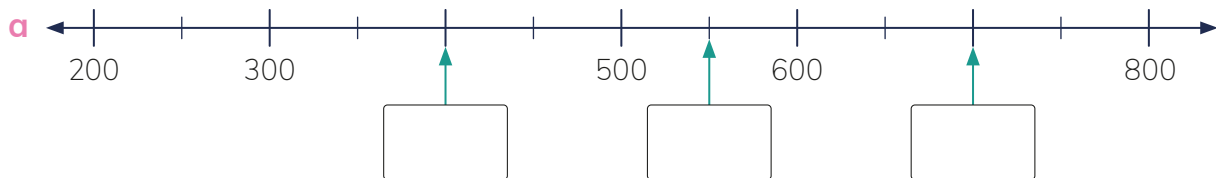
c



+  +  =

groups of  =

8 Write the missing numbers.



9 An ice cream sundae costs \$7. Colour the coins I need to buy one.



# Showtime

## Spend up at the show!

Congratulations, you have won two free passes to the show!

You and a friend have a total of \$100 to make it a fun-filled day by buying show bags, ride tickets, food and drinks.

Your task is to choose how best to spend your money.



### ★ Food and Drinks Menu ★

Dagwood dog.....\$5  
Hamburger.....\$10  
Cup of hot chips...\$5  
Cheese toastie.....\$3

Bag of fairy floss.....\$5  
Ice cream cone.....\$4  
Watermelon slice....\$2

Fresh orange juice....\$4  
Bottle of water.....\$3  
Cup of lemonade.....\$5

## Show bags

### Rides

◉ Dodgem cars \$10

Ferris wheel \$10

◉ Carousel \$6

Giant claw \$10

Teacup ride \$5 ◉

Super slide (for 3 slides) \$10



Munchies show bag



Princess show bag



Rockstar show bag



Monster trucks show bag

# Final budget



Record the prices of the show bags, ride tickets, food and drinks you and a friend would like to buy. Calculate the totals.

Show bags	
Total	\$

**Bring maths to life**  
 Designed to be conducted over a week, every investigation is packed with opportunities for your students to apply their maths skills to unfamiliar, extended problems.

Rides	
	\$
	\$
	\$
	\$
	\$
Total	\$

Food and drinks	

**Develop critical thinking skills**  
 Critical thinking is an integral part of every investigation. At Maths Trek Online, you'll find critical thinking lessons, cognitive verb definitions, examples and hints – all designed to help your students craft well-reasoned responses when sharing and discussing results.

Budget total: \$  + \$  + \$  = \$



## Making an organised list

## Work together

## Problem

Connie has three round stones labelled 1, 2 and 3. She puts them in a line on the ground to make a three-digit number.

List all the different three-digit numbers Connie can make with the stones.



- a What is the problem asking us to do?

List all the different ...

- two-digit numbers Connie can make  
 three-digit numbers Connie can make  
 four-digit numbers Connie can make

- b Let's talk about the problem. What do you know?

- c List the three-digit numbers that start with 1.



- d List the three-digit numbers that start with 2.



- e List the three-digit numbers that start with 3.

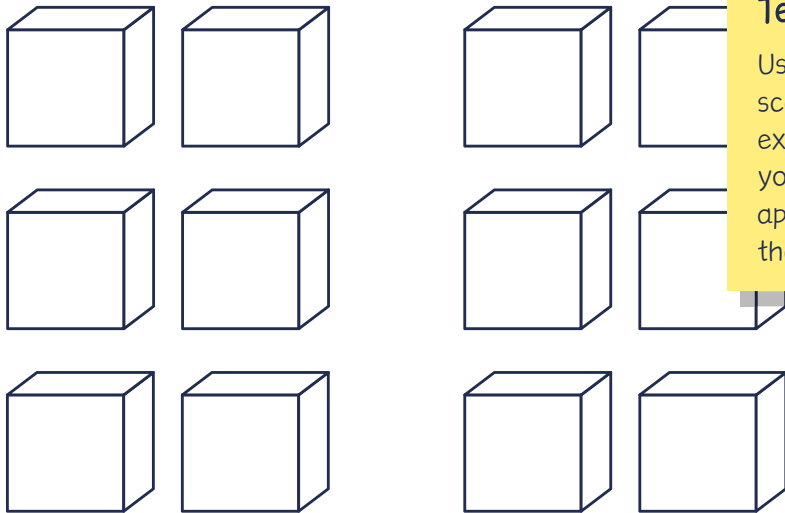
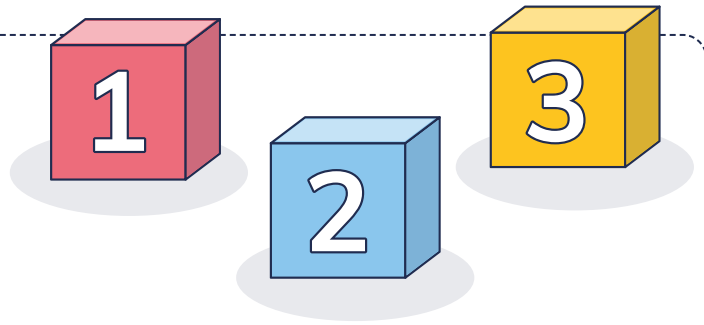




**Problem A**

Tommy has three wooden blocks labelled 1, 2 and 3.  
He puts two blocks side by side to make a two-digit number.

List all the different two-digit numbers Tommy can make with the blocks.



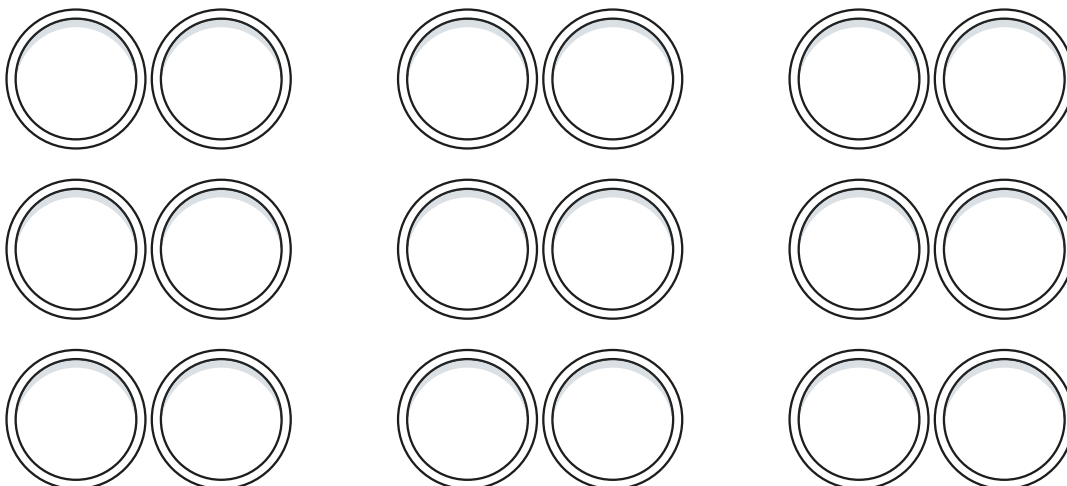
**Ten problem-solving strategies**

Use the online teaching resources and scaffolded *Work together* problem to explicitly teach each strategy. Then give your students independent practice at applying the strategy as they complete the *Your turn* problems.

**Problem B**

Andy has six counters.  
Two counters are labelled 4, two are labelled 5 and two are labelled 6.  
Andy puts two counters side by side to make a two-digit number.

List all the different two-digit numbers Andy can make with the counters.



## Problem A

Mick wrote a song about his favourite number.

I have a favourite number that you might like to find.

My number has two digits, and one of them is 9.

My number is not too big. It is less than 32.

My number is more than 20. Now it is up to you.

Use the clues in the song to work out Mick's favourite number.



Mick's favourite number is .

## Think critically

a How did you solve the problem? Tick the strategy you used.

- Finding the useful information     Guessing and checking  
 Acting out the problem

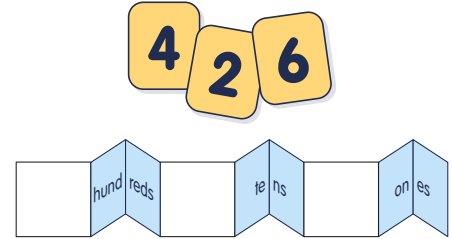
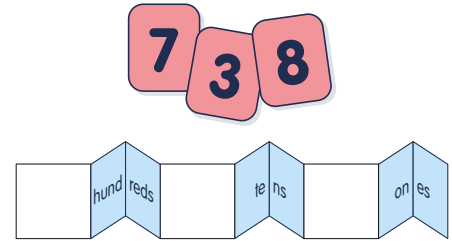
b What if Mick's favourite number was less than 52 and more than 10? List all the possible numbers. Tell a classmate about any patterns you find.

### Problem B

I made two secret numbers using number cards:

- both are three-digit numbers
- one is made using the red cards
- the other is made using the yellow cards
- if the red card and yellow card in the hundreds places are added, I get 9
- if the red card and yellow card in the tens places are added, I get 7.

What are the two secret numbers?



### Plenty of problem-solving practice

As the year progresses, your students practise choosing appropriate problem-solving strategies to solve a variety of unfamiliar problems.

The two secret numbers are  and .

### Share and discuss

Encourage your students to share their solutions and explain how they used their chosen strategies.

Then discuss the extra related problem with your students to further develop their critical thinking skills.

### Think critically

a How did you solve the problem? Tick the strategy you used.

- Finding the useful information     Guessing and checking  
 Acting out the problem

b What if the red card and the yellow card in the tens places added to 11 instead of 7? What would the two secret numbers be?

# The Maths Trek Program



Maths Trek is a whole-school numeracy program for Kindergarten to Year 6 that develops mathematical understanding, fluency, reasoning and problem-solving skills.

The Student Book together with the explicit teaching resources at Maths Trek Online build, develop and strengthen each student's ability to work mathematically.

Use the comprehensive online teaching resources to explicitly teach each concept before students apply their learning in the Student Book.

## In this book students will find ...

- shared *Work together* activities
- independent activities to develop and master maths skills
- concepts revisited throughout the year
- scaffolded problems to learn key problem-solving strategies
- practice problems to build confidence in applying the strategies
- real-world investigations where students apply maths skills to unfamiliar, extended mathematical problems to strengthen connections between concepts
- regular revision to consolidate learning

## At Maths Trek Online teachers will find ...

- explicit teaching slides and lesson guides for every topic and problem-solving lesson
- engaging visuals and hands-on activities in lessons
- differentiation tasks
- interactive teaching tools
- place value videos
- problem-solving strategy videos
- digital and printable resources to guide students through every investigation
- critical thinking lessons
- formative and summative assessments

Maths Trek Online includes the teaching resources for all year levels and complimentary access to the student site.

## Head to [www.fireflyeducation.com.au/mathstrek](http://www.fireflyeducation.com.au/mathstrek) to:

- view Maths Trek sample pages from other year levels
- download NSW Syllabus Match and Yearly Plan documents
- sign up for a free trial of the online teaching resources
- book a free professional learning workshop for your school.

