

PRIME

Mathematics

For Australian Schools

Year 2: Understanding and Comparing Volumes Lesson Walk-Through

(Click on sections below or scroll to view PDF)

PREPARE



Read Topic
Overview
& Lesson Notes



View Dem
Lesson



Collect
Resources

TEACH

NEW LEARNING



Teach Parallel Lesson
Let's Learn



15–20 minutes

GUIDED/INDEPENDENT LEARNING



Let's Do,
Let's Practice,
More Practice



40–45 minutes

FOLLOW UP



Assess Student
Answers



TOPIC ASSESSMENT



Paper and Pencil
Assessment

TOPIC & PERIODIC ASSESSMENT

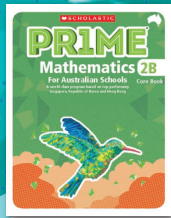


Digital Assessment



Teacher Uses
Data to Inform
Planning

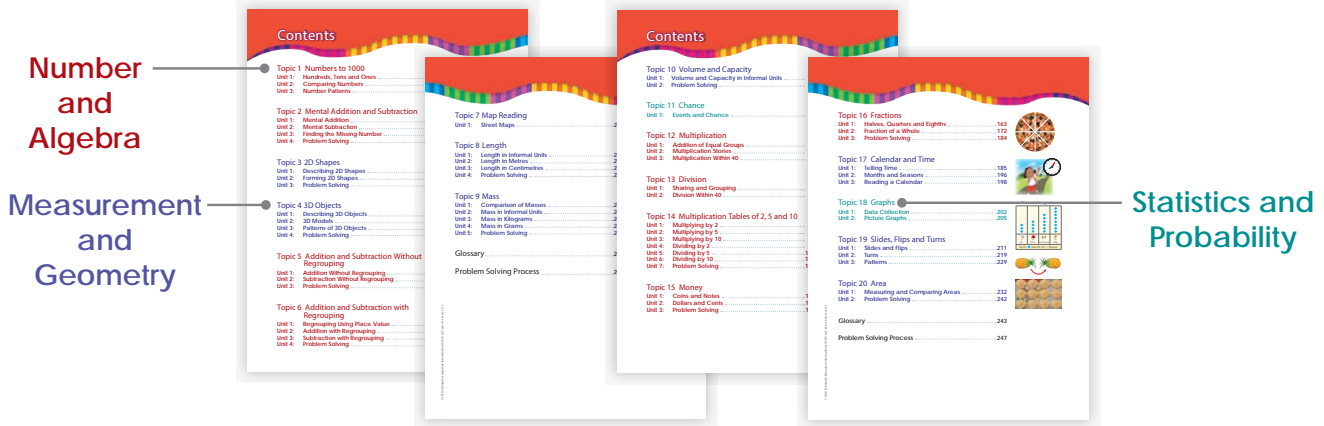




Introducing PRIME Pedagogy

Welcome to **Scholastic PRIME™ Mathematics** for Australian schools.

The program covers the three strands of mathematics in the Australian Curriculum: Mathematics. The three strands are **Number and Algebra**, **Measurement and Geometry**, and **Statistics and Probability**.



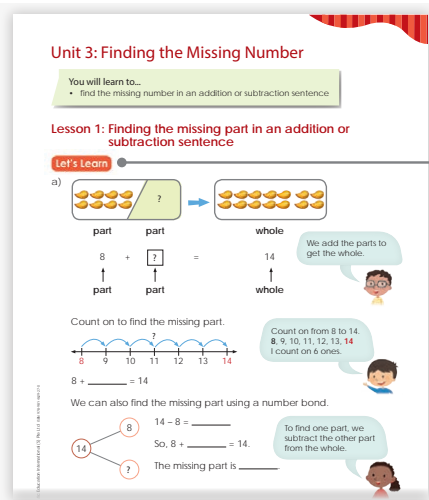
Scholastic PRIME™ Mathematics is a blended resource. Core curriculum lessons are printed in the Core Book and can be viewed online through the **PRIME™ Teaching Hub**. The Teaching Hub is a digital resource bank that also includes other resources that can be viewed on screen or downloaded.

Each topic in **Scholastic PRIME™ Mathematics** comprises three parts, **Let's Remember**, **Lessons** and **Assessments**.

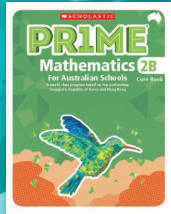
- 1 **Let's Remember** offers an opportunity for systematic recall and assessment of prior knowledge in preparation for new learning. It is available through the Teaching Hub.



- 2 Each topic contains several units. Within each unit is a series of daily **lessons**, with each lesson focusing on a concept or an aspect of it. Every lesson uses an explicit teaching model of I Do - We Do - You Do to introduce concepts and skills.



In **Let's Learn**, teachers use an I Do approach for completely new concepts or a We Do approach for scaffolded concepts. Concepts and skills are introduced and developed to mastery using the *concrete-pictorial-abstract* approach. This proven, research-based approach develops deep conceptual understanding.



Introducing PRIME Pedagogy

(continued...)

Let's Do provides opportunities that could be used as We Do activities for guided learning or You Do activities for informal formative assessment. Systematic variation of tasks reinforces students' understanding and enables teachers to check learning and identify remediation needs.

Think About It develops metacognitive skills by providing opportunities for mathematical communication, reasoning and justification. It is available through the Teaching Hub.

Let's Practise provides You Do activities to reinforce understanding of the concepts and skills taught and to demonstrate mastery. **More Practice** may be downloaded from the Teaching Hub.

Each topic ends with a **Problem Solving** unit which contains routine and non-routine word problems. A 4-step process is used to guide students to systematically solve problems and to apply appropriate problem-solving strategies.

Word problems provide a meaningful context for students to apply mathematical knowledge. The focus is on both the strategies and the process of problem solving.

Create Your Own develops higher-order thinking skills and metacognitive skills. It is available through the Teaching Hub.

Mind Stretcher allows students to apply knowledge gained to non-routine problem situations to develop higher-order thinking skills.

- 3 Assessments in PRIME™** are available for every topic and provide multiple opportunities for summative assessment. Every task in each assessment is aligned to a Content Description of the Australian Curriculum: Mathematics. The assessments are available in two formats:
- **PRIME™ Digital Assessments (online)** is a student's resource that provides comprehensive reports of individual student and class performance to the Australian Curriculum.
 - **PRIME™ Assessments (paper and pencil)** may be downloaded from the Teaching Hub.

The Topic Overview is found under the lightbulb icon in the HUB menu bar.

It lists all objectives for each lesson, materials and resources required and any new vocabulary introduced in the topic.

Topic 10: Volume and Capacity

Strand: Measurement and Geometry

Topic Overview

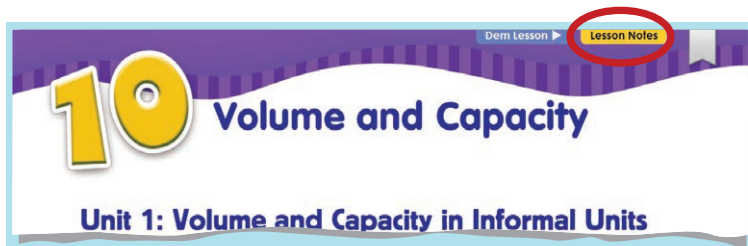
*Hub resources refer to pages found only in the Teaching Hub.

Unit	Objectives	Materials	Resources*	Vocabulary
Let's Remember	<ul style="list-style-type: none"> To compare the capacities of two or more containers visually To measure the capacity of a container using informal units To measure the capacities of containers using informal units, and compare and order them 		<ul style="list-style-type: none"> Hub pp. 6A–6B 	
Unit 1: Volume and Capacity in Informal Units				
Lesson 1: Understanding and comparing volumes	<ul style="list-style-type: none"> To understand the concept of volume To compare volumes of liquid in two or more containers visually 	<ul style="list-style-type: none"> 2 identical jugs 2 identical measuring cylinders Drinking glass Dyed water Large clear basin 	<ul style="list-style-type: none"> CB pp. 7–9 Hub pp. 9A–9B 	<ul style="list-style-type: none"> volume
Lesson 2: Measuring and comparing volumes in informal units	<ul style="list-style-type: none"> To measure and compare the volumes of liquid in two or more containers using informal units To arrange containers in order according to the volumes of liquid they hold 		<ul style="list-style-type: none"> CB pp. 10–13 Hub pp. 13A–13B 	
Lesson 3: Measuring and comparing capacities in informal units	<ul style="list-style-type: none"> To measure the capacities of containers using informal units, and compare and order them 		<ul style="list-style-type: none"> CB pp. 14–17 Hub pp. 17A–17B 	
Unit 2: Problem Solving				
Lesson 1: Mind stretcher	<ul style="list-style-type: none"> To solve a non-routine word problem involving capacity using the strategy of acting it out 		<ul style="list-style-type: none"> CB pp. 18–19 	
Lesson 1A: Mind stretcher	<ul style="list-style-type: none"> To solve a non-routine word problem involving capacity using the strategy of acting it out 		<ul style="list-style-type: none"> Hub p. 19A 	
Assessments — Accessible from Hub p. 19A				

The suggested duration for each lesson is 60 minutes.

PREPARE

FOLLOW UP



A Lesson Note link is found at the top of each new lesson page in the HUB.

The Lesson Notes displayed will correspond to the Core Book page displayed onscreen.

The Concrete–Pictorial–Abstract process is clearly outlined in an easy-to-follow lesson plan for beginning teachers, or a guide for more experienced teachers.

Concrete

(a)
Concrete

Place two identical jugs on a table next to each other. Label them Jug A and Jug B.
Say: *These are two identical jugs.*
Fill Jug A with dyed water up to the brim. Fill Jug B with dyed water up to about half its height.
Ask: *Which jug contains more liquid? (Jug A)*
Say: *Since the jugs are identical, we can look at the height of the water level to help us see which jug contains more liquid. We can see that the water level of the liquid in Jug A is higher than the water level of the liquid in Jug B. So, we say that Jug A contains more liquid than Jug B. We can also say that Jug A contains a greater volume of liquid than Jug B.*
Similarly, lead students to conclude that since Jug B contains less liquid than Jug A, we say that Jug B contains a smaller volume of liquid than Jug A.

Pictorial

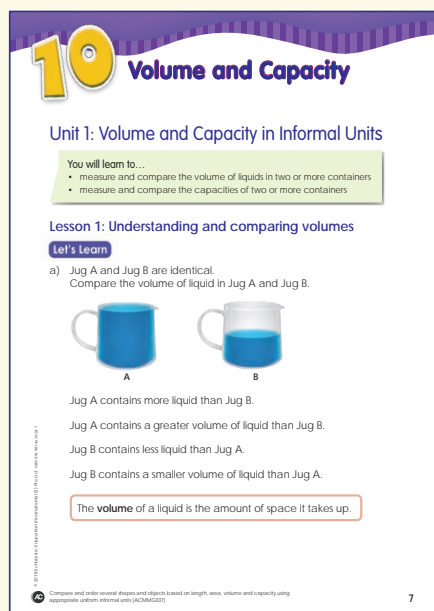
Pictorial

Refer students to the picture of the jugs shown on CB p. 7. Relate what is shown on the page to the activity that was just conducted.

Abstract

Abstract

Write: volume
Say: *The volume of a liquid is the amount of space it takes up.*
Have students observe that since the volume of liquid in Jug A is greater than the volume of liquid in Jug B, the liquid in Jug A takes up more space than the liquid in Jug B.



(continued...)

(b)

Concrete Pictorial

Place two identical measuring cylinders on a table next to each other. Label them Container M and Container N. Fill both measuring cylinders with dyed water up to the same level.

Say: Container M and Container N are identical. They have the same shape and size. Let us compare the heights of the water level in these containers.

Guide students to read the markings on the measuring cylinder to find the height of the water level.

Ask: Are the heights of the water level the same? (Yes) Point out to students that since the two containers are identical and the heights of the water level of the liquid in the containers are the same, the liquid in each container takes up the same amount of space. So, we say that the containers contain the same volume of liquid. Have students relate this to the first picture on CB p. 8.

Now, place a drinking glass and a basin on the table. Have students observe these empty containers.

Ask: Are the glass and the basin of the same shape and size? (No)

Ask: Is the volume of water in these two containers the same? (Yes)

Say: Let us now pour the water from these containers into the glass and the basin.

Pour all the water from Container M into the glass and pour all the water from Container N into the basin.

Say: Observe the heights of the water level of the liquid in the glass and in the basin.

Ask: Which container has a higher water level? (Answer varies. E.g. Glass) Can we say that there is more water in the glass than in the basin? (No) Why? (As the glass and the basin are not identical, we cannot compare the volume of the water in them by comparing the heights of the water level in the two containers.)

Point out to students that it is hard to determine correctly which container contains a greater or smaller volume of water just by comparing the heights of the water level in the two containers, especially if the containers are of different shapes and sizes. Have students relate this to the second picture on the page.

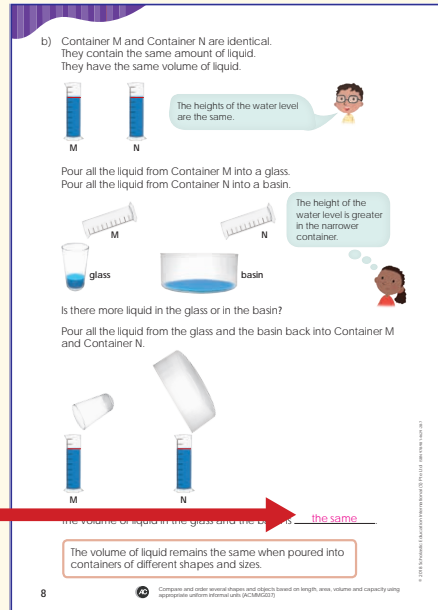
Say: Now, we pour the water back into Container M and Container N.

Pour all the water from the glass and basin back into their respective containers.

Ask: What do you notice? (The heights of the water level in Container M and Container N are the same.) What can we say about the volume of the water in Container M and Container N? (They have the same volume.) What can we say about the volume of the water that was in the glass and the basin? (They have the same volume too.)

Write: The volume of liquid in the glass and the basin is the same.

Have students relate this to the third picture on the page.



Correct answers shown

Correct responses shown

Correct answers are shown in the lesson notes for teachers' reference.

(continued...)

Let's Do

Task 1 provides practice in comparing the volumes of liquid in two containers visually. Students are expected to visually compare the volumes of water in two identical bottles and circle the bottle with the smaller volume of water.

Task 2 provides practice in comparing the volumes of liquid in two containers visually. Students are expected to compare the volumes of water in two different containers. They have to recognise that the water in Container X and Container Y are poured into two different basins. The heights of the water level in the two basins of different base areas are the same, and students have to identify the container that holds the greater volume of water.

Let's Practise

Task 1 provides practice in comparing the volumes of liquid in two containers visually. Students are expected to visually compare the volumes of water in two different containers and identify the container with the greater volume of water.

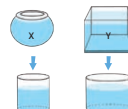
Task 2 provides practice in comparing the volumes of liquid in three containers visually. Students are expected to recognise that the water in the three vases are poured into basins of different base areas. They have to compare the heights of the water level in the basins to identify the vase that holds the smallest volume of water.

Let's Do

1. Circle the bottle that contains a smaller volume of water.



2. Which container holds a greater volume of water?



Container Y holds a greater volume of water.

Let's Practise

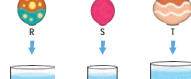
Fill in the blanks.

1.



Container A has a greater volume of water.

2.



Vase S contains the least volume of water.

Compare and order several shapes and objects based on length, area, volume and capacity using appropriate informal units (ACMAB023)

9

Think About It

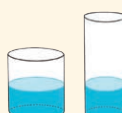
Have students get into groups to discuss the question presented. Ask a student from each group to present their answers before proceeding with the questions below.

Ask: Are the heights of the water level in both containers the same? (Yes) Are the two containers identical? (No) What is the difference between the two containers? (The container on the left has a larger base than the container on the right.) Does the water in the wider container take up more or less space than the water in the taller container? (More) Do the two containers contain the same volume of water? (No)

Conclude that Charlotte is wrong. Lead students to see that even though the heights of the water level in the containers are the same, the containers are not identical. Hence, the volume of water in the two containers are not the same. Given the same height of water level in the containers, the container with the larger base contains a greater volume of water than that in the other container. Demonstrate this to struggling students by filling a large clear basin and a measuring cylinder with dyed water till they have the same water level. Then, pour the water in both containers into an identical drinking glass each.

Think About It

Which container has a greater volume of water?



Both containers have the same level of water. So, they contain the same volume of water.



Is Charlotte correct? Explain why.

No, Charlotte is not correct. The container on the left has a larger base than the container on the right. So, the container on the left has a greater volume of water than the container on the right.

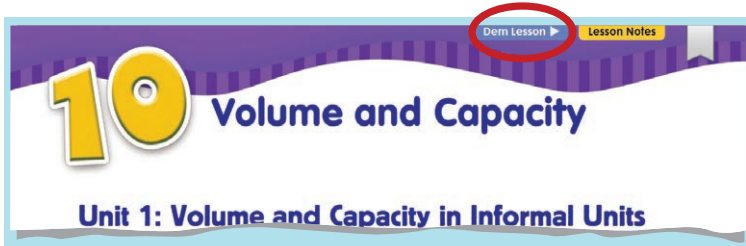
Compare and order several shapes and objects based on length, area, volume and capacity using appropriate informal units (ACMAB023)

9A

More Practice

Go to More Practice on Hub p. 9B (TG p. 16).

Information about More Practice is listed at the end of the Lesson Notes.



A video featuring a parallel demonstration lesson is accessed via a link at the top of each new lesson page on the HUB.

The Dem Lessons may be used as preparation for teachers, or shown directly to students as part of an I DO—WE DO lesson.

The video may be used to help differentiate learning between students: the teacher may demonstrate a more challenging example to extend some students, while others watch the video demonstration.

10 Volume and Capacity
Unit 1: Volume and Capacity in Informal Units

The volume of a liquid is the amount of space it takes up.

Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (ACM/MG037)

8 of 476

PREPARE

TEACH

Each new lesson in the HUB has:

- A Dem Lesson
- Lesson Notes
- Let's Learn
- Let's Do
- Let's Practise
- More Practice

The Content Description being taught from the Australian Curriculum: Mathematics is identified for each lesson.

10 Volume and Capacity

Unit 1: Volume and Capacity in Informal Units

You will learn to...

- measure and compare the volume of liquids in two or more containers
- measure and compare the capacities of two or more containers

Lesson 1: Understanding and comparing volumes

Let's Learn

a) Jug A and Jug B are identical.
Compare the volume of liquid in Jug A and Jug B.

A **B**

Jug A contains more liquid than Jug B.
Jug A contains a greater volume of liquid than Jug B.
Jug B contains less liquid than Jug A.
Jug B contains a smaller volume of liquid than Jug A.

The **volume** of a liquid is the amount of space it takes up.

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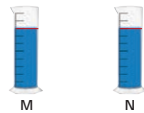
Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (ACM/MG2-7)

7


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Lesson Notes


b) Container M and Container N are identical. They contain the same amount of liquid. They have the same volume of liquid.




The heights of the water level are the same.



Pour all the liquid from Container M into a glass. Pour all the liquid from Container N into a basin.





glass



basin

Is there more liquid in the glass or in the basin?

Pour all the liquid from the glass and the basin back into Container M and Container N.

The volume of liquid in the glass and the basin is _____.

The volume of liquid remains the same when poured into containers of different shapes and sizes.

8
© Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (ACMMG037)

Thought bubbles guide mathematical thinking

This page demonstrates how thought bubbles throughout lessons guide metacognition: awareness and understanding of mathematical thought processes.

☰
✏️
📎
🗑️
💡
↶
?
🔌


Lesson Notes

Let's Do


←

Let's Do

1. Circle the bottle that contains a smaller volume of water.




A




B

2. Which container holds a greater volume of water?




X

↓




A



Y

↓



B

Container _____ holds a greater volume of water.


Let's Practise

←


Let's Practise

Fill in the blanks.

1.




A



B


Container _____ has a greater volume of water.

2.




R

↓




A




S

↓




B



T

↓



C

Vase _____ contains the smallest volume of water.

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Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (ACMMG037)

9

In all lessons, Let's Practice allows students to become confident with using Concrete–Pictorial–Abstract links before tackling abstract questions with little or no Concrete–Pictorial support.

Think About It

Which container has a greater volume of water?

Both containers have the same level of water. So, they contain the same volume of water.

Charlotte

Is Charlotte correct? Explain why.

9A
Print Supplementary Section

Think About It Problem Solving

Think About It may be printed from the HUB.

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Think About It and Create Your Own problems do not appear in Student Books.

Instead they can be viewed on or printed from the HUB. Detailed lesson notes provide teaching tips and answers.

These problems challenge students to use a variety of problem solving techniques to explore concepts taught in the lesson.

More Practice



Lesson Notes

Name: _____
Date: _____

10

Unit 1

Lesson 1: Understanding and comparing volumes

More Practice

1. Circle the bottle that contains a greater volume of water.

2. Fill in the blanks.

P

Q

R

a) Jug _____ has a greater volume of water than Jug R.

b) Jug _____ contains the least volume of water.

c) Jug _____ contains the greatest volume of water.

d) Arrange the three jugs in order.
Begin with the jug that has the least volume of water.

Jug _____, Jug _____, Jug _____
(least)

9B

Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (ACM4MG03/7)

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Print Supplementary Section




More Practice
may be printed
from the HUB.

The same strategies and concepts students learn and practise in the Student Book are used in More Practice.

More Practice further consolidates deep learning. This material is suitable to use for homework.

The answers for every student page in the HUB may be displayed onscreen.

The answers are quickly toggled on and off via the  icon in the side menu.

Lesson Notes

Name: _____ Date: _____

10 Unit 1 Lesson 1: Understanding and comparing volumes

More Practice

1. Circle the bottle that contains a greater volume of water.

2. Fill in the blanks.

a) Jug P has a greater volume of water than Jug R.

b) Jug Q contains the least volume of water.

c) Jug P contains the greatest volume of water.

d) Arrange the three jugs in order.
Begin with the jug that has the least volume of water.

Jug Q (least), Jug R, Jug P

9B

Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (ACMNA037)

Print Supplementary Section

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Answers may be revealed gradually by clicking any of the green highlighted boxes, or all at once by clicking the page number.

From the student pages in the HUB, paper and pencil assessment for the entire topic may be downloaded via the icon in the side-bar.

10 Volume and Capacity

Unit 1: Volume and Capacity in Informal Units

You will learn to...

- measure and compare the volume of liquids in two or more containers
- measure and compare the capacities of two or more containers

Lesson 1: Understanding and comparing volumes

Let's Learn

a) Jug A and Jug B are identical.
Compare the volume of liquid in Jug A and Jug B.

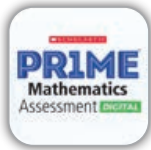
Jug B contains less liquid than Jug A.

Jug B contains a smaller volume of liquid than Jug A.

The **volume** of a liquid is the amount of space it takes up.

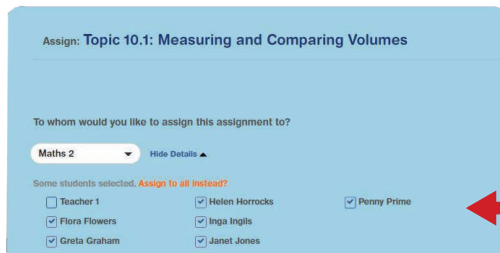
2B Topic 10 Assessment: Measuring and Comparing Volumes

2B Topic 10 Assessment: Measuring and Comparing Volumes



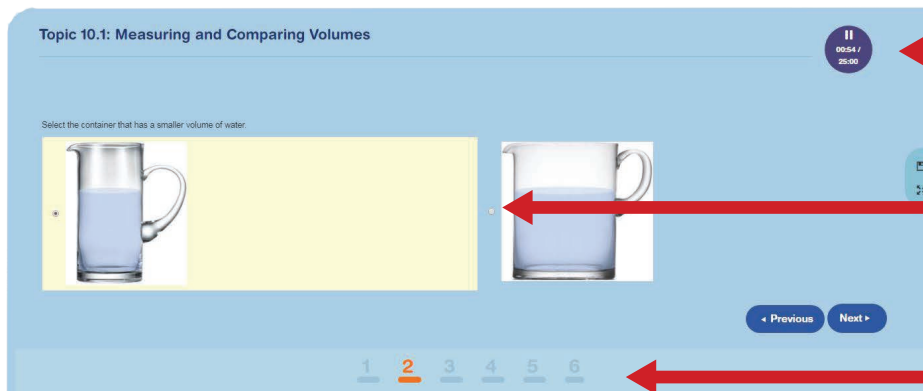
Digital Assessment is accessible via Scholastic Learning Zone.

1. Teacher assigns assessment tasks to students.



Select individual students or whole class

2. Students complete assessment online.

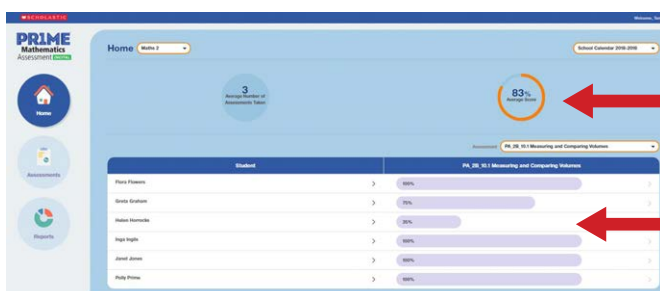


Timer

Responses use:
✓ keyboard entries
✓ drag and drop
✓ dropdown menus
✓ radio buttons

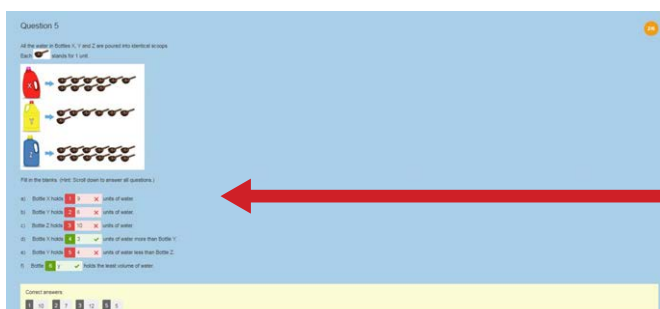
Progress bar

3. Teacher views class results or specific errors made by students online.

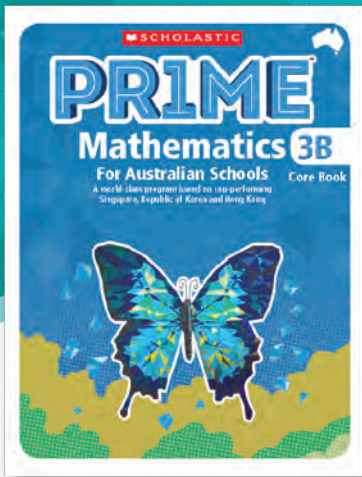


Class results

Click to view individual student results



View errors made by each student.



Year 3: Outcomes of a Chance Experiment Lesson Walk-Through

(Click on sections below or scroll to view PDF)

PREPARE



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& Lesson Notes**



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Lesson**



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NEW LEARNING



**Teach Parallel Lesson
Let's Learn**
15–20 minutes



GUIDED/INDEPENDENT LEARNING

**Let's Do,
Let's Practice,
More Practice**
40–45 minutes

FOLLOW UP



**Assess Student
Answers**

TOPIC ASSESSMENT



**Paper and Pencil
Assessment**

TOPIC & PERIODIC ASSESSMENT

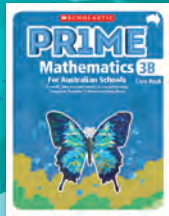


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**Teacher Uses
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The program covers the three strands of mathematics in the Australian Curriculum: Mathematics. The three strands are **Number and Algebra**, **Measurement and Geometry**, and **Statistics and Probability**.

	Contents	Contents	Contents
Number and Algebra	<p>Topic 1: Numbers to 10 000</p> <p>Unit 1: Numbers to 10 000</p> <p>Unit 2: Addition and Subtraction within 1000</p> <p>Unit 3: Multiplication and Division within 1000</p> <p>Unit 4: Fractions and Decimals</p> <p>Topic 2: Addition within 1000</p> <p>Unit 1: Addition within 1000</p> <p>Unit 2: Subtraction within 1000</p> <p>Unit 3: Multiplication within 1000</p> <p>Unit 4: Division within 1000</p> <p>Topic 3: Subtraction within 1000</p> <p>Unit 1: Subtraction within 1000</p> <p>Unit 2: Multiplication within 1000</p> <p>Unit 3: Division within 1000</p> <p>Topic 4: Length</p> <p>Unit 1: Length</p> <p>Unit 2: Area</p> <p>Unit 3: Volume</p> <p>Topic 5: Mass</p> <p>Unit 1: Mass</p> <p>Unit 2: Temperature</p> <p>Unit 3: Time</p> <p>Topic 6: Multiplication Tables of 2, 3, 5 and 10</p> <p>Unit 1: Multiplication Tables of 2, 3, 5 and 10</p> <p>Unit 2: Multiplication Tables of 2, 3, 5 and 10</p> <p>Unit 3: Multiplication Tables of 2, 3, 5 and 10</p>	<p>Topic 7: Circles</p> <p>Unit 1: Circles</p> <p>Unit 2: Angles</p> <p>Unit 3: Area</p> <p>Topic 8: Angles</p> <p>Unit 1: Angles</p> <p>Unit 2: Area</p> <p>Unit 3: Volume</p> <p>Topic 9: Perpendicular and Parallel Lines</p> <p>Unit 1: Perpendicular and Parallel Lines</p> <p>Unit 2: Perpendicular and Parallel Lines</p> <p>Unit 3: Perpendicular and Parallel Lines</p> <p>Topic 10: Area</p> <p>Unit 1: Area</p> <p>Unit 2: Area</p> <p>Unit 3: Area</p> <p>Topic 11: Volume</p> <p>Unit 1: Volume</p> <p>Unit 2: Volume</p> <p>Unit 3: Volume</p> <p>Topic 12: 3D Objects</p> <p>Unit 1: 3D Objects</p> <p>Unit 2: 3D Objects</p> <p>Unit 3: 3D Objects</p>	<p>Topic 13: Addition and Subtraction within 1000</p> <p>Unit 1: Addition and Subtraction within 1000</p> <p>Unit 2: Addition and Subtraction within 1000</p> <p>Unit 3: Addition and Subtraction within 1000</p> <p>Topic 14: Multiplication and Division within 1000</p> <p>Unit 1: Multiplication and Division within 1000</p> <p>Unit 2: Multiplication and Division within 1000</p> <p>Unit 3: Multiplication and Division within 1000</p> <p>Topic 15: Circles</p> <p>Unit 1: Circles</p> <p>Unit 2: Angles</p> <p>Unit 3: Area</p> <p>Topic 16: Area</p> <p>Unit 1: Area</p> <p>Unit 2: Area</p> <p>Unit 3: Area</p> <p>Topic 17: Fractions</p> <p>Unit 1: Fractions</p> <p>Unit 2: Fractions</p> <p>Unit 3: Fractions</p> <p>Topic 18: Mass and Length</p> <p>Unit 1: Mass and Length</p> <p>Unit 2: Mass and Length</p> <p>Unit 3: Mass and Length</p> <p>Topic 19: Temperature and Time</p> <p>Unit 1: Temperature and Time</p> <p>Unit 2: Temperature and Time</p> <p>Unit 3: Temperature and Time</p> <p>Topic 20: Volume and Capacity</p> <p>Unit 1: Volume and Capacity</p> <p>Unit 2: Volume and Capacity</p> <p>Unit 3: Volume and Capacity</p> <p>Topic 21: Multiplication Tables of 2, 3, 5 and 10</p> <p>Unit 1: Multiplication Tables of 2, 3, 5 and 10</p> <p>Unit 2: Multiplication Tables of 2, 3, 5 and 10</p> <p>Unit 3: Multiplication Tables of 2, 3, 5 and 10</p> <p>Topic 22: 3D Objects</p> <p>Unit 1: 3D Objects</p> <p>Unit 2: 3D Objects</p> <p>Unit 3: 3D Objects</p>

Scholastic PRIME™ Mathematics is a blended resource. Core curriculum lessons are printed in the Core Book and can be viewed online through the **PRIME™ Teaching Hub**. The Teaching Hub is a digital resource bank that also includes other resources that can be viewed on screen or downloaded.

Each topic in **Scholastic PRIME™ Mathematics** comprises three parts, **Let's Remember**, **Lessons** and **Assessments**.

- Let's Remember** offers an opportunity for systematic recall and assessment of prior knowledge in preparation for new learning. It is available through the Teaching Hub.

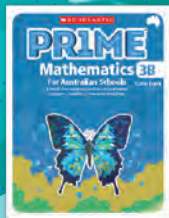
Each item is carefully crafted to help check for readiness to receive new knowledge.



- Each topic contains several units. Within each unit is a series of daily **lessons**, with each lesson focusing on a concept or an aspect of it. Every lesson uses an explicit teaching model of I Do - We Do - You Do to introduce concepts and skills.



In **Let's Learn**, teachers use an I Do approach for completely new concepts or a We Do approach for scaffolded concepts. Concepts and skills are introduced and developed to mastery using the **concrete-pictorial-abstract** approach. This proven, research-based approach develops deep conceptual understanding.



Introducing PRIME Pedagogy

(continued...)

Let's Do provides opportunities that could be used as We Do activities for guided learning or You Do activities for informal formative assessment. Systematic variation of tasks reinforces students' understanding and enables teachers to check learning and identify remediation needs.

Let's Practise provides You Do activities to reinforce understanding of the concepts and skills taught and to demonstrate mastery. **More Practice** may be downloaded from the Teaching Hub.

Name	Alfio	Dennis	Uma	Sam
Time taken	1 h 45 min	100 min	115 min	2 h 5 min

Think About It develops metacognitive skills by providing opportunities for mathematical communication, reasoning and justification. It is available through the Teaching Hub.

Each topic ends with a **Problem Solving** unit which contains routine and non-routine word problems. A 4-step process is used to guide students to systematically solve problems and to apply appropriate problem-solving strategies.

Word problems provide a meaningful context for students to apply mathematical knowledge. The focus is on both the strategies and the process of problem solving.

Create Your Own develops higher-order thinking skills and metacognitive skills. It is available through the Teaching Hub.

Mind Stretcher allows students to apply knowledge gained to non-routine problem situations to develop higher-order thinking skills.







- 3 Assessments in PRIME™** are available for every topic and provide multiple opportunities for summative assessment. Every task in each assessment is aligned to a Content Description of the Australian Curriculum: Mathematics. The assessments are available in two formats:
- PRIME™ Digital Assessments (online)** is a student's resource that provides comprehensive reports of individual student and class performance to the Australian Curriculum.
 - PRIME™ Assessments (paper and pencil)** may be downloaded from the Teaching Hub.

The Topic Overview is found under the lightbulb icon  in the HUB menu bar.

It lists all objectives for each lesson, materials and resources required and any new vocabulary introduced in the topic.

Topic 15: Chance

Strand: Statistics and Probability



 →




Topic Overview *Hub resources refer to pages found only in the Teaching Hub.

Unit	Objectives	Materials	Resources*	Vocabulary
Let's Remember	<ul style="list-style-type: none"> To identify events as 'certain' or 'uncertain' to happen To identify events as 'possible' or 'impossible' to happen To describe the possible outcomes of familiar activities and events as being 'likely' or 'unlikely' to happen 		<ul style="list-style-type: none"> Hub pp. 81A–81B 	
Unit 1: Chance Experiments				
Lesson 1: Outcomes of chance experiments	<ul style="list-style-type: none"> To list all the possible outcomes in a chance experiment or situation 	<ul style="list-style-type: none"> 1 copy of Recording Sheet 1 (CM15.1) per group 1 copy of Recording Sheet 2 (CM15.2) per group 1 paper bag per group 1 play coin per student 3 red counters and 3 green counters per group 5 sticker labels per group 	<ul style="list-style-type: none"> CB pp. 82–85 Hub p. 85A 	<ul style="list-style-type: none"> outcome random
Lesson 2: Conducting chance experiments	<ul style="list-style-type: none"> To conduct chance experiments and compare the expected and actual results 	<ul style="list-style-type: none"> 1 copy of Recording Sheet 3 (CM15.3) per group 1 play coin per group 	<ul style="list-style-type: none"> CB pp. 86–89 Hub p. 89A 	<ul style="list-style-type: none"> actual result expected result predict
Assessments — Accessible from Hub p. 89A				

The suggested duration for each lesson is 60 minutes.



A Lesson Note link is found at the top of each new lesson page in the HUB.

The Lesson Notes displayed will correspond to the student book page displayed onscreen.

Let's Remember does not appear in the Student Book (it is only viewed/printable via the HUB). It enables the teacher to quickly check that all students have the prerequisite knowledge and skills to undertake the work within the next Topic.

Let's Remember

15 Chance

Let's Remember

- Which event is certain to happen? Tick (✓) the correct box.
 - a) It will rain tomorrow. ☐
 - b) The day after Sunday is Monday. ☒
 - c) Summer will be colder than winter. ☐
- Which event is impossible to happen? Tick (✓) the correct box.
 - a) There are stars in the night sky. ☐
 - b) There is lightning when it rains. ☐
 - c) I pick a 10-cent coin from a bag of 20-cent coins. ☒
- Fill in the blanks with **certain**, **uncertain**, **possible** or **impossible**.
 - a) It is impossible that a bird flies to outerspace.
 - b) It is uncertain / possible that it will be sunny tomorrow.
 - c) It is certain that a 6-year old boy will turn 7 years old after his birthday.
 - d) It is possible that I get a number 3 when I roll a die numbered 1 to 6.

- Which event is likely to happen? Tick (✓) the correct box.
 - a) Your head feels hot when you have a fever. ☒
 - b) The boys will play soccer in the snow. ☐
 - c) A baby can solve a fraction word problem. ☐
- Which event is unlikely to happen? Tick (✓) the correct box.
 - a) I might catch a cold if someone sneezes on me. ☐
 - b) There will be thunder during a storm. ☐
 - c) I will travel to Antarctica with my family. ☒
- Fill in the blanks with **likely** or **unlikely**.
 - a) It is likely that a dog will bark at a stranger.
 - b) It is unlikely that the Prime Minister will come to my house.
 - c) It is unlikely that I will not sweat when I run a race.
 - d) It is likely that some children go on a holiday during the school break.

Topic 15 Chance

Topic Contents

Let's Remember

Unit 1: Chance Experiments

Note for Teachers

In this topic, students look at various types of chance situations and experiments, and learn to list all possible outcomes or combinations of outcomes that can take place. They also carry out simple experiments and observe variations in experiment results. This builds the foundation to the concept of theoretical and experimental probability which will be taught in later grades.

Students are also taught to make experiment predictions, and go on to see the differences between their predictions or expected results and the actual results from various experiment trials. It is important to emphasise to students that making predictions is an important part of any experiment and that it is quite normal if their predictions do not come true. They should understand and recognise that we can never be certain of what will happen unless the event is a certain one or an impossible one.

Let's Remember

Recall:

- Identifying events as 'certain' or 'uncertain' to happen (CB 2B Topic 11)
- Identifying events as 'possible' or 'impossible' to happen (CB 2B Topic 11)
- Identifying events as 'certain', 'uncertain', 'possible' or 'impossible' to happen (CB 2B Topic 11)
- Describe the possible outcomes of familiar activities and events as being 'likely' or 'unlikely' to happen (CB 2B Topic 11)
- Describe the possible outcomes of familiar activities and events as being 'likely' or 'unlikely' to happen (CB 2B Topic 11)
- Describe the possible outcomes of familiar activities and events as being 'likely' or 'unlikely' to happen (CB 2B Topic 11)

Location of previous learning is shown here in case back-teaching is necessary for some students.

(continued...)

(c)

Concrete

Have students continue to work in groups using the counters for this activity. Distribute 1 copy of *Recording Sheet 2 (CM15.2)* and 5 sticker labels to each group. Tell students to imagine that the 3 red counters are 3 different tee-shirts and that 2 of the green counters are 2 different pairs of pants. Ask students to write 'T1', 'T2' and 'T3' on three different sticker labels and paste them on the red counters to represent the 3 tee-shirts. Then, get them to write 'P1' and 'P2' on two different sticker labels and paste them on the green counters to represent the 2 pairs of pants.

Say: *You have three tee-shirts and two pairs of pants. Let us see how many combinations of outfits you can make with these tee-shirts and pants.*

Encourage students to use their counters to explore and match the different tee-shirts and pants, and get them to record their results in *Recording Sheet 2*. Get some groups to share their results when they are done.

Pictorial

Have students read the problem on CB p. 83. Relate this problem to the earlier activity.

Ask: *For each pair of pants, how many tee-shirts can Jake wear it with? (3) How many pairs of pants are there? (2) So, what is the total number of combinations of outfits Jake can have? (6)*

Abstract

Explain that in this situation, there are 6 possible outcomes that Jake can get if he is looking for a tee-shirt and pants combination.

c) Jake has 3 tee-shirts and 2 pairs of pants. How many possible combinations of outfits can Jake have?

The combinations of outfits that Jake can have are as shown:

tee-shirt 1 Pants 1	tee-shirt 2 Pants 1	tee-shirt 3 Pants 1
tee-shirt 1 Pants 2	tee-shirt 2 Pants 2	tee-shirt 3 Pants 2

Jake can have 6 combinations of outfits.

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Content Description for the Australian Curriculum related to this lesson.

4

Topic 15: Chance

4 Conduct chance experiments, identify and describe possible outcomes and recognise variation in results (ACMSP067)

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Content Description for the Australian Curriculum related to this lesson.


The Content Description being taught from the Australian Curriculum: Mathematics is identified for each lesson.

(continued...)

Let's Do

Fill in the blanks.

1. Mike rolls a die numbered from 1 to 6 once.



a) How many faces does the die have? 6

b) What are the possible outcomes? 1, 2, 3, 4, 5, 6

c) How many possible outcomes are there? 6

2. Lola wants to make fruit juice. She wants to use two types of fruit. She has apples, oranges and pears.

a) List the possible combinations of fruits Lola can use to make the fruit juice.

The order of the fruits does not matter.

apples and oranges oranges and pears

apples and pears

b) How many combinations of fruits can Lola use to make the fruit juice? 3

3. There are 5 blue marbles and 5 yellow marbles in a jar. Andy randomly picks 3 marbles from the jar. List all the possible outcomes that Andy can get.

Example: 1 blue marble and 2 yellow marbles


2 blue marbles and 1 yellow marble 3 yellow marbles

3 blue marbles

Let's Practise

Fill in the blanks.

1. Tim spins the spinner once.



What are the possible outcomes Tim can get? 1, 2, 3, 4

2. a) There are 4 red beads and 4 blue beads in a box. Ravi randomly picks 4 beads from the box. List all the possible outcomes that Ravi can get.

3 red beads and 1 blue bead 3 blue beads and 1 red bead

2 red beads and 2 blue beads 4 blue beads

4 red beads

b) How many possible outcomes are there? 5

3. This is the breakfast menu at Marigold Cafe.

Food	Drink
sandwich	fruit juice
cake	tea
pie	coffee
	hot chocolate

a) How many food items are on the menu? 3

b) How many types of drinks are on the menu? 4

c) Dan wants to order 1 food item and 1 drink. He does not want to eat a sandwich or have a fruit juice. List the possible combinations of food and drink Dan can have.

cake and tea pie and tea

cake and coffee pie and coffee

cake and hot chocolate pie and hot chocolate

Correct answers shown

Let's Do

Task 1 provides practice in listing all the possible outcomes in a chance experiment.

Task 2 provides practice in listing all the possible combinations in a chance situation. Check that students realise that the order of writing the fruits does not matter. For example, an apple-orange juice is the same as an orange-apple juice, and hence cannot be taken as 2 different fruit combinations.

Task 3 provides practice in listing all the possible outcomes in a chance experiment. Remind students what it means to pick randomly.

Let's Practise

Task 1 provides practice in listing all the possible outcomes in a chance experiment. Students are required to list all the possible outcomes by looking at the picture of the spinner provided.

Task 2 provides practice in listing all the possible outcomes in a chance experiment. Provide coloured beads or counters to help struggling students.

Task 3 provides practice in listing all the possible combinations in a chance situation. Tasks 3(a) and 3(b) require students to read and interpret the data given in the table. Task 3(c) requires students to eliminate the food and drink items that Dan does not want before finding the possible food and drink combinations that he can have.

Go to More Practice on Hub p. 85A (TG p. 9).

More Practice

Correct answers are shown in the lesson notes for teachers' reference. Information about More Practice is listed at the end of the Lesson Notes.



A video featuring a parallel demonstration lesson is accessed via a link at the top of each new lesson page on the HUB.

The Dem Lessons may be used as preparation for teachers, or shown directly to students as part of an I DO—WE DO lesson.

The video may be used to help differentiate learning between students: the teacher may demonstrate a more challenging example to extend some students, while others watch the video demonstration.

15 Chance
Unit 1: Chance Experiments

Outcomes of chance experiments

Sam thinks it's likely we'll pick one red and one blue bear.
 Alice expects we'll pick two blue bears.
 Tom predicts we'll pick two red bears.

red	blue
1	1
2	2

Ben says that any of them could be right as there is a chance that he will pick 1 out of these 3 outcomes:

82

147 of 585

Each new lesson in the HUB has:

- A Dem Lesson
- Lesson Notes
- Let's Learn
- Let's Do
- Let's Practise
- More Practice

The Content Description being taught from the Australian Curriculum: Mathematics is identified for each lesson.

15 Chance

Unit 1: Chance Experiments

You will learn to...

- list all the possible outcomes in a chance experiment or situation
- conduct chance experiments and compare the expected and actual results

Lesson 1: Outcomes of chance experiments

Let's Learn

a) Anna tosses a coin. She can get a head or a tail.

head tail

There are 2 possible results when you toss a coin.

The 2 possible results or **outcomes** of tossing a coin is a head or a tail.

b) There are 3 red balls and 3 green balls in a bag. Ben **randomly** picks 2 balls from the bag.

Luis says Ben is likely to pick 1 red ball and 1 green ball. Meg expects Ben to pick 2 red balls. Rosa predicts that Ben will pick 2 green balls.

When we pick randomly, we are picking without looking. It is equally likely to pick any ball.

Ben says that any of them could be right as there is a chance that he will pick 1 out of these 3 outcomes:

82

Conduct chance experiments, identify and describe possible outcomes and recognise variation in results (ACM07A01)

147 of 585

Demonstration Lesson and Lesson Notes

Let's Learn

Content Description for the Australian Curriculum related to this lesson.

c) Jake has 3 tee-shirts and 2 pairs of pants. How many possible combinations of outfits can Jake have?

tee-shirt 1 tee-shirt 2 tee-shirt 3

Pants 1 Pants 2

The combinations of outfits that Jake can have are as shown:

tee-shirt 1 Pants 1	tee-shirt 2 Pants 1	tee-shirt 3 Pants 1
tee-shirt 1 Pants 2	tee-shirt 2 Pants 2	tee-shirt 3 Pants 2

Jake can have _____ combinations of outfits.

83

148 of 585

Pictorial support provided here demonstrates all possible chance outcomes.

Pictorial support forms an important bridge between concrete and abstract thinking.

Let's Do

Fill in the blanks.

1. Mike rolls a die numbered from 1 to 6 once.

a) How many faces does the die have? _____

b) What are the possible outcomes? _____

c) How many possible outcomes are there? _____

2. Lola wants to make fruit juice. She wants to use two types of fruit. She has apples, oranges and pears.

a) List the possible combinations of fruits Lola can use to make the fruit juice.

Thought bubbles guide mathematical thinking

b) How many combinations of fruits can Lola use to make the fruit juice? _____

3. There are 5 blue marbles and 5 yellow marbles in a jar. Andy randomly picks 3 marbles from the jar. List all the possible outcomes that Andy can get.

Example: 1 blue marble and 2 yellow marbles

84

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This page demonstrates how thought bubbles throughout lessons guide metacognition: awareness and understanding of mathematical thought processes.

Let's Practise

Lesson Notes

Find the blanks.

- Tim spins the spinner once.
What are the possible outcomes Tim can get? _____



- There are 4 red beads and 4 blue beads in a box. Ravi randomly picks 4 beads from the box. List all the possible outcomes that Ravi can get.

 - How many possible outcomes are there? _____
- This is the breakfast menu at Marigold Cafe.

Food	Drink
sandwich	fruit juice
cake	tea
pie	coffee
	hot chocolate

 - How many food items are on the menu? _____
 - How many types of drinks are on the menu? _____
 - Dan wants to order 1 food item and 1 drink. He does not want to eat a sandwich or have a fruit juice. List the possible combinations of food and drink Dan can have.

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85

In all lessons, Let's Practise consolidates learning from each lesson.

More Practice


Lesson Notes

Name: _____ Date: _____


15 Lesson 1: Outcomes of chance experiments

More Practice

Fill in the blanks.

- Jacob spins the spinner once. What are the possible outcomes Jacob can get?
 
- There are 3 red cubes, 3 blue cubes and 3 green cubes in a box. Randall randomly picks 3 cubes from the box. List all the possible outcomes that Randall can get.

 - How many possible outcomes are there? _____
- 2 children can form a group to play a game. Look at the children below. List all the possible combinations of children in a group.



 Sue Chris Fred Don Cassey

85A

Print Supplementary Section

Fit to screen 151 of 585

More Practice
may be printed
from the HUB.

The same strategies and concepts students learn and practise in the Student Book are used in *More Practice*.

More Practice further consolidates deep learning. This material is suitable to use for homework.

The answers for every student page in the HUB may be displayed onscreen.

The answers are quickly toggled on and off via the on in the side menu.

The screenshot shows a digital worksheet titled 'Lesson 1: Outcomes of chance experiments'. The side menu on the left has a red arrow pointing to the 'Answers' icon (a green circle with a white 'A'). The worksheet content includes:

- 15** Unit 1 Lesson 1: Outcomes of chance experiments
- More Practice**
- Fill in the blanks.**
- 1.** Jacob spins the spinner once. What are the possible outcomes Jacob can get?
 1, 2 and 3
- 2. a)** There are 3 red cubes, 3 blue cubes and 3 green cubes in a box. Randall randomly picks 3 cubes from the box. List all the possible outcomes that Randall can get.

1 red, 1 blue, 1 green	1 blue, 2 red
1 red, 2 blue	1 blue, 2 green
1 red, 2 green	1 green, 2 blue
3 red	1 green, 2 red
3 blue	3 green
- b)** How many possible outcomes are there? 10
- 3.** 2 children can form a group to play a game. Look at the children below. List all the possible combinations of children in a group.

Sue and Chris	Chris and Don
Sue and Fred	Chris and Cassey
Sue and Don	Fred and Don
Sue and Cassey	Fred and Cassey
Chris and Fred	Don and Cassey

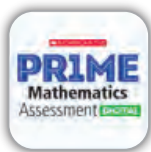
At the bottom of the screen, there is a navigation bar with arrows, a 'Fit to screen' dropdown, a magnifying glass icon, a page number '151 of 585', and more navigation arrows.

Answers may be revealed gradually by clicking any of the green highlighted boxes, or all at once by clicking the page number.

From the student pages in the HUB, paper and pencil assessment for the entire topic may be downloaded via the the side-bar.

The screenshot shows the Scholastic Teaching Hub interface. The main content area displays 'Lesson 1: Outcomes of chance experiments' with a 'More Practice' section. A sidebar on the left contains icons for 'Topic Overview', 'Scope and Sequence', and 'Assessments', with the 'Assessments' icon highlighted by a red circle. Below the main content, three sample assessment pages are shown, each with a red circle highlighting the 'Assessments' icon in the sidebar.

3B Topic 15 Assessment: Chance



Digital Assessment is accessible via Scholastic Learning Zone.

1. Teacher assigns assessment tasks to students.

Select individual students or whole class

2. Students complete assessment online.

Timer

Responses use:

- keyboard entries
- drag and drop
- dropdown menus
- radio buttons

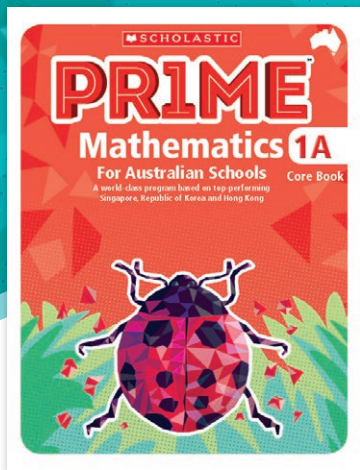
Progress bar

3. Teacher views class results or specific errors made by students online.

Class results

Click to view individual student results

View errors made by each student.



PRIME

Mathematics

For Australian Schools

Year 1: Subtraction within 20 Lesson Walk-Through

(Click on sections below or scroll to view PDF)

PREPARE



Read Topic Overview & Lesson Notes



View Dem Lesson



Collect Resources

TEACH

NEW LEARNING



Teach Parallel Lesson
Let's Learn



15–20 minutes

GUIDED/INDEPENDENT LEARNING



Let's Do,
Let's Practice,
More Practice



40–45 minutes

FOLLOW UP



Assess Student Answers



TOPIC ASSESSMENT



Paper and Pencil Assessment

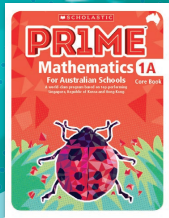
TOPIC & PERIODIC ASSESSMENT



Digital Assessment



Teacher Uses Data to Inform Planning



Introducing PRIME Pedagogy

Welcome to **Scholastic PRIME™ Mathematics** for Australian schools.

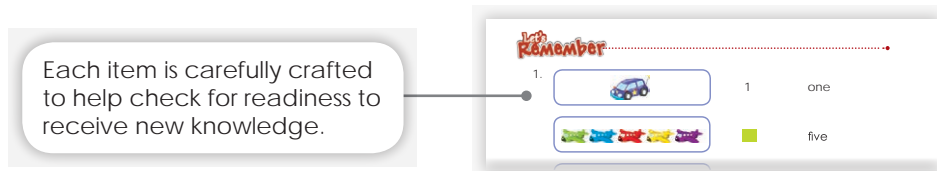
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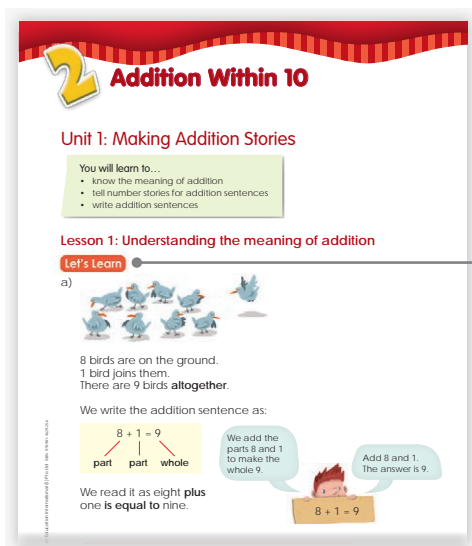
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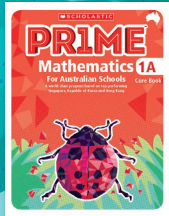
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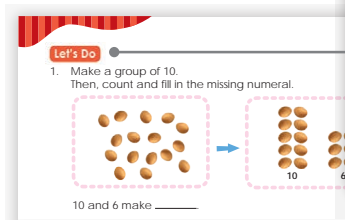


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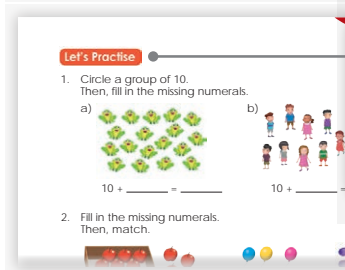


Introducing PRIME Pedagogy

(continued...)



Let's Do provides opportunities that could be used as We Do activities for guided learning or You Do activities for informal formative assessment. Systematic variation of tasks reinforces students' understanding and enables teachers to check learning and identify remediation needs.

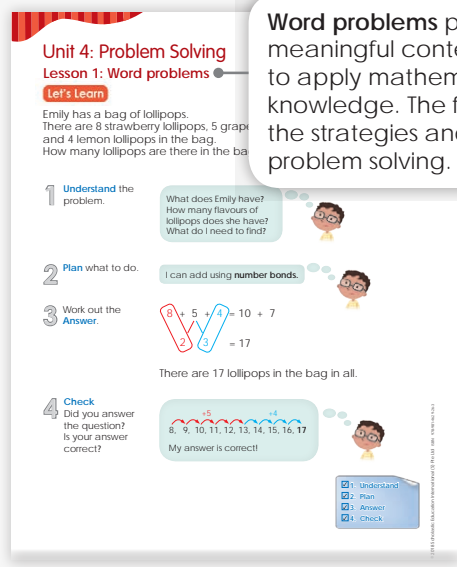


Let's Practise provides You Do activities to reinforce understanding of the concepts and skills taught and to demonstrate mastery. **More Practice** may be downloaded from the Teaching Hub.

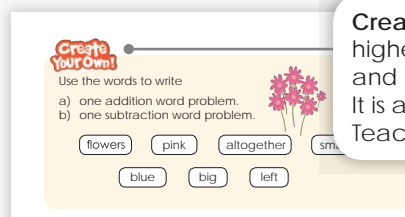


Think About It develops metacognitive skills by providing opportunities for mathematical communication, reasoning and justification. It is available through the Teaching Hub.

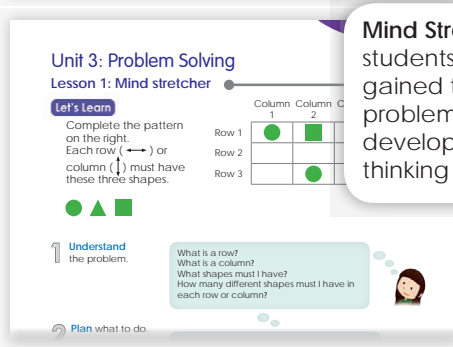
Each topic ends with a **Problem Solving** unit which contains routine and non-routine word problems. A 4-step process is used to guide students to systematically solve problems and to apply appropriate problem-solving strategies.



Word problems provide a meaningful context for students to apply mathematical knowledge. The focus is on both the strategies and the process of problem solving.



Create Your Own develops higher-order thinking skills and metacognitive skills. It is available through the Teaching Hub.



Mind Stretcher allows students to apply knowledge gained to non-routine problem situations to develop higher-order thinking skills.

3 Assessments in PRIME™ are available for every topic and provide multiple opportunities for summative assessment. Every task in each assessment is aligned to a Content Description of the Australian Curriculum: Mathematics. The assessments are available in two formats:

- **PRIME™ Digital Assessments (online)** is a student's resource that provides comprehensive reports of individual student and class performance to the Australian Curriculum.
- **PRIME™ Assessments (paper and pencil)** may be downloaded from the Teaching Hub.

The Topic Overview is found under the lightbulb icon in the HUB menu bar.

It lists all objectives for each lesson, materials and resources required and any new vocabulary introduced in the topic.

Topic 7: Addition and Subtraction Within 20

Strand: Number and Algebra

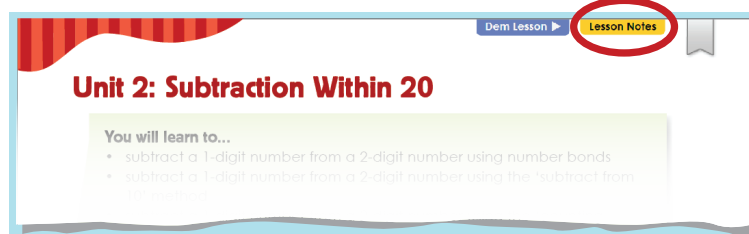
Topic Overview *Hub resources refer to pages found only in the Teaching Hub.

Unit	Objectives	Materials	Resources*	Vocabulary
Let's Remember	<ul style="list-style-type: none"> To write an addition sentence for a given picture To work out an addition fact within 10 by recalling the related number To use the 'counting on' method using a number line to add two numbers within 10, one of which is 1, 2 or 3 To write a subtraction sentence for a given picture To work out a subtraction fact within 10 by recalling the related number bond To use the 'counting backwards' method using a number line to subtract 1, 2 or 3 from a number within 10 To count within 20 by making a 10 first To count on and backwards within 20 		<ul style="list-style-type: none"> Hub pp. 114C–114D 	
Unit 1: Addition Within 20				
Lesson 1: Adding two 1-digit numbers by making 10	<ul style="list-style-type: none"> To add two 1-digit numbers with regrouping using the 'make 10' method 	<ul style="list-style-type: none"> Magnetic counters (9 red and 5 blue) 	<ul style="list-style-type: none"> CB pp. 115–117 Hub pp. 117A–117B 	
Lesson 2: Adding a 1-digit and a 2-digit number using number bonds	<ul style="list-style-type: none"> To add a 1-digit number and a 2-digit number using number bonds 	<ul style="list-style-type: none"> 1 bundle of 10 pens and 8 loose pens per group 	<ul style="list-style-type: none"> CB pp. 118–120 Hub pp. 120A–120B 	
Lesson 3: Adding two numbers by 'counting on'	<ul style="list-style-type: none"> To add two numbers, one of which is 1, 2 or 3, using the 'counting on' method 		<ul style="list-style-type: none"> CB pp. 121–122 Hub p. 122A 	
Lesson 4: Doubles facts to 20	<ul style="list-style-type: none"> To identify a doubles fact within 20 To add two 1-digit numbers which are the same 	<ul style="list-style-type: none"> 12 magnetic counters 	<ul style="list-style-type: none"> CB pp. 123–124 Hub p. 124A 	<ul style="list-style-type: none"> double
Lesson 5: Adding two numbers using doubles facts	<ul style="list-style-type: none"> To add two 1-digit numbers using the 'doubles plus 1' method 	<ul style="list-style-type: none"> 15 connecting cubes per group 	<ul style="list-style-type: none"> CB p. 125 Hub pp. 125A–125B 	<ul style="list-style-type: none"> near double

Unit	Objectives	Materials	Resources*	Vocabulary
Unit 2: Subtraction Within 20				
Lesson 1: Subtracting a 1-digit number from a 2-digit number using number bonds	<ul style="list-style-type: none"> To subtract a 1-digit number from a 2-digit number without regrouping using number bonds 	<ul style="list-style-type: none"> 1 bundle of 10 pens and 5 loose pens per group 	<ul style="list-style-type: none"> CB pp. 126–128 Hub pp. 128A–128B 	
Lesson 2: Subtracting a 1-digit number from a 2-digit number using the 'subtract from 10' method	<ul style="list-style-type: none"> To subtract a 1-digit number from a 2-digit number with regrouping using the 'subtract from 10' method 	<ul style="list-style-type: none"> 10 yellow and 4 blue connecting cubes per group 	<ul style="list-style-type: none"> CB pp. 129–131 Hub pp. 131A–131B 	
Lesson 3: Subtracting a 1-digit number from a 2-digit number by 'counting backwards'	<ul style="list-style-type: none"> To subtract 1, 2 or 3 from a number using the 'counting backwards' method 		<ul style="list-style-type: none"> CB pp. 132–133 Hub p. 133A 	
Lesson 4: Add or subtract	<ul style="list-style-type: none"> To add or subtract numbers within 20 To write number sentences involving addition or subtraction 		<ul style="list-style-type: none"> CB pp. 134–136 Hub pp. 136A–136B 	
Unit 3: Problem Solving				
Lesson 1: Word problems	<ul style="list-style-type: none"> To solve a 1-step word problem (with pictures) involving addition or subtraction of numbers within 20 		<ul style="list-style-type: none"> CB pp. 137–141 Hub pp. 141A–141C 	
Lesson 2: More word problems	<ul style="list-style-type: none"> To solve a 1-step word problem involving addition or subtraction of numbers within 20 by drawing a picture 	<ul style="list-style-type: none"> 2 different coloured markers (red and blue) 	<ul style="list-style-type: none"> CB pp. 142–144 Hub pp. 144A–144C 	
Lesson 3: Mind stretcher	<ul style="list-style-type: none"> To solve a non-routine word problem involving addition or subtraction of numbers within 20 using the strategy of making a list 		<ul style="list-style-type: none"> CB p. 145 	
Assessments — Accessible from Hub p. 145				

The suggested duration for each lesson is 60 minutes.

A Lesson Note link is found at the top of each new lesson page in the HUB.



The Lesson Notes displayed will correspond to the Core Book page displayed onscreen.

The Concrete–Pictorial–Abstract process is clearly outlined in an easy-to-follow lesson plan for beginning teachers, or a guide for more experienced teachers.

Concrete
–Pictorial

Abstract

Unit 2: Subtraction Within 20

Lesson 1: Subtracting a 1-digit number from a 2-digit number using number bonds

Let's Learn

Objective:

- To subtract a 1-digit number from a 2-digit number without regrouping using number bonds

Materials:

- 1 bundle of 10 pens and 5 loose pens per group

Resources:

- CB pp. 126–128
- Math pp. 128A–128B

Concrete Pictorial

Have students get into groups of four. Give each group a bundle of 10 pens and 5 loose pens. Have students place the bundle of 10 pens and 5 loose pens on their tables.

Ask: How many pens are in the bundle? (10) How many pens are not in the bundle? (5) How many pens are there altogether? (15)

Say: We want to subtract 3 from 15. So, we remove 3 loose pens from the group of 5 loose pens. Have students take away 3 loose pens.

Say: Now, we have a bundle of 10 pens and 2 loose pens.

Ask: What do we get when we add 10 to 2? (12)

Say: We are left with 12 pens when we take away 3 pens from a group of 15 pens.

Refer students to the picture of the toy cars on CB p. 126 and relate it to the activity carried out with the pens.

Highlight to them that the three toy cars that have been struck out show taking away 3 from 5.

Abstract

Write: $15 - 3 = \underline{\quad}$

Say: We know that 15 is 10 and 5.

Write '10' and '5' below 15 as shown on the page.

Say: We first subtract 3 from 5.

Write: $5 - 3 = \underline{\quad}$

Elicit the answer from students. (2)

Say: Now, we add 10.

Write: $2 + 10 = \underline{\quad}$

Elicit the answer from students. (12)

Ask: What is 15 minus 3? (12)

Write: $15 - 3 = 12$

Say: So, we get 12 when we subtract 3 from 15.

Point out to students that we use this method of subtraction when the digit in the ones place of the 2-digit number is greater than the 1-digit number we want to subtract. Help students see that in such cases, only the digit in the ones place changes.

Unit 2: Subtraction Within 20

You will learn to...

- subtract a 1-digit number from a 2-digit number using number bonds
- subtract a 1-digit number from a 2-digit number using the 'subtract from 10' method
- subtract a 1-digit number from a 2-digit number using the 'counting backwards' method

Lesson 1: Subtracting a 1-digit number from a 2-digit number using number bonds

Let's Learn

Subtract 3 from 15.



First, subtract 3 from 5. Then, add 10.

$$5 - 3 = 2$$

$$2 + 10 = 12$$

$$15 - 3 = 12$$

Let's Do

1. Subtract.

a) $17 - 4 = 13$

b) $14 - 3 = 11$

c) $18 - 6 = 12$

126 Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and using known facts (ACMNA010)

Let's Do

Task 1 provides practice in subtracting a 1-digit number from a 2-digit number without regrouping using number bonds.

In Task 1(a), pictorial guidance is provided to help students: the number of objects to be subtracted is struck out.


In Tasks 1(b) and 1(c), students are required to subtract without pictorial guidance.

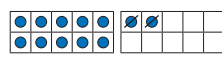
(continued...)

Correct answers shown


Let's Practise

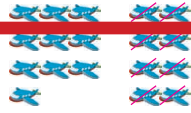
1. Subtract.


a)  $16 - 5 = 11$

b)  $12 - 2 = 10$


2. Subtract.


a)  $15 - 4 = 11$


b)  $18 - 8 = 10$

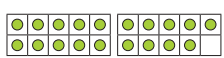
c)  $19 - 3 = 16$

3. Subtract.

a)  $17 - 5 = 12$

b)  $16 - 2 = 14$

c)  $13 - 1 = 12$

d)  $19 - 6 = 13$

4. Subtract.

a) $15 - 2 = 13$ b) $17 - 6 = 11$

c) $19 - 4 = 15$ d) $20 - 8 = 12$

e) $16 - 6 = 10$ f) $18 - 4 = 14$

g) $14 - 2 = 12$ h) $12 - 1 = 11$

Let's Practise

Task 1 provides practice in subtracting a 1-digit number from a 2-digit number without regrouping using number bonds. Pictorial guidance is provided to help students; the number of objects to be subtracted is struck out.

In Task 1(a), pictorial guidance is provided to help students; the number of objects to be subtracted is struck out.

In Task 1(b), ten frames are provided to help students; the number of circles to be subtracted is struck out.

Task 2 provides practice in subtracting a 1-digit number from a 2-digit number without regrouping using number bonds. Pictorial guidance is provided to help students first split the 2-digit number into 10 and a 1-digit number, and then subtract the 1-digit numbers by striking out the number of objects to be subtracted before adding 10 to get the answer.

Task 3 provides practice in subtracting a 1-digit number from a 2-digit number without regrouping using number bonds. Pictorial guidance is provided to help students subtract.

Task 4 provides practice in subtracting a 1-digit number from a 2-digit number without regrouping using number bonds. Students are expected to subtract without pictorial guidance.

Go to More Practice on Hub pp. 128A–128B (TG pp. 33–34).

←

More Practice

Correct answers are shown in the lesson notes for teachers' reference.

Information about More Practice is listed at the end of the Lesson Notes.

Dem Lesson ▶

Lesson Notes

Unit 2: Subtraction Within 20

You will learn to...

- subtract a 1-digit number from a 2-digit number using number bonds
- subtract a 1-digit number from a 2-digit number using the 'subtract from 10' method
- subtract a 1-digit number from a 2-digit number using the 'counting backwards' method

A video featuring a parallel demonstration lesson is accessed via a link at the top of each new lesson page on the HUB.

The Dem Lessons may be used as preparation for teachers, or shown directly to students as part of an I DO—WE DO lesson.

The video may be used to help differentiate learning between students: the teacher may demonstrate a more challenging example to extend some students, while others watch the video demonstration.

Dem Lesson ▶

Lesson Notes

Unit 2: Subtraction Within 20

You will learn to...

- subtract a 1-digit number from a 2-digit number using number bonds
- subtract a 1-digit number from a 2-digit number using the 'subtract from 10' method
- subtract a 1-digit number from a 2-digit number using the 'counting backwards' method

Subtracting a 1-digit number from a 2-digit number using number bonds

126

Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (ACMNA015)

Fit to screen

199 of 326

Each new lesson in the HUB has:

- A Dem Lesson
- Lesson Notes
- Let's Learn
- Let's Do
- Let's Practise
- More Practice

The Content Description being taught from the Australian Curriculum: Mathematics is identified for each lesson.

Unit 2: Subtraction Within 20

You will learn to...

- subtract a 1-digit number from a 2-digit number using number bonds
- subtract a 1-digit number from a 2-digit number using the 'subtract from 10' method
- subtract a 1-digit number from a 2-digit number using the 'counting backwards' method

Lesson 1: Subtracting a 1-digit number from a 2-digit number using number bonds

Let's Learn

Subtract 3 from 15.

15 - 3 = _____

10 5

First, subtract 3 from 5.
Then, add 10.

15 - 3 = _____

Split 15 into 10 and 5.

5 - 3 = 2
2 + 10 = 12

Let's Do

a) 17 - 4 = _____

b) 14 - 3 = _____

c) 18 - 6 = _____

126

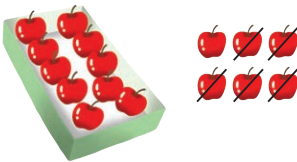
Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (ACMNA015)

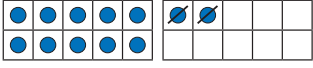
Content description for the Australian Curriculum related to this lesson.

Lesson Notes


Let's Practise


1. Subtract


a)  $16 - 5 = \underline{\hspace{2cm}}$

b)  $12 - 2 = \underline{\hspace{2cm}}$

2. Subtract.

a)  $15 - 4 = \underline{\hspace{2cm}}$

b)  $18 - 8 = \underline{\hspace{2cm}}$

c)  $19 - 3 = \underline{\hspace{2cm}}$

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Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (ACMNA015)

127

Tens Frame

Split Strategy

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In this lesson, PRIME uses the Concrete–Pictorial–Abstract approach, including using:


- Tens frames
- Split Strategy

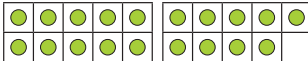
Lesson Notes

3. Subtract.

a)  $17 - 5 = \underline{\quad}$

b)  $16 - 2 = \underline{\quad}$

c)  $13 - 1 = \underline{\quad}$

d)  $19 - 6 = \underline{\quad}$

4. Subtract.

a) $15 - 2 = \underline{\quad}$	b) $17 - 6 = \underline{\quad}$
c) $19 - 4 = \underline{\quad}$	d) $20 - 8 = \underline{\quad}$
e) $16 - 6 = \underline{\quad}$	f) $18 - 4 = \underline{\quad}$
g) $14 - 2 = \underline{\quad}$	h) $12 - 1 = \underline{\quad}$

128
Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (ACMNA015)

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In all lessons, Let's Practise allows students to become confident with using Concrete–Pictorial–Abstract links before tackling abstract questions with little or no Concrete–Pictorial support.

Lesson Notes

Name: _____ Date: _____

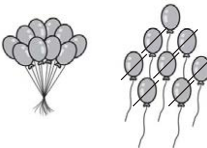
7

Unit 2 Lesson 1: Subtracting a 1-digit number from a 2-digit number using number bonds

More Practice

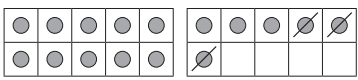
1. Subtract.

a)



$18 - 7 = \underline{\quad}$

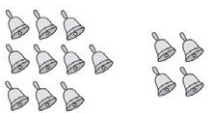
b)




$16 - 3 = \underline{\quad}$

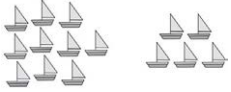
2. Subtract.


a)



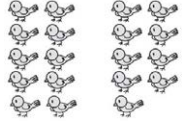
$14 - 1 = \underline{\quad}$



b)



$15 - 4 = \underline{\quad}$


c)



$19 - 9 = \underline{\quad}$


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128A

[Print Supplementary Section](#)

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More Practice may be printed from the HUB.


More Practice provides consolidation and reinforcement of the concepts and skills learned in that lesson.

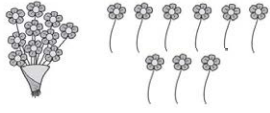
Name: _____ Date: _____

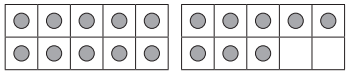
Lesson Notes

3. Subtract.

a) 

b) 

c) 

d) 

$17 - 3 = \underline{\quad}$

$15 - 1 = \underline{\quad}$

$19 - 7 = \underline{\quad}$

$18 - 5 = \underline{\quad}$

4. Subtract.

a) $18 - 3 = \underline{\quad}$

c) $15 - 2 = \underline{\quad}$

e) $16 - 1 = \underline{\quad}$

g) $14 - 4 = \underline{\quad}$

i) $16 - 4 = \underline{\quad}$

b) $13 - 3 = \underline{\quad}$

d) $17 - 2 = \underline{\quad}$

f) $19 - 5 = \underline{\quad}$

h) $18 - 2 = \underline{\quad}$

j) $20 - 7 = \underline{\quad}$

128B


Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (ACMNA015)

[Print Supplementary Section](#)

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The same strategies and concepts students learn and practise in the Student Book are used in More Practice.

More Practice further consolidates deep learning. This material is suitable to use for homework.


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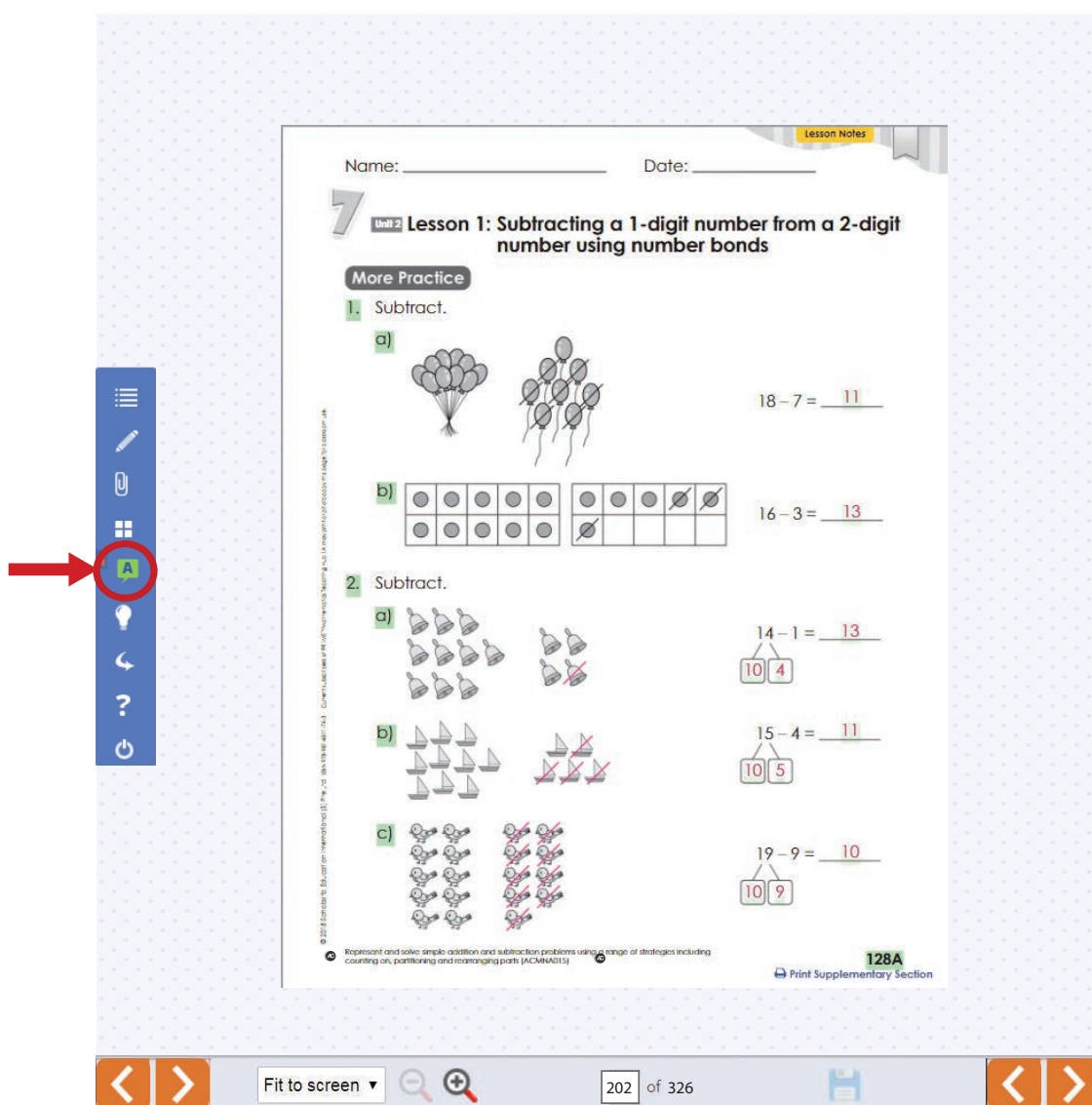
Want to find out more? Contact us at prime@scholastic.com.au | 1800 021 233

Return
to START

11

The answers for every student page in the HUB may be displayed onscreen.

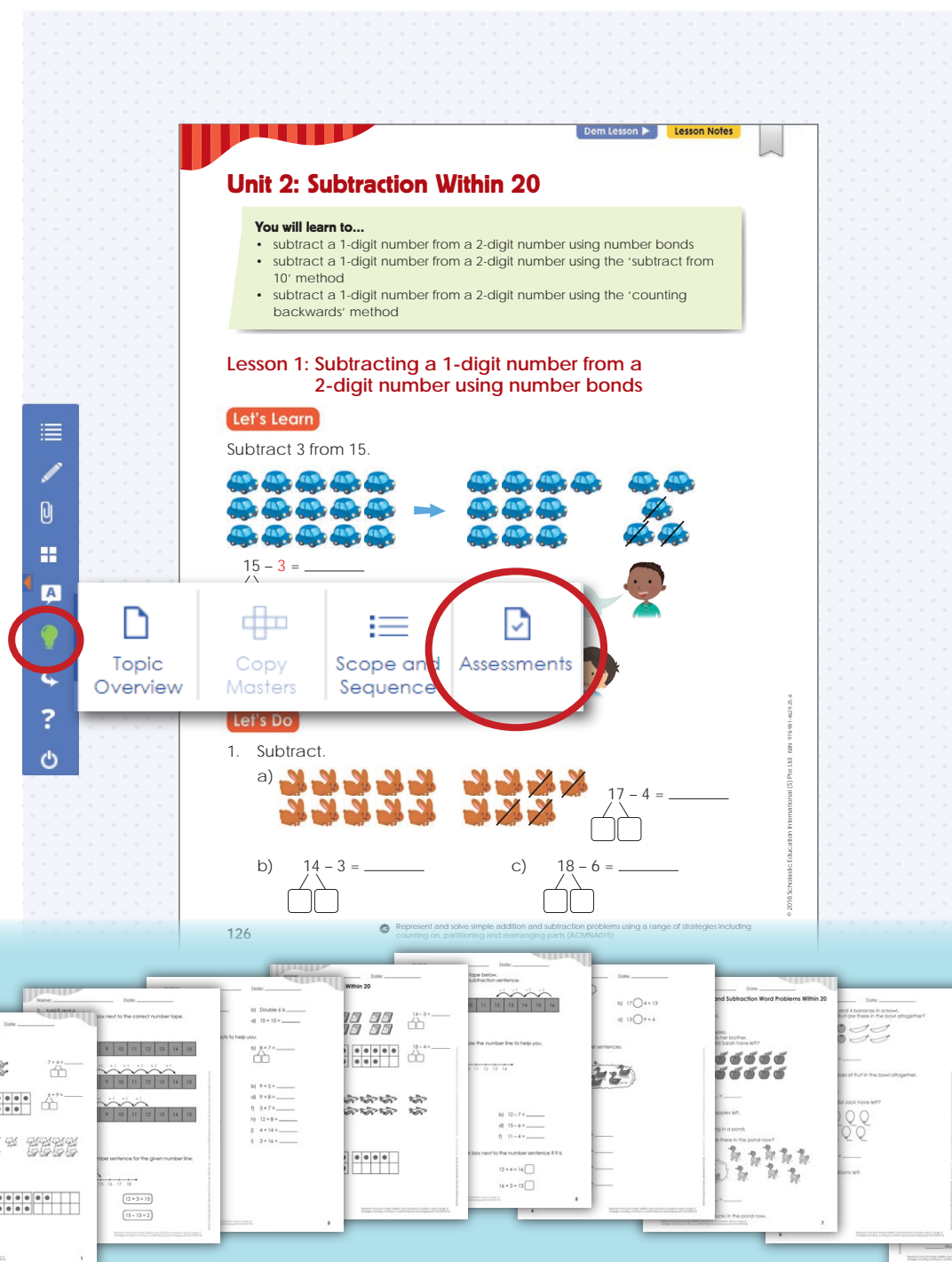
The answers are quickly toggled on and off via the  icon in the side menu.



The screenshot displays a digital worksheet titled "Lesson 1: Subtracting a 1-digit number from a 2-digit number using number bonds". The worksheet includes several subtraction problems with visual aids like balloons, ten frames, and number bonds. A red arrow points to a green "A" icon in the side menu, which is used to toggle the display of student answers. The bottom of the screen shows navigation controls, including arrows, a "Fit to screen" dropdown, a magnifying glass, and the page number "202 of 326".

Answers may be revealed gradually by clicking any of the green highlighted boxes, or all at once by clicking the page number.

From the student pages in the HUB, paper and pencil assessment for the entire topic may be downloaded via the  icon in the side-bar.



Unit 2: Subtraction Within 20

You will learn to...

- subtract a 1-digit number from a 2-digit number using number bonds
- subtract a 1-digit number from a 2-digit number using the 'subtract from 10' method
- subtract a 1-digit number from a 2-digit number using the 'counting backwards' method

Lesson 1: Subtracting a 1-digit number from a 2-digit number using number bonds

Let's Learn

Subtract 3 from 15.

$15 - 3 = \underline{\quad}$

Let's Do

1. Subtract.

a) $17 - 4 = \underline{\quad}$

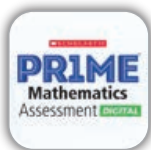
b) $14 - 3 = \underline{\quad}$

c) $18 - 6 = \underline{\quad}$

126

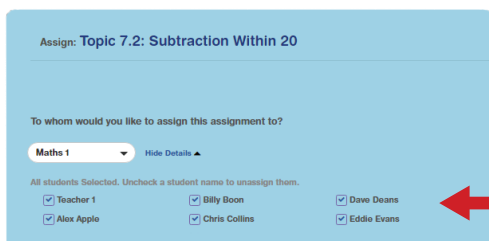
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1A Topic 7 Assessment: Addition and Subtraction within 20



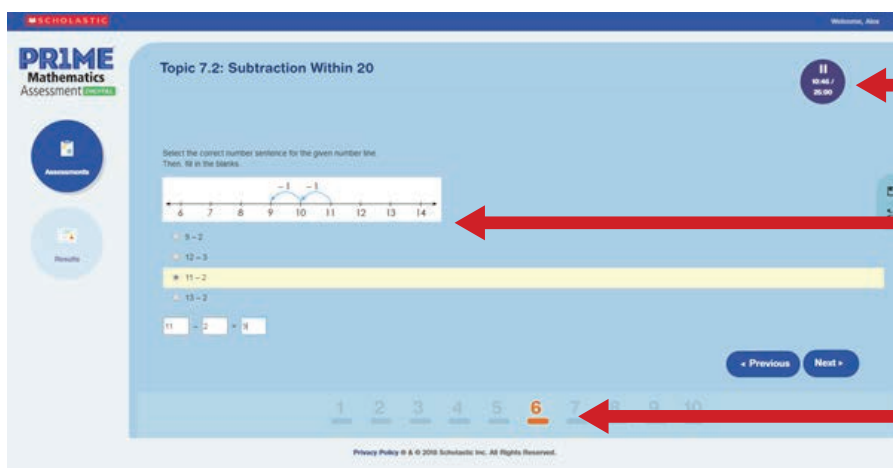
Digital Assessment is accessible via Scholastic Learning Zone.

1. Teacher assigns assessment tasks to students.



Select individual students or whole class

2. Students complete assessment online.

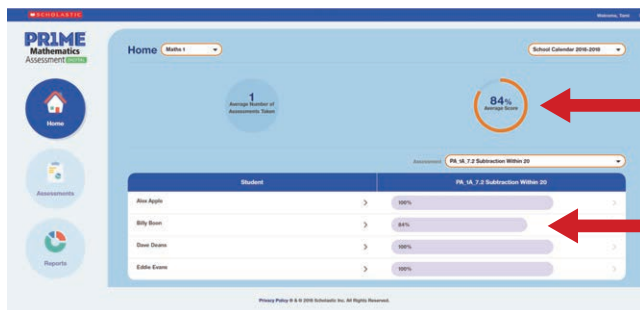


Timer

Responses use:
✓ keyboard entries
✓ drag and drop
✓ dropdown menus
✓ radio buttons

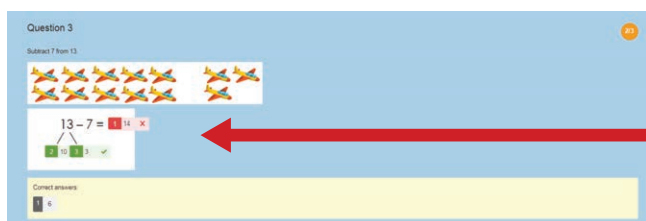
Progress bar

3. Teacher views class results or specific errors made by students online.



Class results

Click to view individual student results



View errors made by each student.