Mathletics

The New Zealand Curriculum

Year 0

Teacher Guide

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The Mathletics Programme – Year 0 Teacher Guide
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Editors: Sara Leman, Laurence Trinh, Amanda Santamaria, Mark Stafford and Jarrah McEvoy
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Tāwhia Copyright Aotearoa
Kotahitanga, Level 6, 19-21 Como Street
PO Box 331488, Takapuna, Auckland 0740
Email: kiaora@tawhia.nz
Freephone: 0800 480 271
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Contents

Set	Strand: Element	Topic	Teacher Guide	Student Book
		Block 1		
1	Number: Number structures	Numbers 1 to 3	2	2
2	Geometry: Shapes	2D shapes	4	5
3	Number: Number structures	Numbers to 5	6	8
4	Algebra	Repeating patterns	8	11
5	Review	**Checkpoint 1**	10	14
		Block 2		
6	Number: Number structures	Numbers 6 to 8	14	17
7	Geometry: Shapes	2D shapes and their features	16	20
8	Number: Number structures	Numbers to 10	18	23
9	Measurement: Measuring	Comparing size and length	20	26
10	Review	**Checkpoint 2**	22	29
		Block 3		
11	Number: Number structures: Algebra	Number order and position	26	32
12	Measurement: Measuring	Comparing weight and capacity	28	35
13	Number: Operations	Addition to 5	30	38
14	Geometry: Pathways	Position and location	32	41
15	Review	**Checkpoint 3**	34	44
		Block 4		
16	Number: Number structures	Numbers 11 to 15	38	47
17	Number: Operations	Subtraction	40	50
18	Measurement: Measuring	Time and days of the week	42	53
19	Number: Number structures	Numbers 16 to 20	44	56
20	Review	**Checkpoint 4**	46	59

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The Mathletics Programme is designed to support teaching and learning aligned with *The New Zealand Curriculum – Mathematics and Statistics*

The **Mathletics Programme Years 0–8** provides a comprehensive set of resources designed to support teachers in delivering high-quality mathematics teaching aligned with **The New Zealand Curriculum – Mathematics and Statistics**. The programme combines practical classroom materials with digital learning tools to support conceptual understanding, procedural fluency and problem solving.

The programme is built around a clear progression of mathematical ideas across the year. Concepts are introduced through explicit teaching, explored through discussion and hands-on activities, and reinforced through structured practice. Students then apply their learning through written tasks and digital activities that strengthen understanding and build confidence.

Each year level includes a **Teacher Guide**, **Student Book**, **Daily Lesson Plans** and **Mathseeds** or **Mathletics online lessons**. Together, these resources support teachers in planning, teaching and assessing mathematics in a consistent and manageable way across the school year.

The programme supports the strands of **The New Zealand Curriculum – Mathematics and Statistics**:

Number: numbers, counting, early addition and subtraction

Algebra: patterns and ordinal numbers

Measurement: length, weight, capacity and time

Geometry: 2D shapes and position



Learning is organised into sequences that develop mathematical ideas step by step. Assessment opportunities are embedded throughout the programme, so teachers can monitor understanding and respond to student needs.

By combining structured teaching guidance, rich classroom activities and digital reinforcement, the programme helps teachers create engaging mathematics lessons while building robust mathematical understanding for every student.

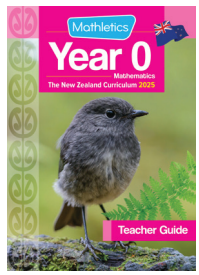


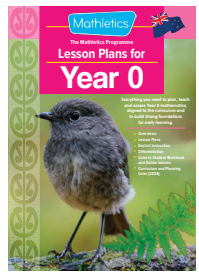
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How the Programme Works

The Mathletics Programme provides teachers with **clear weekly guidance and flexible daily teaching support**. It integrates five components: the **Teacher Guide**, **Lesson Plans**, **Student Book** and **Mathseeds online lessons**.







Teacher Guide

The **Year 0 Teacher Guide** provides a clear overview of mathematics across four blocks of learning during the first six months of school. Each block is organised into Sets. For each teaching Set, the guide includes:

- a Set Overview showing the learning intentions, success criteria, main activities and Student Book practice
- an Assessment Focus & Teacher Reflection page to support formative assessment and next-step planning
- links to relevant Mathseeds activities, where available.

Each block also begins with a Teaching Overview and ends with a Checkpoint to gather evidence of learning across the block. Together, these pages provide a clear view of the learning progression and support planning, teaching, assessment and reflection throughout the programme.

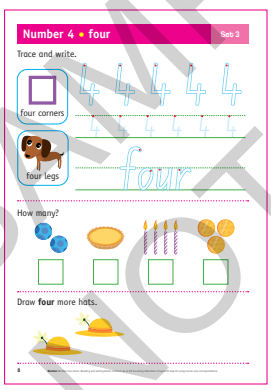


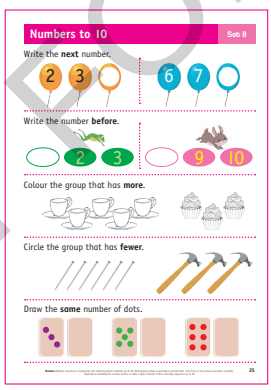
Lesson Plans (Downloadable)

Detailed **Lesson Plans** are provided as a downloadable resource for each Set. Each plan supports a Student Book lesson and provides practical, age-appropriate guidance for teaching the concept through talk, hands-on experiences, modelling and guided practice. Each lesson includes:

- a clear **Learning Intention and Success Criteria**
- a **Language Focus**, including key mathematical terms and sentence stems
- a short **Launch Activity** to activate thinking and introduce the concept
- **Hands-On Activities** using familiar objects and practical materials
- structured **I Do**, **We Do**, **You Do** explicit teaching
- links to the relevant **Student Book Practice** and **Mathseeds lesson**, where available
- **Reflect and Check** questions, including an **Exit Question**, to gather evidence of understanding.

Teachers can use the lesson plans flexibly, adjusting the pace and amount of teaching to suit the needs and readiness of their students.





Student Book

The **Year 0 Student Book** provides structured written practice that consolidates classroom learning. Tasks help students apply new ideas, practise key skills and represent mathematical thinking using pictures, models and simple recording activities.

Mathseeds Online

The **Mathseeds online component** has activities that reinforce concepts taught in class. These activities allow students to practise skills independently, receive immediate feedback and strengthen fluency with key mathematical ideas.

Assessment and Reflection

Assessment opportunities are embedded throughout the programme. Ongoing formative assessment enables teachers to check students' understanding during each Set, while reflection prompts in the Teacher Guide support **Teaching as Inquiry** and planning for next steps.

At the end of each block, a Checkpoint provides additional evidence of learning across the preceding Sets.

Together, these components create a connected learning system that supports **explicit teaching, meaningful practice and ongoing assessment**, helping teachers build strong mathematical understanding across the programme.

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Using the Mathletics Programme Teacher Guide, Lesson Plans and online learning package

The Mathletics Programme: 0–8 provides practical, classroom-ready materials that enable schools to strengthen conceptual teaching and learning progressions across the Mathematics and Statistics learning area. Teachers retain full agency over planning, sequencing and delivery, using the programme to enrich, reinforce or extend learning within their existing mathematics programmes.

The Teacher Guide

The **Year 0 Teacher Guide** gives teachers a clear overview of the mathematical concepts, skills and learning intentions developed across four blocks of learning during the first six months of school. Each block is organised into four teaching Sets followed by a Checkpoint.

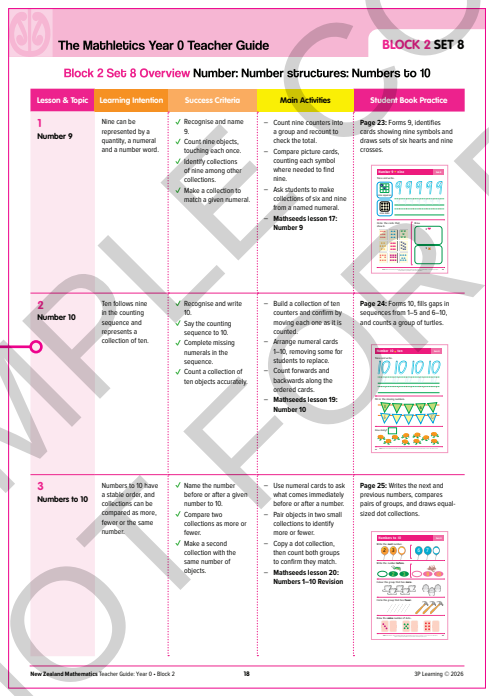
Each block begins with a **Teaching Overview** that shows the mathematical focus and progression across the Sets, together with links to the relevant Student Book pages and suggested online lessons.

Each teaching Set includes three Student Book pages and is supported by a **Set Overview** that summarises the learning intentions, success criteria, main activities and Student Book practice. An accompanying **Assessment Focus and Teacher Reflection** page identifies key understandings to assess, suggested assessment opportunities, and prompts for reflection and next-step planning.

At the end of each block, the **Checkpoint** gathers evidence of learning from the preceding Sets.

Together with the lesson plans, Student Book and online learning, the Teacher Guide supports consistent, high-quality classroom instruction aligned with ***The New Zealand Curriculum – Mathematics and Statistics***.

Each teaching Set is presented across a two-page section for easy reference during planning, teaching, assessment and reflection.

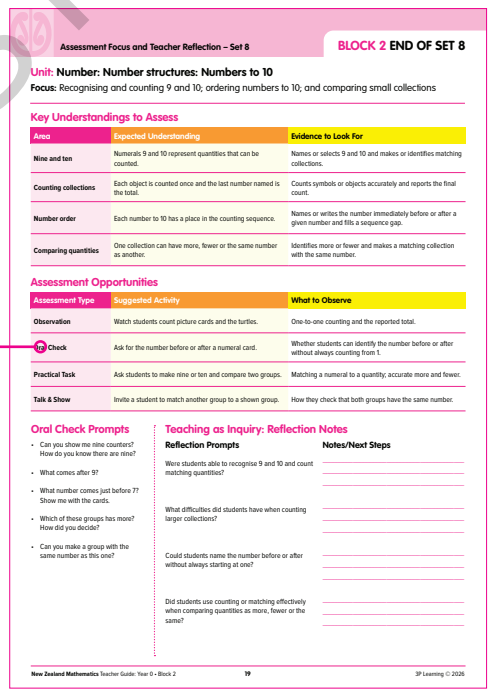

The Mathletics Year 0 Teacher Guide

BLOCK 2 SET 8

Block 2 Set 8 Overview Number: Number structures: Numbers to 10

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 Number 9	Nine can be represented by a quantity, a numeral and a number word.	✓ Recognise and name 9. ✓ Count nine objects, touching each once. ✓ Identify collections of nine among other collections. ✓ Make a collection to match a given numeral.	– Count nine counters into a group and recount to check the total. – Compare picture cards, counting each symbol where needed to find nine. – Ask students to make collections of six and nine from a named numeral. **Mathseeds lesson 17: Number 9**	**Page 23:** Forms 9, identifies cards showing nine symbols and draws sets of six hearts and nine crosses.
2 Number 10	Ten follows nine in the counting sequence and represents a collection of ten.	✓ Recognise and write 10. ✓ Say the counting sequence to 10. ✓ Complete missing numerals in the sequence. ✓ Count a collection of ten objects accurately.	– Build a collection of ten counters and confirm by moving each one as it is counted. – Arrange numeral cards 1–10, removing some for students to replace. – Count forwards and backwards along the ordered cards. **Mathseeds lesson 19: Number 10**	**Page 24:** Forms 10, fills gaps in sequences from 1–5 and 6–10, and counts a group of turtles.
3 Numbers to 10	Numbers to 10 have a stable order, and collections can be compared as more, fewer or the same number.	✓ Name the number before or after a given number to 10. ✓ Compare two collections as more or fewer. ✓ Make a second collection with the same number of objects.	– Use numeral cards to ask what comes immediately before or after a number. – Pair objects in two small collections to identify more or fewer. – Copy a dot collection, then count both groups to confirm they match. **Mathseeds lesson 20: Numbers 1–10 Revision**	**Page 25:** Writes the next and previous numbers, compares pairs of groups, and draws equal-sized dot collections.

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Assessment Focus and Teacher Reflection – Set 8

BLOCK 2 END OF SET 8

Unit: Number: Number structures: Numbers to 10

Focus: Recognising and counting 9 and 10; ordering numbers to 10; and comparing small collections

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Nine and ten	Numerals 9 and 10 represent quantities that can be counted.	Names or selects 9 and 10 and makes or identifies matching collections.
Counting collections	Each object is counted once and the last number named is the total.	Counts symbols or objects accurately and reports the final count.
Number order	Each number to 10 has a place in the counting sequence.	Names or writes the number immediately before or after a given number and fills a sequence gap.
Comparing quantities	One collection can have more, fewer or the same number as another.	Identifies more or fewer and makes a matching collection with the same number.

Assessment Opportunities

Assessment Type	Suggested Activity	What to Observe
Observation	Watch students count picture cards and the turtles.	One-to-one counting and the reported total.
Oral Check	Ask for the number before or after a numeral card.	Whether students can identify the number before or after without always counting from 1.
Practical Task	Ask students to make nine or ten and compare two groups.	Matching a numeral to a quantity; accurate more and fewer.
Talk & Show	Invite a student to match another group to a shown group.	How they check that both groups have the same number.

Oral Check Prompts

- Can you show me nine counters? How do you know there are nine?
- What comes after 9?
- What number comes just before 7? Show me with the cards.
- Which of these groups has more? How did you decide?
- Can you make a group with the same number as this one?

Teaching as Inquiry: Reflection Notes

Reflection Prompts / Notes/Next Steps

Were students able to recognise 9 and 10 and count matching quantities?

What difficulties did students have when counting larger collections?

Could students name the number before or after without always starting at one?

Did students use counting or matching effectively when comparing quantities as more, fewer or the same?

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Left page
Set Overview:

Summarises the Set's learning intentions, success criteria, main activities and Student Book practice.

- Provides a clear view of the learning across the three lessons.
- Shows the Student Book practice for each lesson.
- Supports planning and teaching across the Set.

Right page
Assessment and Teacher Reflection:

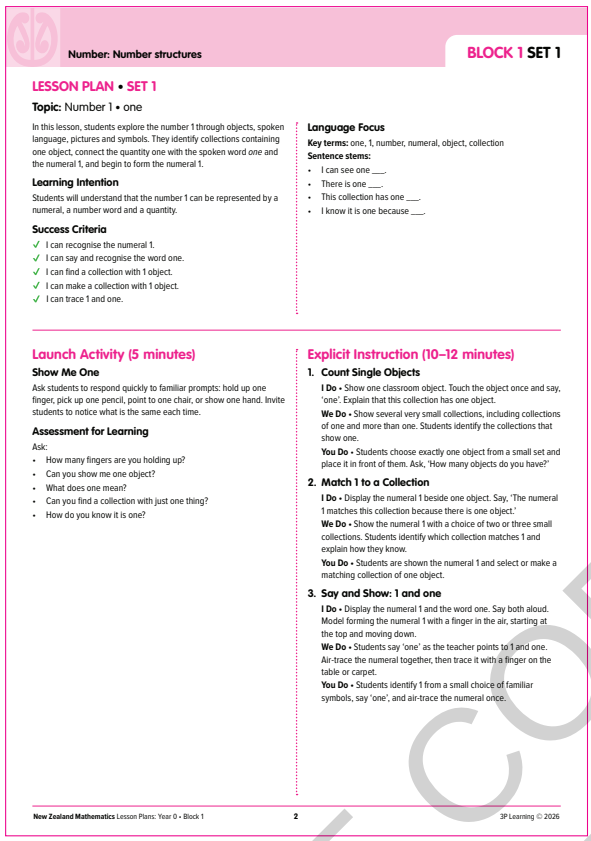
Identifies what to assess and how to gather evidence of learning across the Set.

- Identifies the key understandings and evidence to look for.
- Suggests formative assessment opportunities.
- Provides oral check prompts to check understanding.
- Includes reflection prompts to support Teaching as Inquiry and next steps.

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How a Lesson Works

Each **Lesson Plan** guides teachers through the introduction, exploration and practice of a mathematical idea. Lessons are designed to build conceptual understanding, develop mathematical language and provide opportunities for students to practise and apply new learning.



Number: Number structures

BLOCK 1 SET 1

LESSON PLAN • SET 1

Topic: Number 1 • one

In this lesson, students explore the number 1 through objects, spoken language, pictures and symbols. They identify collections containing one object, connect the quantity one with the spoken word one and the numeral 1, and begin to form the numeral 1.

Learning Intention

Students will understand that the number 1 can be represented by a numeral, a number word and a quantity.

Success Criteria

- ✓ I can recognise the numeral 1.
- ✓ I can say and recognise the word one.
- ✓ I can find a collection with 1 object.
- ✓ I can make a collection with 1 object.
- ✓ I can trace 1 and one.

Language Focus

Key terms: one, 1, number, numeral, object, collection

Sentence stems:

- I can see one ___.
- There is one ___.
- This collection has one ___.
- I know it is one because ___.

Launch Activity (5 minutes)

Show Me One

Ask students to respond quickly to familiar prompts: hold up one finger, pick up one pencil, point to one chair, or show one hand. Invite students to notice what is the same each time.

Assessment for Learning

Ask:

- How many fingers are you holding up?
- Can you show me one object?
- What does one mean?
- Can you find a collection with just one thing?
- How do you know it is one?

Explicit Instruction (10–12 minutes)

1. **Count Single Objects**

   I Do • Show one classroom object. Touch the object once and say, 'one'. Explain that this collection has one object.

   We Do • Show several very small collections, including collections of one and more than one. Students identify the collections that show one.

   You Do • Students choose exactly one object from a small set and place it in front of them. Ask, 'How many objects do you have?'

2. **Match 1 to a Collection**

   I Do • Display the numeral 1 beside one object. Say, 'The numeral 1 matches this collection because there is one object.'

   We Do • Show the numeral 1 with a choice of two or three small collections. Students identify which collection matches 1 and explain how they know.

   You Do • Students are shown the numeral 1 and select or make a matching collection of one object.

3. **Say and Show: 1 and one**

   I Do • Display the numeral 1 and the word one. Say both aloud. Model forming the numeral 1 with a finger in the air, starting at the top and moving down.

   We Do • Students say 'one' as the teacher points to 1 and one. Air-trace the numeral together, then trace it with a finger on the table or carpet.

   You Do • Students identify 1 from a small choice of familiar symbols, say 'one', and air-trace the numeral once.

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Learning Intention and Success Criteria

Each lesson begins with a clear **Learning Intention** that identifies the key mathematical idea for the lesson. **Success Criteria** describe what students should be able to do by the end of the lesson and provide a shared focus for learning.

Language Focus

Key mathematical vocabulary and sentence stems support students in explaining their thinking. These prompts encourage students to use precise mathematical language when discussing patterns, strategies and solutions.

Launch Activity

A short warm-up activity activates prior knowledge and introduces the mathematical idea. This stage often includes quick questions or number tasks that help students notice patterns and prepare for the new concept.

Explicit Instruction

Teachers model the mathematical concept using examples, visual representations and worked solutions. Lessons follow a gradual release approach:

I Do – the teacher demonstrates the concept

We Do – the class works through examples together

You Do – students apply the idea independently.

This structure helps students move from guided learning to independent understanding.

Guided and Independent Practice

Students practise and apply new learning through structured tasks and problem-solving activities. **Hands-On Activities** encourage students to explore patterns, test ideas and explain their reasoning.

Student Book Practice

Students consolidate their understanding through written tasks in the **Student Book**, applying the concepts explored during the lesson.

Mathseeds Online Practice

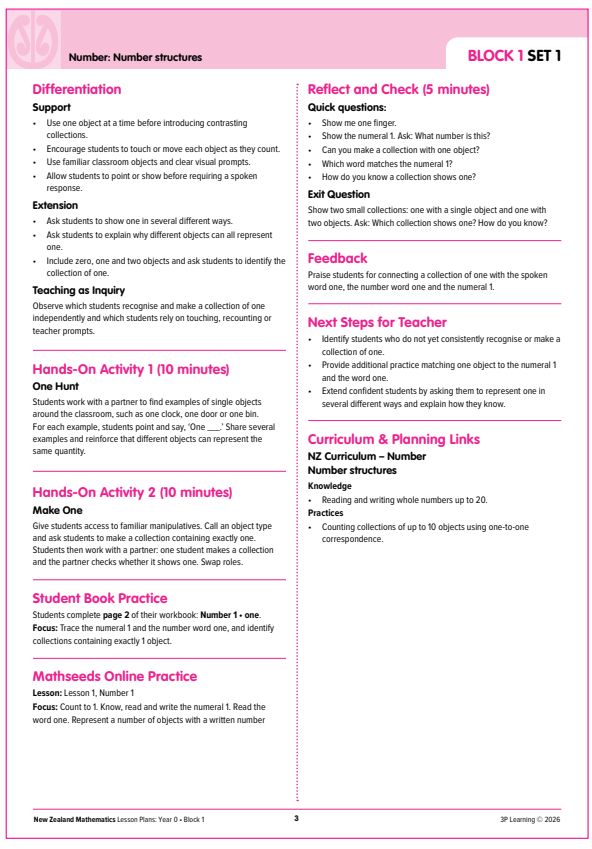
Interactive **Mathseeds activities** reinforce key skills and provide additional independent practice. These activities provide immediate feedback and help strengthen fluency with important mathematical ideas.

Reflect and Check

Short questions and discussion prompts help teachers check student understanding. Students are encouraged to explain their thinking and reflect on the strategies they used.

Teaching as Inquiry

Each lesson includes prompts to help teachers observe student understanding and identify next steps for teaching. This supports ongoing planning and targeted support for students who need additional practice or extension.



Number: Number structures

BLOCK 1 SET 1

Differentiation

Support

- Use one object at a time before introducing contrasting collections.
- Encourage students to touch or move each object as they count.
- Use familiar classroom objects and clear visual prompts.
- Allow students to point or show before requiring a spoken response.

Extension

- Ask students to show one in several different ways.
- Ask students to explain why different objects can all represent one.
- Include zero, one and two objects and ask students to identify the collection of one.

Teaching as Inquiry

Observe which students recognise and make a collection of one independently and which students rely on touching, recounting or teacher prompts.

Hands-On Activity 1 (10 minutes)

One Hunt

Students work with a partner to find examples of single objects around the classroom, such as one clock, one door or one bin. For each example, students point and say, 'One ___.' Share several examples and reinforce that different objects can represent the same quantity.

Hands-On Activity 2 (10 minutes)

Make One

Give students access to familiar manipulatives. Call an object type and ask students to make a collection containing exactly one. Students then work with a partner: one student makes a collection and the partner checks whether it shows one. Swap roles.

Student Book Practice

Students complete **page 2** of their workbook: **Number 1 • one**.
Focus: Trace the numeral 1 and the number word one, and identify collections containing exactly 1 object.

Mathseeds Online Practice

Lesson: Lesson 1, Number 1
Focus: Count to 1. Know, read and write the numeral 1. Read the word one. Represent a number of objects with a written number

Reflect and Check (5 minutes)

Quick questions:

- Show me one finger.
- Show the numeral 1. Ask: What number is this?
- Can you make a collection with one object?
- Which word matches the numeral 1?
- How do you know a collection shows one?

Exit Question

Show two small collections: one with a single object and one with two objects. Ask: Which collection shows one? How do you know?

Feedback

Praise students for connecting a collection of one with the spoken word one, the number word one and the numeral 1.

Next Steps for Teacher

- Identify students who do not yet consistently recognise or make a collection of one.
- Provide additional practice matching one object to the numeral 1 and the word one.
- Extend confident students by asking them to represent one in several different ways and explain how they know.

Curriculum & Planning Links

NZ Curriculum – Number
Number structures
Knowledge

- Reading and writing whole numbers up to 20.

Practices

- Counting collections of up to 10 objects using one-to-one correspondence.

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High-Impact Teaching Practices

High-quality mathematics teaching creates a classroom where every student is thinking, discussing, reasoning and making progress. The practices below promote active participation, make student thinking visible and support responsive teaching. These practices are embedded throughout the **Lesson Plans**.

Build mathematical vocabulary and sentence structure

Students who can explain their thinking are more likely to develop deep conceptual understanding. Throughout every lesson, explicitly teach new vocabulary, model the sentence stems provided in the lesson plan, and encourage students to explain their reasoning using increasingly precise mathematical language. Language helps students organise, communicate and strengthen their mathematical thinking.

Involve every student

Use strategies that involve every learner and provide immediate insight into student understanding.

High-participation strategies include: Mini whiteboards, Think–Pair–Share, Turn and Talk, Show Me, Cold Call (after thinking time), True or False, Thumbs up. When every student is thinking, every student is learning.



Ask questions that develop reasoning

Language shapes mathematical thinking. In Year 0, students are beginning to express their mathematical ideas through words, gestures, pictures and practical materials. Encourage them to show, describe and notice what they are thinking. Simple, purposeful questions help students develop confidence in sharing their ideas and listening to the thinking of others. Ask:

- How did you work that out?
- How do you know?
- Can you show me?
- Can you show me another way?
- What do you notice?
- What might come next?

Make mathematical thinking visible

Young students learn from seeing mathematics demonstrated, as well as hearing how you think. In Year 0, model mathematical ideas using **objects, actions, pictures and simple mathematical language**. As you model examples:

- think aloud as you work
- show what you notice
- explain what you are doing and why
- make connections to previous learning
- model how to check an answer.

By making your thinking visible, you help students begin to develop their own mathematical reasoning.

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Building the Foundations in Year 0

Year 0 supports children as they begin formal mathematics learning at school. It focuses on the **essential early knowledge, language and mathematical experiences** children need during their **first six months of school** and builds a strong foundation for Year 1.

At this stage, children are developing much more than the ability to recognise and write numbers. They are learning to **notice quantities, compare and describe objects, recognise patterns and shapes and talk about position and measurement**, and use mathematical language to explain what they see and do. Learning begins with small, concrete and highly accessible ideas, then develops through repeated opportunities to connect objects, pictures, spoken language and written symbols.

How learning develops across Year 0

The **four blocks form a deliberate progression**. Learning begins with small quantities, familiar shapes and simple repeating patterns. As children become more secure, the number range extends to 10 and they begin comparing attributes such as size and length. Later, they explore number order, early addition, weight, capacity and positional language. In the final block, the number range extends to 20 and children begin to apply early subtraction and everyday time concepts.

Block 1 Establishing early number, shape and pattern concepts	Block 2 Extending number and shape, and introducing measurement	Block 3 Developing number order and measurement concepts, and introducing addition and position	Block 4 Extending number and introducing subtraction and time
• numbers 1–5 • counting and quantities • familiar 2D shapes • repeating patterns	• numbers 6–10 • counting to 10 • shape features • size and length	• number order and position • addition to 5 • weight and capacity • positional language	• numbers 11–20 • counting and ordering • early subtraction • days of the week • everyday time

Building towards Year 1

Across the four blocks, children move from **highly concrete and familiar mathematical experiences** towards a **broader number range, early operations and increasing independence**. By the end of Year 0, they have experienced the key mathematical ideas identified for the first six months of Phase 1 and have begun to develop the vocabulary, representations, routines and confidence they will draw on in Year 1.

Each block includes **four teaching Sets** followed by a **Checkpoint**. Together, the ongoing assessment opportunities within the Sets and the end-of-block Checkpoint help teachers recognise what children can demonstrate and identify learning that may need further consolidation.

Year 0 Block Snapshots

These short activities provide a snapshot of a student's understanding of selected key concepts from each block. They are not intended to assess every concept or to produce a score.

Photocopy one copy per student. The checks may be used **before a block** to identify existing knowledge and inform teaching, or **after a block** to check understanding of key concepts and identify where further support may be useful. Activities are teacher-administered and may be completed orally or with simple classroom materials.

Record whether each activity was completed **independently, with support**, or was **not yet demonstrated**. Use the information gathered alongside classroom observations and other assessment evidence to inform next steps.



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Year 0 Block Snapshots

Block 1

Student: _____ **Date:** _____

Activity	Independent	With support	Not yet demonstrated
Recognise numbers 1–5 Show the numerals 1–5 in mixed order. Ask the student to name each number.	☐	☐	☐
Count a small collection Place 5 counters in front of the student. Ask: "How many are there?"	☐	☐	☐
Compare quantities Show groups of 2 and 4 counters. Ask which group has more and which has fewer.	☐	☐	☐
Recognise 2D shapes Show a circle, square and triangle. Ask the student to name each shape.	☐	☐	☐
Continue a repeating pattern Make an AB pattern, such as red, blue, red, blue. Ask what comes next and invite the student to continue it.	☐	☐	☐

Block 2

Student: _____ **Date:** _____

Activity	Independent	With support	Not yet demonstrated
Recognise numbers 6–10 Show the numerals 6–10 in mixed order. Ask the student to name each number.	☐	☐	☐
Understand the counting sequence to 10 Ask the student to count from 6 to 10. Then ask: "What number comes before 9?"	☐	☐	☐
Describe shape features Show a circle, triangle, square and rectangle. Ask which have straight or curved lines and which have 4 corners.	☐	☐	☐
Compare size Show two familiar objects of clearly different sizes. Ask which is bigger and which is smaller.	☐	☐	☐
Compare length Show two objects of clearly different lengths. Ask which is longer and which is shorter.	☐	☐	☐

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Year 0 Block Snapshots

Block 3

Student: _____ **Date:** _____

Activity	Independent	With support	Not yet demonstrated
Use number order to 10 Ask the student to complete: 1, 2, 3, __, 5 and 10, 9, 8, __, 6.	☐	☐	☐
Use ordinal numbers Place 5 objects in a row. Ask the student to point to the 2nd object and then the 5th object.	☐	☐	☐
Compare weight and capacity Ask which of two familiar objects is heavier. Then show two containers and ask which would hold more.	☐	☐	☐
Add to 5 Place 2 counters together with 3 more. Ask: "How many are there altogether?"	☐	☐	☐
Use position words Ask the student to place an object under, next to or above another object, then describe where it is.	☐	☐	☐

Block 4

Student: _____ **Date:** _____

Activity	Independent	With support	Not yet demonstrated
Recognise numbers 11–15 Show several numerals from 11–15 in mixed order. Ask the student to name them.	☐	☐	☐
Subtract within 5 Place 5 counters in front of the student. Take away 2 and ask: "How many are left?"	☐	☐	☐
Use everyday time language Ask: "What day comes after Monday?" Then ask for one thing they usually do in the daytime or at night-time.	☐	☐	☐
Recognise numbers 16–20 Show several numerals from 16–20 in mixed order. Ask the student to name them.	☐	☐	☐
Count forwards and backwards within 20 Ask the student to count from 16 to 20, then count back from 20 to 16.	☐	☐	☐

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Year 0 (First 6 Months) Overview

This summary highlights the key mathematical knowledge and practices students develop in their first six months of school. These early understandings establish foundations in counting, number sense, patterns and spatial awareness.

Number – Number structures

Develop understanding of numbers to 20 as a sequence, including recognising number names, numerals and order.

Count forwards and backwards, compare quantities, and recognise which is more, less or the same.

Use one-to-one counting and understand that the last number counted represents the total.

Begin to recognise small collections instantly (subitising) and place numbers on a number line.

Number – Operations

Understand that addition combines groups and subtraction separates them.

Develop early recall of addition and subtraction facts to 5.

Recognise numbers before and after within 10 and begin solving simple number problems using objects and drawings.

Algebra – Equations and relationships

Recognise and create simple repeating patterns using shapes, objects and colours.

Identify and continue patterns with two elements and describe the pattern rule.

Use ordinal language (first, second, third, fourth, fifth) to describe position in a sequence.

Measurement

Compare objects using everyday language, such as longer, shorter, heavier and lighter.

Explore length, weight and capacity through direct comparison of objects.

Develop early measurement understanding through hands-on experiences.

Measurement – Time

Recognise and name the days of the week and connect them to familiar routines.

Understand the difference between weekdays and weekends.

Describe events using everyday time language, such as before, after and next.

Geometry – Shapes

Identify and describe familiar 2D shapes, such as circles, triangles, squares and rectangles.

Sort shapes based on attributes, such as straight and curved sides.

Recognise that shapes remain the same regardless of size, colour or orientation.

Geometry – Spatial reasoning (Pathways)

Use positional language, such as above, below, next to and behind, to describe location and movement.

Follow simple instructions to locate objects or move within familiar spaces.



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Years 0–1 Resources List

Maths Manipulatives & Equipment

- ☐ Number lines and floor number lines
- ☐ Five frames and ten frames
- ☐ Base-10 blocks
- ☐ Counters, including coloured
- ☐ Connecting cubes and coloured blocks
- ☐ Dice and dominoes
- ☐ Pattern blocks and shape blocks
- ☐ Square tiles and tangram pieces
- ☐ 2D shapes in different sizes
- ☐ 3D shapes: cubes, spheres, cylinders
- ☐ Paddle pop sticks and bundles of ten
- ☐ Threading beads
- ☐ Balance scales
- ☐ Analogue teaching clock
- ☐ Play money and coins
- ☐ Small toys and toy animals
- ☐ Hoops
- ☐ Containers, cups, jugs and boxes

Charts, Cards & Visual Resources

- ☐ Numeral cards 0–100
- ☐ Picture, word and numeral cards to 30
- ☐ Te reo Māori number cards to 30
- ☐ Dot cards
- ☐ Ordinal number cards (1st–10th)
- ☐ Hundreds and missing-number charts
- ☐ 2D shape cards
- ☐ Addition and subtraction fact cards
- ☐ Doubles cards
- ☐ Ten-frame puzzles
- ☐ Multiples of ten cards
- ☐ Coloured cards and pattern strips
- ☐ O'clock, digital and time unit cards
- ☐ Days of the week and month cards
- ☐ Daily routine picture cards
- ☐ Large calendar and weekly chart
- ☐ Coin, note and price tag cards
- ☐ Picture ruler

Classroom & Craft Materials

- ☐ Everyday objects to sort and measure
- ☐ Sets of classroom objects in tens
- ☐ Mini whiteboards
- ☐ Plain, coloured, grid and dot paper
- ☐ Straws
- ☐ String and ribbon
- ☐ Stamps and stickers
- ☐ Crayons

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Year 0 Knowledge and Practices

The New Zealand Curriculum – Mathematics and Statistics

Knowledge	Practices	Student Pages			
Number — Number structures		**Block 1**	**Block 2**	**Block 3**	**Block 4**
The whole numbers from 0 to 20 form a sequence. Each whole number has a unique name and numeral. The names of the numbers between 13 and 19 use the '-teen' suffix. Numbers in counting order are ordered from smallest to largest. Numbers can be placed on a number line to show order and magnitude. Numbers can be used to represent ordinal position in sequences (e.g. 1st, 2nd, 3rd). Small collections can be recognised without counting. When counting collections, each object is counted once and only once (the one-to-one principle). The last number counted is the number of objects in the collection (the cardinality principle).	Reading and writing whole numbers up to 20.	2, 3, 4, 8, 9, 14	17, 18, 19, 23, 24	33	47, 48, 49, 56, 57, 60
	Counting forwards or backwards from any whole number between 1 and 10, and then between 1 and 20.		18, 19, 24, 29	32, 33, 44	58, 60
	Comparing and ordering whole numbers up to 20 and ordinal numbers up to 5th, using words.	10	25, 29	32, 34, 44	60
	Locating whole numbers on a fully labelled number line.			33	
	Subitising (recognising without counting) the number of objects in a small collection (3–5 objects).	9, 14	17, 23	32, 44	
	Counting collections of up to 10 objects using one-to-one correspondence.	2, 3, 4, 8, 9, 14	17, 23		
	Recognising when a quantity is greater than, less than, or the same as another quantity.	10	25		
Number — Operations		**Block 1**	**Block 2**	**Block 3**	**Block 4**
Addition is putting parts together to find a total or whole. Subtraction is separating a number into two or more parts or finding the difference between two numbers.	Memorising addition and subtraction facts up to 5 (e.g. 2 + 3 = 5).			38, 39, 40	50, 51, 52, 59
	Naming the number before or after a given number in the counting sequence up to 10.		25	39	
Algebra		**Block 1**	**Block 2**	**Block 3**	**Block 4**
Patterns are made up of elements (including numeric or spatial elements) in a sequence governed by a rule, and they arise in a range of situations (e.g. cultural patterns, patterns in the local environment, patterns on everyday objects). Ordinal numbers (e.g. 1st, 2nd, 3rd) can be used to describe the elements in a sequence. Repeating patterns have a repeating group of elements called the unit of repeat. A missing element can be predicted from other elements in the pattern.	Copying, continuing, creating, and describing a repeating pattern with two elements (e.g. cat, dog, cat, dog, ____, ____).	11, 12, 13, 16			
	Using ordinal numbers up to 5th place to describe position in a sequence.			34	

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Year 0 Knowledge and Practices

The New Zealand Curriculum – Mathematics and Statistics

Knowledge	Practices	Student Pages			
Measurement — Measuring		**Block 1**	**Block 2**	**Block 3**	**Block 4**
Length is the distance between two points. Weight is how heavy something feels. Capacity is the maximum amount of liquid a container can hold.	Directly comparing two objects by an attribute (e.g. length, weight, capacity).		26, 27, 28, 31	35, 36, 37, 45	
Measurement — Time		**Block 1**	**Block 2**	**Block 3**	**Block 4**
The weekdays are Monday through Friday. The weekend consists of the days Saturday and Sunday.	Connecting days of the week to familiar events and daily routines (e.g. via the class timetable).				53, 54, 55, 61
	Naming and ordering the days of the week, including naming the day before and the day after.				54, 55, 61
Geometry — Shapes		**Block 1**	**Block 2**	**Block 3**	**Block 4**
2D shapes have attributes such as size, colour, sides, angles and corners that can be observed and described using geometric language. Shapes have the same name despite their colour or size.	Identifying, sorting by one attribute, and describing familiar 2D shapes, including triangles, circles and rectangles (including squares).	5, 6, 7, 15	20, 21, 22, 30		
Geometry — Pathways		**Block 1**	**Block 2**	**Block 3**	**Block 4**
Spatial language can be used for giving and following instructions (e.g. near, far, next to, beside, on top, under, over, down, up, left, right, turn).	Following instructions to move to a familiar location or locate an object.			41, 42, 43, 46	

Notes

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Year 0

Block 1

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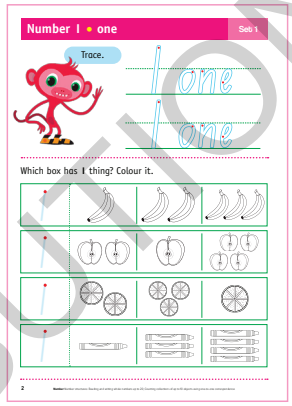
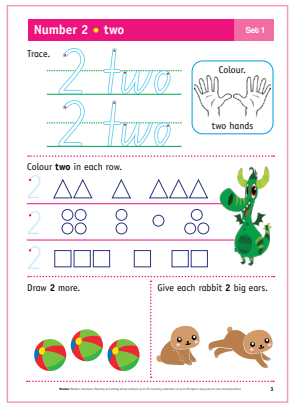
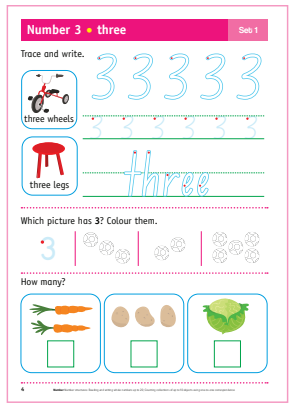
Block 1 Teaching Overview

Week & Unit	High-Level Curriculum Focus	Student Book and Online lessons	Resources
Set 1 **Number: Number structures: Numbers 1 to 3**	**Number** Number structures Reading and writing whole numbers up to 20. Counting collections of up to 10 objects using one-to-one correspondence.	**Pages 2–4** **Mathseeds lessons 1, 2,3**	Counters, small collections of classroom objects, numeral cards 1–3, number word cards one–three, mini whiteboards
Set 2 **Geometry: Shapes: 2D shapes**	**Geometry** Shapes Identifying, sorting by one attribute, and describing familiar 2D shapes, including triangles, circles and rectangles (including squares).	**Pages 5–7** **Mathseeds lessons 4, 6, 9**	2D shape cards and cut-outs, circles, squares and triangles in different sizes and orientations, classroom objects showing familiar 2D shapes
Set 3 **Number: Number structures: Numbers to 5**	**Number** Number structures Reading and writing whole numbers up to 20. Subitising the number of objects in a small collection (3–5 objects). Counting collections of up to 10 objects using one-to-one correspondence. Recognising when a quantity is greater than, less than, or the same as another quantity.	**Pages 8–10** **Mathseeds lessons 5, 7, 10**	Counters, numeral cards 1–5, number word cards one–five, dot cards, small collections of objects, mini whiteboards
Set 4 **Algebra: Repeating patterns**	**Algebra** Copying, continuing, creating and describing a repeating pattern with two elements.	**Pages 11–13** **Mathseeds lessons 27, 37**	Coloured counters or blocks, coloured cards, pattern strips, classroom objects for making two-element repeating patterns
Set 5 • Checkpoint 1 **Block 1 review**	**Assessment and Review** Review numbers 1–5, 2D shapes and repeating patterns.	**Pages 14–16**	Student Book Checkpoint 1 pages 14–16. Counters or small objects for oral/practical follow-up as needed.

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Block 1 Set 1 Overview Number: Number structures: Numbers 1 to 3

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Number 1 • one**	The number 1 can be represented by a numeral, a number word and a quantity.	✓ Recognise the numeral 1. ✓ Say and recognise the word one. ✓ Identify a collection of 1 object. ✓ Trace the numeral and number word.	– Count single objects. – Match 1 to collections of 1. – Practise saying and tracing 1 and one. – **Mathseeds lesson 1: Number 1**	**Page 2:** Trace 1 and one, and identify boxes containing 1 object. 
2 **Number 2 • two**	The number 2 can be represented by a numeral, a number word and a collection of two objects.	✓ Recognise the numeral 2. ✓ Say and recognise the word two. ✓ Count 2 objects using one-to-one correspondence. ✓ Make a collection of 2.	– Count pairs of familiar objects. – Match 2 to collections of 2. – Practise saying and tracing 2 and two. – **Mathseeds lesson 2: Number 2**	**Page 3:** Trace 2 and two, colour groups of 2, and draw to make collections of 2. 
3 **Number 3 • three**	The number 3 can be represented by a numeral, a number word and a collection of three objects.	✓ Recognise and write the numeral 3. ✓ Say and recognise the word three. ✓ Count collections of up to 3 accurately. ✓ Match 3 to a collection of 3.	– Count collections of 1, 2 and 3. – Match 3 to collections containing 3 objects. – Practise writing 3 and tracing three. – **Mathseeds lesson 3: Number 3**	**Page 4:** Trace and write 3 and three, identify pictures showing 3, and count small collections. 

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Unit: Number: Number structures: Numbers 1 to 3

Focus: Recognising, naming and representing the numbers 1, 2 and 3; counting small collections accurately using one-to-one correspondence; and connecting numerals, number words and quantities

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Recognising numerals	Students recognise the numerals 1, 2 and 3.	Identifies 1, 2 and 3 when shown in different contexts.
Number words	Students connect the words one, two and three with the matching numerals and quantities.	Says or identifies the correct number word for 1, 2 or 3.
Counting collections	Students count collections of up to 3 objects using one-to-one correspondence.	Touches or points to each object once and gives the correct total.
Matching number and quantity	Students match numerals to collections containing the same number of objects.	Selects or makes a collection that matches 1, 2 or 3.
Recording numbers	Students begin to form the numerals 1, 2 and 3.	Traces or writes numerals in recognisable form.

Assessment Opportunities

Assessment Type	Suggested Activity	What to Observe
Observation	Watch students count small groups of classroom objects.	Do they count each object once and know that the last number said tells how many there are?
Oral Check	Show a numeral or small collection and ask students to name the number.	Can they connect the numeral, spoken number name and quantity?
Practical Task	Ask students to make groups of 1, 2 and 3 using counters or familiar objects.	Can they make the requested quantity accurately without adding or missing objects?
Talk & Show	Ask students to choose a number card and show that number in another way.	Can they represent the same number using objects, fingers, pictures or words?

Oral Check Prompts

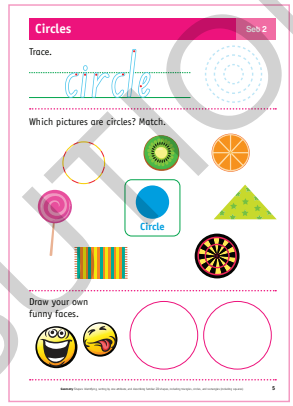
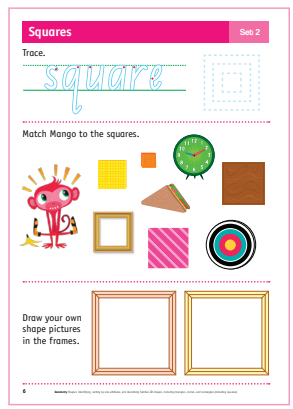
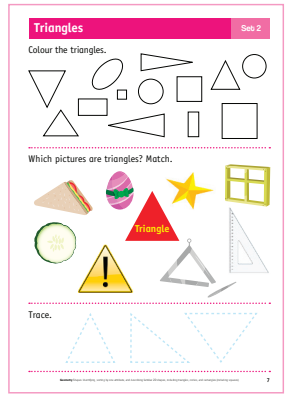
- Show me 2 counters. How do you know there are 2?
- What number is this? (show 3)
- Can you find a group that has 1 object?
- Make a group of 3. Count them for me.
- Which number word matches this group? (show a collection of 2)

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
How confidently did students recognise and name 1, 2 and 3?	
How accurately did students count small collections using one-to-one correspondence?	
How well did students connect numerals, number words and quantities?	
What aspects of counting and representing numbers need further practice or extension?	

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Block 1 Set 2 Overview Geometry: Shapes: Circles, squares and triangles

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Circles**	Circles can be identified by their shape in drawings and familiar objects.	✓ Identify a circle from a selection of shapes. ✓ Find familiar objects or pictures that are circular. ✓ Match pictures of circular objects to a circle. ✓ Use a circle as part of a simple drawing.	– Look at and name circles in familiar classroom objects and pictures. – Compare circular and non-circular shapes and talk about what students notice. – Sort or match pictures according to whether they are circles. – Draw simple pictures using a circle as the starting shape. – **Mathseeds lesson 4: Circles**	**Page 5:** Trace the word circle, identify and match pictures that are circles, then create funny faces inside circles. 
2 **Squares**	Squares can be identified by their shape in drawings and familiar objects.	✓ Identify a square from a selection of shapes. ✓ Find familiar objects or pictures that are square-shaped. ✓ Match pictures of square objects to a square. ✓ Use a square as part of a simple drawing.	– Look at and name squares in pictures and familiar objects. – Compare squares with shapes that are not squares and describe what students notice. – Sort or match pictures according to whether they are square-shaped. – Create simple shape pictures inside square frames. – **Mathseeds lesson 6: Squares**	**Page 6:** Trace the word square, match Mango to the squares, then draw shape pictures in square frames. 
3 **Triangles**	Triangles can be identified in different sizes and orientations and in familiar pictures and objects.	✓ Identify triangles from a mixed group of shapes. ✓ Recognise triangles when they are turned or shown in different ways. ✓ Match familiar pictures that contain a triangular shape. ✓ Trace triangles.	– Find and name triangles in a mixed collection of shapes. – Turn or reposition triangle shapes and discuss whether they are still triangles. – Sort or match pictures according to whether they show a triangular shape. – Trace and make triangles using drawing or simple materials. – **Mathseeds lesson 9: Triangles**	**Page 7:** Colour triangles in a mixed group of shapes, match pictures that are triangles, then trace triangles. 

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Unit: Geometry: Shapes: Circles, squares and triangles

Focus: Identifying and distinguishing familiar 2D shapes, particularly circles, squares and triangles, when shown on their own or represented in familiar pictures and objects

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Circles	Students recognise circles as a familiar 2D shape.	Identifies circles correctly in a mixed group and matches familiar circular pictures or objects.
Squares	Students recognise squares as a familiar 2D shape.	Identifies square-shaped pictures and objects and distinguishes them from non-squares.
Triangles	Students recognise triangles even when their size or orientation changes.	Selects triangles from a mixed group, including triangles that are turned or differently proportioned.
Shape recognition in context	Students can connect familiar 2D shapes with shapes seen in pictures and everyday objects.	Points to, names or matches circular, square and triangular features in familiar images.
Shape representation	Students can reproduce or use familiar shapes in simple drawings or tracing activities.	Traces triangles and uses circles or squares appropriately when creating simple pictures.

Assessment Opportunities

Assessment Type	Suggested Activity	What to Observe
Observation	Watch students as they sort, match, colour or trace shapes during practical and Student Book activities.	Do they select shapes accurately without relying on the position, colour or size of the example?
Oral Check	Show a circle, square or triangle and ask the student to name it and find another one.	Can the student use the correct shape name and recognise another example?
Practical Task	Provide a small mixed collection of circles, squares and triangles and ask the student to sort them.	Can the student group the shapes accurately and distinguish one shape from another?
Talk & Show	Ask the student to choose a shape and show another picture or object with the same shape.	Can the student connect the abstract shape with a familiar representation?

Oral Check Prompts

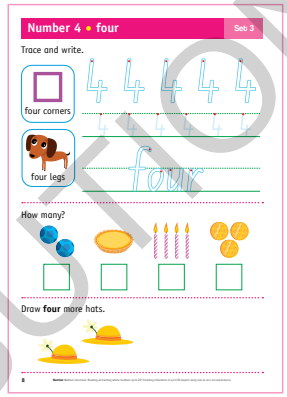
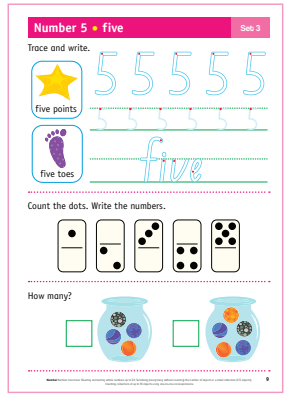
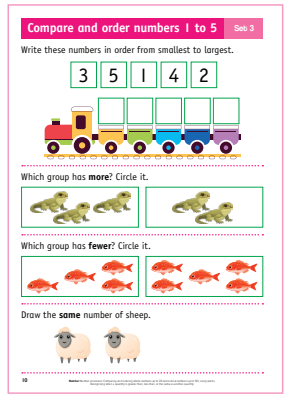
- Show me a circle. How did you know which one to choose?
- Can you find something here that is shaped like a square?
- Find a triangle that is turned a different way. Is it still a triangle?
- Which of these shapes are the same kind of shape? Show me.
- Choose a circle, square or triangle. Can you find a picture that matches its shape?

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
How confidently did students identify circles, squares and triangles in a mixed group?	
How well did students recognise shapes when their size or orientation changed?	
Did any students rely on colour, picture context or position rather than the shape itself?	
What aspects of recognising, comparing and describing familiar shapes need further practice or extension?	

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Block 1 Set 3 Overview Number: Number structures: Numbers to 5

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Number 4 • four**	The number 4 can be represented by a numeral, a number word and a quantity of four.	✓ Recognise the numeral 4. ✓ Say and recognise the word four. ✓ Count a collection of 4 objects accurately. ✓ Trace and form the numeral 4 and the word four.	– Count and make collections of up to 4 objects. – Match 4 and four to collections of four. – Compare small collections by counting each object once. – Practise forming 4 and tracing four. – **Mathseeds lesson 5: Number 4**	**Page 8:** Trace and write 4 and four, count small collections, and draw four more hats. 
2 **Number 5 • five**	The number 5 can be represented by a numeral, a number word and a quantity of five.	✓ Recognise the numeral 5. ✓ Say and recognise the word five. ✓ Count or recognise small collections up to 5. ✓ Record the number in a small collection using a numeral.	– Count and make collections of up to 5 objects. – Use familiar dot patterns to recognise small quantities. – Match 5 and five to collections of five. – Practise forming 5 and tracing five. – **Mathseeds lesson 7: Number 5**	**Page 9:** Trace and write 5 and five, count dot patterns and record the numbers, then count objects in each jar. 
3 **Compare and order 1 to 5**	Numbers 1 to 5 can be ordered, and quantities can be compared as more, fewer or the same.	✓ Order the numbers 1 to 5 from smallest to largest. ✓ Identify which of two groups has more. ✓ Identify which of two groups has fewer. ✓ Make a group with the same number of objects as another group.	– Order numeral cards 1 to 5 and say the sequence aloud. – Compare two small collections by matching or counting. – Use the words more, fewer and same to describe quantities. – Make a collection that has the same number as a given collection. – **Mathseeds lesson 10: Numbers 1–5 Revision**	**Page 10:** Order 1 to 5 from smallest to largest, compare groups using more and fewer, and draw the same number of objects. 

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Unit: Number: Number structures: Numbers to 5

Focus: Recognising, representing and counting the numbers 4 and 5; ordering numbers 1 to 5; and comparing small quantities using more, fewer and the same

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Numbers 4 and 5	Students recognise, represent and count the numbers 4 and 5 using numerals, number words and quantities.	Names or selects 4 and 5, matches each to a quantity, forms the numerals, and counts each object once to give the correct total.
Subitising small quantities	Students begin to recognise familiar small collections, including quantities from 3 to 5, without needing to count every object.	Recognises familiar dot arrangements or small collections quickly and accurately.
Ordering 1 to 5	Students understand the relative order of the numbers 1 to 5.	Places numerals 1 to 5 from smallest to largest without omitting or repeating a number.
Comparing quantities	Students understand that one group can have more, fewer or the same number as another group.	Identifies groups with more or fewer objects and makes an equal group when asked.

Assessment Opportunities

Assessment Type	Suggested Activity	What to Observe
Observation	Watch students count, order and compare small collections during practical and Student Book work.	Do they count each object once, keep the sequence in order and use comparison language accurately?
Oral Check	Show a numeral, dot pattern or two collections and ask the student to name, count or compare them.	Can the student connect numeral and quantity, and use more, fewer or same correctly?
Practical Task	Ask the student to make a collection of 4 or 5 objects and order numeral cards 1 to 5.	Can the student make the requested quantity and order the numerals independently?
Talk & Show	Ask the student to choose 1 to 5, show it with objects, then compare it with another collection.	Can the student connect what they say and show, and identify more, fewer or the same?

Oral Check Prompts

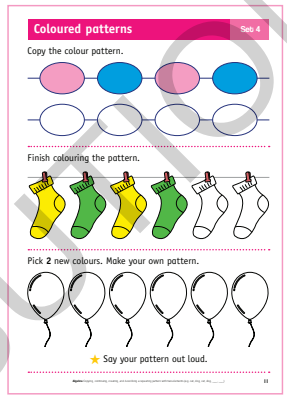
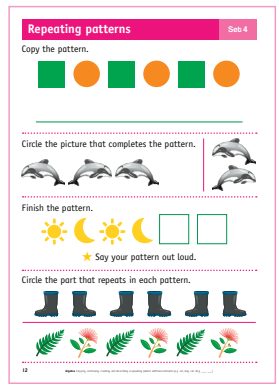
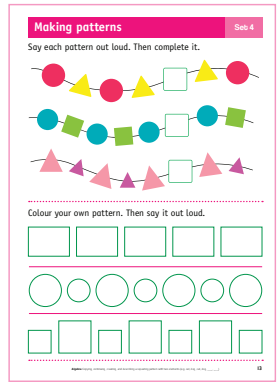
- Show me 4 counters. How do you know there are 4?
- What number is this? (show 5) Can you show 5 in another way?
- How many dots can you see? How did you know?
- Put these numbers in order from smallest to largest: 3, 5, 1, 4, 2.
- Which group has fewer? Can you make another group with the same number?

Teaching as Inquiry: Reflection Notes

Reflection Prompts	Notes/Next Steps
How confidently did students recognise, represent and count 4 and 5?	
How accurately did students order numbers from 1 to 5?	
How well did students compare small quantities using more, fewer and the same?	
What aspects of numbers to 5 need further practice or extension?	

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Block 1 Set 4 Overview Algebra: Repeating patterns

Lesson & Topic	Learning Intention	Success Criteria	Main Activities	Student Book Practice
1 **Coloured patterns**	A repeating pattern follows a rule in which a group of elements repeats in the same order.	✓ Copy a two-element repeating pattern. ✓ Continue a repeating pattern correctly. ✓ Create a repeating pattern using two colours. ✓ Say the repeating pattern aloud.	– Make simple colour patterns with counters, blocks or cards. – Copy and continue two-element patterns together. – Identify the part of a pattern that repeats. – Create a two-colour pattern and describe it aloud. – **Mathseeds lesson 27: Patterns**	**Page 11:** Copy and continue colour patterns, then choose two colours to create and say a repeating pattern. 
2 **Repeating patterns**	The repeating part of a pattern can be identified and used to predict what comes next.	✓ Copy a two-element repeating pattern. ✓ Choose the element that completes a pattern. ✓ Continue a repeating pattern. ✓ Identify the part that repeats.	– Build repeating patterns with shapes, objects or movements. – Pause a pattern and predict what comes next. – Compare examples and identify the repeating unit. – Say patterns aloud to hear the repeating structure. – **Mathseeds lesson 37: Patterns 2**	**Page 12:** Copy and complete repeating patterns, then circle the part that repeats in each pattern. 
3 **Making patterns**	Repeating patterns can be completed, created and described using a consistent rule.	✓ Complete a two-element repeating pattern. ✓ Use the pattern rule to predict a missing element. ✓ Create a repeating pattern. ✓ Describe the pattern aloud.	– Read patterns aloud using simple labels such as circle, triangle or big, small. – Find and fill missing elements in repeating patterns. – Create patterns using shapes, colours, objects or movements. – Share a pattern and explain what repeats.	**Page 13:** Say and complete repeating shape patterns, then colour and describe original repeating patterns. 

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Unit: Algebra: Repeating patterns

Focus: Copying, continuing, creating and describing two-element repeating patterns; identifying the repeating unit; and using the pattern rule to determine what comes next or what is missing

Key Understandings to Assess

Area	Expected Understanding	Evidence to Look For
Copying and continuing patterns	Students recognise the rule in a two-element repeating pattern and continue it in the same order.	Copies or extends a two-element repeating pattern accurately without changing the order of the elements.
Predicting pattern elements	Students use the repeating rule to decide what comes next or which element is missing.	Selects or supplies the correct next or missing element and can show the repeating sequence.
Unit of repeat	Students recognise the group of elements that repeats in a pattern.	Points to or marks the smallest repeating part of a simple two-element pattern.
Creating and describing patterns	Students create a two-element repeating pattern and describe it using words, gestures or object names.	Makes a consistent repeating pattern and says the pattern aloud in a way that matches what is shown.

Assessment Opportunities

Assessment Type	Suggested Activity	What to Observe
Observation	Watch students copy, continue and create patterns with colours, shapes, objects or movements.	Do they maintain the repeating order and notice when the pattern rule changes?
Oral Check	Show a simple repeating pattern, pause it and ask what comes next and why.	Can the student use the visible pattern to predict the next element and describe what repeats?
Practical Task	Give two types of objects and ask the student to make and continue a repeating pattern.	Can the student independently create a consistent two-element repeating pattern?
Talk & Show	Ask the student to point to the part that repeats and say the pattern aloud.	Can the student connect the repeating unit with the whole pattern they can see or make?

Oral Check Prompts

- What comes next in this pattern? How do you know?
- Can you copy this pattern and keep it going?
- Show me the part of the pattern that repeats.
- What is missing here? What helped you work it out?
- Make your own pattern with these two objects. Can you say your pattern aloud?

Teaching as Inquiry: Reflection Notes

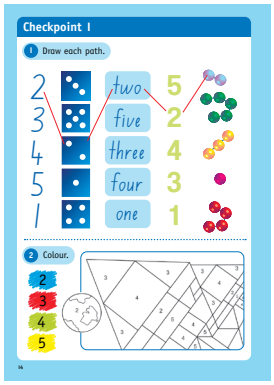
Reflection Prompts	Notes/Next Steps
How confidently did students copy and continue a two-element repeating pattern?	
How well did students identify the repeating unit and use it to predict a missing or next element?	
Were students able to create a consistent repeating pattern and describe it aloud?	
What aspects of recognising, continuing and creating repeating patterns need further modelling, practice or extension?	

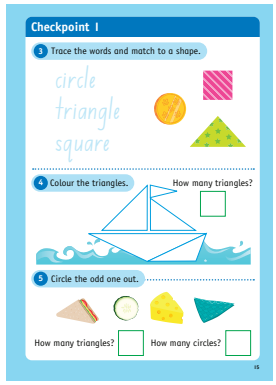
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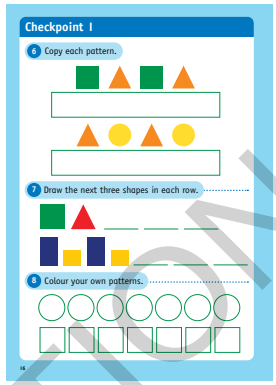
SET 5 • CHECKPOINT 1

Purpose

This checkpoint assesses students' understanding of number representations, familiar 2D shapes and repeating patterns developed across Block 1. It provides evidence of whether students can connect numerals, number words and quantities; recognise and classify shapes; and copy, continue and create simple patterns. Instructions may be read aloud and the checkpoint may be completed in short sittings. Observe students' strategies as well as their recorded responses.







Assessment Overview

Area	Focus	Curriculum Links	Key Skills Assessed
Number	Represent and match numbers	Number: Number structures	Matching numerals, number words and quantities
Number	Recognise numerals in a visual task	Number: Number structures	Accurate numeral recognition
Geometry	Recognise and name familiar shapes	Geometry: Shapes	Matching shape names to shapes
Geometry	Identify and classify shapes	Geometry: Shapes	Recognising, sorting and counting circles and triangles
Algebra	Copy, continue and create repeating patterns	Algebra: Patterns	Recognising a repeating unit; reproducing, continuing and creating patterns

Checkpoint 1 Structure

Part	Focus	Questions / task	Skills Tested
1	Number representations	Draw paths to match numerals, number words and quantities.	Connect different representations of the same number.
2	Number recognition	Colour sections according to the numeral key.	Recognise numerals accurately within a visual task.
3	Shape recognition	Trace shape words and match each word to a shape.	Recognise and name a circle, triangle and square.
4	Triangles	Colour the triangles and record how many there are.	Identify triangles in different sizes and orientations; count the total.
5	Shape classification and counting	Circle the odd one out, then record the number of triangles and circles.	Classify familiar shapes and count members of each group.
6	Copy patterns	Copy two repeating shape patterns.	Recognise and reproduce a repeating unit.
7	Continue patterns	Draw the next three shapes in each row.	Identify the repeating unit and continue the pattern.
8	Create patterns	Colour the shapes to make their own patterns.	Create a repeating pattern independently.

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SET 5 • CHECKPOINT 1 Student Recording Sheet & Achievement Rubric

Unit: Number structures, Geometry: Shapes, Algebra: Repeating patterns

Block 1: Sets 1–4 / Year 0 Mathematics **Total Marks:** 22

Student Name: **Date:**

Marking Sheet

Part	Task	Max Marks	Student Score	Notes / Observations
1. Draw each path	Complete the four remaining pathways. 1 mark for each numeral correctly matched to its number word and quantity.	4	/ 4	
2. Colour	Colour each numeral set using the key. 1 mark for each of the four numeral sets coloured correctly. Ignore colouring neatness.	4	/ 4	
3. Match shapes	Match circle, triangle and square to the correct shape. 1 mark for each correct match.	3	/ 3	
4. Triangles	Colour all the triangles correctly (1) and record the correct total (1).	2	/ 2	
5. Odd one out / count	Circle the odd one out (1), record the correct number of triangles (1) and circles (1).	3	/ 3	
6. Copy patterns	Copy each of the two repeating patterns correctly. 1 mark per pattern.	2	/ 2	
7. Continue patterns	Draw the next three shapes correctly in each of the two rows. 1 mark per completed pattern.	2	/ 2	
8. Create patterns	Create a clear repeating pattern in each of the two rows. 1 mark per pattern.	2	/ 2	
	TOTAL:	22	/ 22	

Achievement Rubric

Score Range	Progress Descriptor	Interpretation	Suggested Follow-Up
20–22	Exceeding	Accurate, confident understanding across number representations, familiar shapes and repeating patterns. Completes almost all tasks independently and applies the learning consistently.	Extend with larger number representations, sorting and describing a wider range of shapes, and creating more complex repeating patterns.
17–19	Proficient	Secure understanding of the assessed concepts with only occasional errors. Usually works independently and shows clear recognition of numbers, shapes and repeating patterns.	Reinforce any isolated errors through brief number matching, shape identification or pattern activities.
12–16	Consolidating	Shows developing understanding but is inconsistent across some tasks or needs occasional prompting to apply the skills accurately.	Revisit the areas where marks were lost using concrete materials, oral matching, shape sorting and practical pattern work.
7–11	Developing	Partial understanding of the assessed concepts and requires regular support to complete several tasks successfully.	Provide explicit modelling and repeated hands-on practice with number representations, familiar shapes and simple repeating patterns.
0–6	Emerging	Beginning to demonstrate the assessed learning and needs substantial support across most tasks.	Return to small-number matching, naming and sorting familiar shapes, and copying simple AB patterns using concrete materials.

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