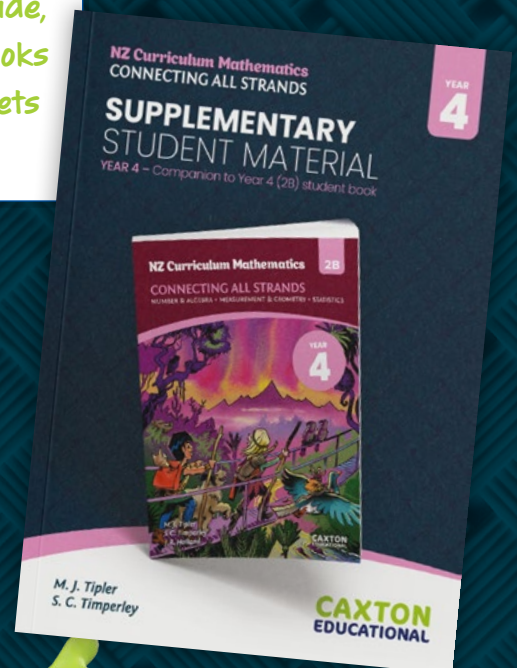


We've got the NEW 2024 Mathematics + Statistics curriculum covered!

COMPREHENSIVE TEACHER MAPPING GUIDE



All you need is this **mapping guide**,
the **Connecting All Strands** books
with the **Supplementary** booklets
to fully cover the curriculum.



Maryanne Tipler
Susan Timperley
& Jenny Holland

CAXTON
EDUCATIONAL

TEACHER MAPPING GUIDE

A full detailed guide connecting **every** objective in the **2024 New Zealand Curriculum for Mathematics and Statistics for Years 3–8**. It covers both the Caxton Educational New Zealand Mathematics **Connecting All Strands** student books Years 3–8 (2A, 2B, 3A, 3B, 4A and 4B) and each companion Supplementary Student Books (Years 3–8).

HOW TO USE OUR GUIDE

Column one lists the objectives from the 2024 Mathematics and Statistics curriculum.

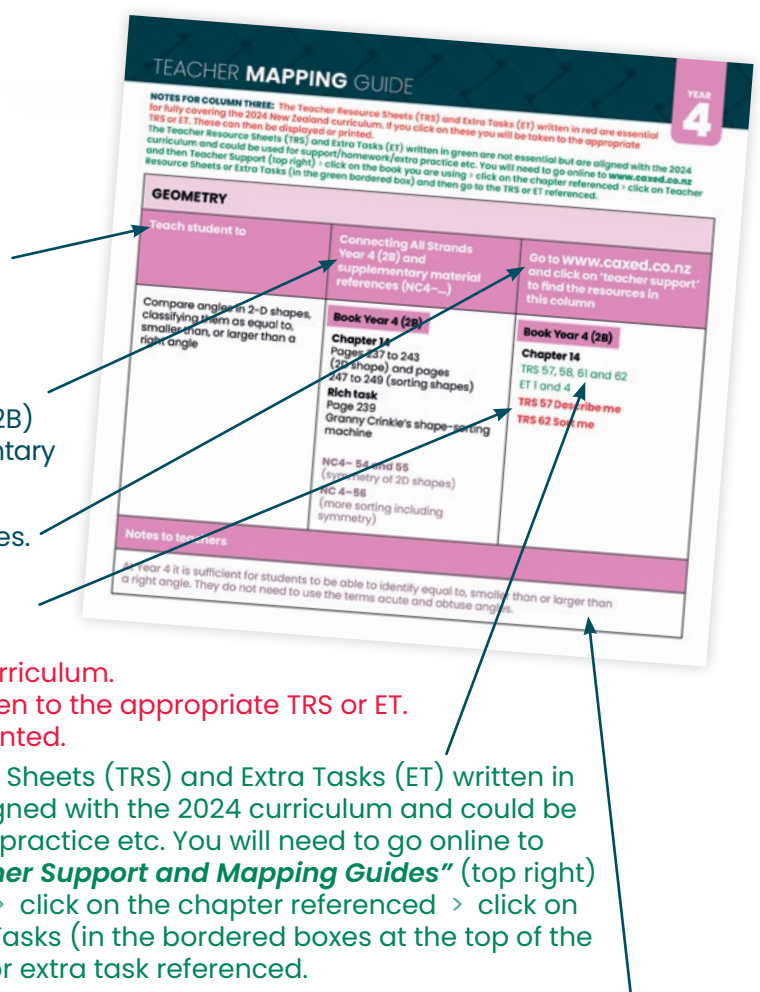
Column two gives you the page references from our existing Year 4 (2B) student book and from our supplementary student book (numbered NC4–...).

Column three lists our online resources.

Red text: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

Green text: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “**Teacher Support and Mapping Guides**” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

Notes to teachers (purple text) are under the three columns and give notes and also links (in red) to our existing online teacher notes, where applicable.



NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER NUMBER STRUCTURE		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
skip count from any multiple of 100, forwards or backwards in 25s and 50s	NC4–1 (counting in 50s and 25s)	
Notes to teachers		
1 This sheet concentrates on counting in 25s and 50s but practice counting in 2s, 3s, 4s, 5s, 6s and 10s is also useful. 2 Asking students to sit in a circle and skip count can be turned into a game where if you pass or get an answer wrong, you are out. 3 You could record the choral counting on the board and ask students to identify patterns. Also ask students to identify and generalise patterns in the hundreds board and thousands book such as when counting in 50s, the numbers all end in 50 or 00. Counting in 25s the numbers all end in 25, 50, 75 or 00.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER NUMBER STRUCTURE		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
Identify, read, write, compare, and order whole numbers up to 10,000, and represent them using base 10 structure	Book Year 4 (2B) NK 1 Pages 17 to 24 (place value) NK 2 Pages 25 to 27 (nested place value) NK 8 Pages 49 to 52 (ordering whole numbers up to 1000)	Book Year 4 (2B) NK 1 Place Value ET 3 Random rattle – game NK 8 Ordering whole numbers TRS 101 Will it help you? ET 1
Notes to teachers		
For NK 1 - It is important to make the connection between place value and measurement so that students understand that all of our measurements use the decimal number system so are in 10s, 100s and 1000s. 1 cm = 10 mm 1 m = 100 cm 1 km = 1000 m 1 kg = 1000 g 1 L = 1000 ml - Converting between these units is covered later in the curriculum. Link to online teacher notes for NK 1 FOR NK 2 Using nested place value helps students to rename numbers. They can find the number of ones, tens, hundreds and thousands in a number. This is useful when subtracting numbers where you have to rename to be able to subtract. For NK 8 - When ordering numbers, encourage students to start from the digit closest to the right of the number and work towards the left. - Don't always give students numbers with the same number of digits to order. This helps them become aware of the value of the place as well as of the digit. For extra practice, if you have our Stage books you could use Stage 6 NK A pages 208 and 209		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER OPERATIONS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
- use rounding and estimation and inverse operations to predict results and to check the reasonableness of calculations - round whole numbers to the nearest thousand, hundred, or ten	NC4–2 to 4 (rounding to the nearest 10, 100 or 1000) NC4–5 (estimating answers) NC4–6 (estimating using benchmarks) NC4–7 (checking answers using inverse operations)	Book Year 4 (2B) Chapter 5 TRS 18
Notes to teachers		
For NC4–2 to 6 - Use the sheets in the order that they are given in column two. - Number lines are the best way to help students understand rounding. - Discuss with students where rounding and estimating might be helpful in everyday life and how rounding to tens, hundreds or thousands affects the precision of a calculation. For example, rounding up the cost of groceries means you can be sure you will have enough to pay for them when you get to the check out. Rounding to the nearest \$1 is helpful in this situation but rounding to the nearest \$100 is not. Rounding can also be helpful for checking whether an answer is reasonable. - When using benchmarks to estimate you could use some everyday examples from your environment such as weather data. For example: yesterday’s maximum temperature was about $\frac{1}{2}$ of today’s (if, for example, it was 9 degrees yesterday and 5 today); or, last year nearly double the number of new entrants started school than at the beginning of this year. You could also look at how news articles report numbers, for example, “Nearly 500 new homes built since January”. Discuss what this means. Did they round to the nearest 100 or nearest 10 or did they round all the numbers built in various areas to the nearest 10 and then add them together? For extra practice, if you have our Stage books you could use Stage 5 Chapter 14 pages 88 and 89 For NC4–7 - Ask students to write families of facts to reinforce how multiplication and division are related. For example, if they are asked to find the answer to $72 \div 8$ they can use the known fact $8 \times 9 = 72$ and work backwards. - Encourage students to work backwards to check answers. For example, if they have worked out the answer to $91 \div 3$ as 31 they can find the answer to 3×31 to check. For extra practice at family of facts, if you have our Stage books you could use Stage 4/5 page 146– 147 and 253 or Stage 5 page 148		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER OPERATIONS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
add and subtract two and three digit numbers	Book Year 4 (2B) Chapter 1 Pages 53 to 64 (whole chapter) (adding and subtracting using tens numbers) Chapter 2 Pages 65 to 74 (whole chapter) (adding and subtracting using place value partitioning) Chapter 4 Pages 85 to 94 (whole chapter) (adding and subtracting practice) NC4–8 (adding and subtracting using the vertical method)	Book Year 4 (2B) Chapter 2 TRS 6, 7 and 8 ET 3, 5 and 6 Chapter 4 TRS 13 ET 1, 2 and 3
Notes to teachers		
- In the new curriculum there is less emphasis on teaching specific strategies and then practising them to add and subtract and more emphasis on building towards using vertical methods. You could miss out some of the questions that refer to strategies that do not involve using a number line or partitioning to avoid cognitive overload. - Whilst the objective says two- and three- digit numbers you may wish begin by using the questions with one-digit numbers to revise or scaffold student learning. - Use “think alouds” when using Chapter 4 to help students decided on the most efficient approach to answer questions. - The curriculum language requirement is that you use the word “addend” for a number that is being added on. Link to online teacher notes for Chapter 1 Chapter 2 Chapter 4		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER OPERATIONS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
Recall multiplication and corresponding division facts for 4s and 6s	NC4–9 to 15 (multiplication and division basic facts) NC4–16 (games for practising tables)	Book Year 5 (3A) NK 8 TRS 81 Flash card practice
Notes to teachers		
Students need to know their multiplication and corresponding division facts for 2s, 3s, 4s, 5s, 6s and 10s. Frequent/daily practice with games and using online sites is the best way to help these facts move from short-term memory to long-term memory.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER OPERATIONS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
multiply a two-digit by one-digit number and two one-digit whole numbers (e.g 23×5 , 7×8)	NC4– 17 to 19 (multiplying 10s) NC4–20 to 23 (multiplication strategies) NC4– 24 to 26 (multiplying by a one-digit number)	Book Year 5 (3A) Chapter 4 ET 1 The Wildlife (extension) ET 2
Notes to teachers		
- If students need practice at their multiplication basic facts, use sheets NC4–9 to 15. Then use the sheets in the order they are given in column two. - Students need to know the commutative property. For example, that $3 \times 8 = 8 \times 3$ - Connect multiplication with skip counting, using jumps on a number line or arrays - Represent division using diagrams and equal sharing, connecting with known families of facts - If students are competent at multiplying tens you could leave out sheets NC4–17 to 19. NC4–24 to 26 address the objective and use place value partitioning and the area method. Working with materials, such as place value blocks, can be used to show that when multiplying, for example, 8×7, the 7 can be split into $5 + 2$. Make sure students know the reason for this is that they should know their 5s and 2s basic facts. Point out that the easiest way to find the answer is by knowing their 8s or 7s facts. Many students will not yet know these. - When working on NC4–24 to 26 encourage students to split one number into two numbers for which they know their basic facts or tens numbers such as 10, 20, 30 ... etc. - Students need to know their multiplication facts for 2s, 3s, 4s, 5s, 6s and 10s. Frequent/daily practice with races, games and using online sites is the best way to help these facts move from short-term memory to long-term memory. - Point out to students that multiplication and division are used in measurement situations such as converting between units, multiplying amounts, perimeter, area and volume etc - The distributive property is where a bracket with an addition or subtraction is being multiplied by a number. The two numbers being added or subtracted can be multiplied separately before adding or subtracting the results. Example $4 \times (3 + 5) = (4 \times 3) + (4 \times 5) = 12 + 20 = 32$ This is sometimes referred to as splitting one of the numbers. Encourage students to look for ways to spit one of the numbers so that it results in multiplications they know. For extra practice and extension, if you have our Stage books you could use Stage 7 book 1 pages 106 and 107		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER OPERATIONS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
Divide up to a three-digit whole number by a one-digit divisor, with no remainders (e.g. $65 \div 5$)	Book Year 4 (2B) Chapter 6 Pages 119 to 127 (dividing) NC4–7 to 13 (basic facts practice) NC4–27 and 28 (dividing by a one-digit number)	Book Year 4 (2B) Chapter 6 TRS 21 ET 1, 2, and 3 Book Year 5 (3A) Chapter 5 TRS 24, 26, 27, 28 and 29 TRS 25 Benny’s bones
Notes to teachers		
1 Use the material in the order in which it is given in column two. If students know their basic facts then you could omit NC4–7 to 13 especially if it has been done in the previous objective. 2 Encourage students to use families of facts to help solve division problems. 3 Remind students that they can check their division answers using multiplication. Refer to families of facts. Link to online teacher notes for Chapter 6 (all sections except ‘Remainders’)		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
identify, read, write, and represent tenths as fractions and decimals	NC4–29 to 31 (tenths as decimals and fractions)	
Notes to teachers		
- Point out to students how this objective is connected to measurement, for example, 1 mm is $\frac{1}{10}$ of a cm. Rulers are divided into cm which are then divided into tenths (mm) or 0.1s - Use place value houses, diagrams and number lines to show how fractions and decimals align with each other. - Fractions and decimals are different ways of describing parts of a whole. For every decimal there is a fraction of equal value. - Remind students about where decimals are used in everyday life such as measurements in sports day.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
compare and order tenths as fractions and decimals, and convert decimals to fractions (e.g. $0.3 = \frac{3}{10}$)	NC4–32 (comparing tenths using fractions and decimals)	
Notes to teachers		
A number line is very useful to show the connection between fractions and decimals. Place value houses can also be used to show that $\frac{1}{10}$ as a decimal is 0.1 and $\frac{2}{10}$ is 0.2 etc		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
divide whole numbers by 10 to make decimals	NC4–33 (dividing by 10 to make decimals)	
Notes to teachers		
1 Show students that each place moved to the right on a place value house is ten times smaller. 10 is ten times smaller than 100 and 1 is ten times smaller than 10 and 0.1 is ten times smaller than 1. Multiplying by 10 moves each digit in a number one place to the left (increasing the place value of each digit), and dividing by 10 moves each digit one place to the right (decreasing the place value of each digit). 2 Explain that our measurement system is based on place value, for example, 1 mm is ten times smaller than 1 cm and 1 cm is ten times smaller than 1 m etc. 3 Being able to divide by 10 is useful when converting between measures.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
for fractions with related denominators of 2, 4, and 8, 3 and 6, or 5 and 10: – compare and order the fractions – identify when two fractions are equivalent, by directly comparing them, noticing the simplest form (e.g. $\frac{3}{6} = \frac{1}{2}$, which is the simplest form)	Book Year 4 (2B) NK 11 Pages 141 to 144 (understanding fractions and ordering unit fractions) Chapter 8 Pages 159 to 161 (ordering fractions) NC4–34 and 35 (equivalent fractions) NC4–36 (simplifying fractions)	Book Year 4 (2B) Chapter 8 TRS 31 Fractions on number lines ET 5 and 6
Notes to teachers		
1 Use the material in the order that it is listed in column two. 2 NK 11 reminds students of what fractions are, the terminology we use and how to order unit fractions. 3 Use fraction walls to show how fractions can be simplified, pointing out the relationship between the numerators and denominators of the original and the simplified fraction. For example, the numerator and denominator might both be halved or both divided by 4. Link to online teacher notes for NK 11 Chapter 8 (Ordering fractions page 159)		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
convert, using number lines, between improper fractions and mixed numbers for fractions with denominators of 2, 3, 4, 5, 6, 8 and 10	Book Year 4 (2B) Chapter 8 Pages 152 and 153 (improper fractions and mixed numbers) NC4–37 and 38 (improper fractions and mixed numbers)	Book Year 4 (2B) Chapter 8 TRS 28 ET 1
Notes to teachers		
1 Use the material in the order in which it is listed in column two. 2 Students need to know that when any fraction has the same numerator and denominator it equals one whole. This makes it easier to appreciate that when the numerator is larger than the denominator the fraction will be larger than 1. 3 At this point, students often become aware for the first time that a fraction can lie anywhere on a number line and not only between zero and one. The use of area models, fraction circles and number lines are particularly helpful tools to develop this understanding. 4 When students skip count in fractions, for example, one quarter, two quarters, three quarters, four quarters, five quarters, six quarters and so on it helps them understand that once they pass four quarters they have a fraction greater than 1. For extra practice, if you have our Stage books you could use Stage 5 page 178 question 7 and question 8.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
find a unit fraction of a whole number, using multiplication or division facts and where the answer is a whole number (e.g. $\frac{1}{5}$ of 40)	Book Year 4 (2B) Chapter 8 Pages 148 to 151 (fractions of sets) and 157 to 158 (fractions of sets and regions) NC4–39 and 40 (Finding whole sets from fractions of sets)	Book Year 4 (2B) Chapter 8 TRS 27 and 30 ET 3 Book Year 3 (2A) Chapter 8 TRS 31 ET 4
Notes to teachers		
Link to online teacher notes on Chapter 8 (Fractions of sets page 148) and (Fractions of sets and regions page 157) For NC4–39 and 40 - Students who can confidently recall that the denominator shows the number of pieces in the whole have the knowledge needed to unlock this type of problem. - If students can use a fraction to find the whole of a shape, this can be used as a scaffold for finding the whole of a set, for example by solving 3 candles on $\frac{1}{4}$ of a cake to give 12 candles on the whole cake. A practical activity where students are given some shapes and told that it is $\frac{1}{2}$ of the shape or $\frac{1}{4}$ of the shape and are asked to make the whole shape can help with understanding.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
add and subtract fractions with the same denominators to make up to one whole (e.g. $\frac{3}{8} + \frac{3}{8} + \frac{2}{8} = \frac{8}{8} = 1$)	Book Year 4 (2B) Chapter 8 Page 162 (fractions that add to a whole) NC4– 41 (adding and subtracting fractions)	Book Year 4 (2B) Chapter 8 TRS 32 ET 7
Notes to teachers		
- Knowing that the denominator indicates the number of parts in the whole and that this doesn't change when we add pieces together is key to understanding how to add and subtract fractions with the same denominator. - Diagrams or concrete materials such as fraction walls, fraction tiles and number lines are the best way to illustrate this concept.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
add and subtract decimals to one decimal place (e.g. $1.3 + 0.2 = 1.5$)	NC4–42 to 44 (adding and subtracting decimals)	
Notes to teachers		
1 Link this to measurement as this is the most common place in real life that decimals are added. 2 Remember to use our online generic printable masters for decimal number lines so students do not have to draw them for questions 3 to 9. Scroll to the bottom of the page for the generic printable masters. 3 You may need to revise decimal place value so that students understand the decimal point notation. 4 Connect tenths as fractions with tenths as decimals. 5 It is important that students understand why decimal points have to be lined up. It is best to use a place value house to illustrate why. 6 Link this to adding and subtracting whole numbers.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
use doubling or halving to scale a quantity (e.g. to double or half a recipe)	Book Year 4 (2B) NK 5 Pages 39 to 42 (doubles and halves) NC4–45 (using doubling and halving to scale)	
Notes to teachers		
- Students usually have little difficulty halving numbers with even digits. Using place value equipment will support students understanding of halving odd numbers. - When doubling or halving fractions, a diagram of the fraction may be helpful. For example in NC4–45 students have to double $2\frac{1}{2}$. This could be drawn as two circles and a half circle. Doubling this is then much easier. - Multiplicative relationships can be illustrated using materials and bar models. For extra practice, if you have our Stage books you could use Stage 5 page 255 to 258		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER RATIONAL NUMBERS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
make amounts of money using dollars and cents (e.g. to make 3 dollars and 70 cents)	NC4–46 (money)	Play money Note: scroll down to the bottom of the page for the generic printable masters for play money.
Notes to teachers		
1 Using actual play money may be useful when students fill in charts in questions 1 and 2 of NC4–46 . 2 Have students practise grouping denominations, making amounts using play money and connecting this with place value (our monetary system is based on place value), skip counting (for example, if there are 6 \$2 coins then skip counting in 2s can help find the total) and multiplication (for example, if there are four \$5 notes then $4 \times \$5 = \20).		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

NUMBER FINANCIAL MATHEMATICS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
estimate and calculate the total cost and change for items costing whole dollar amounts	NC4–47 (giving change)	
Notes to teachers		
1 Play money is useful when students work out what change to give. 2 To extend this topic further you could set up a play shop and have students “buy” things and give change. Investigate other practical situations involving money.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

ALGEBRA EQUATIONS & RELATIONSHIPS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
form and solve true or false number sentences and open number sentences involving multiplication and division, using understanding of the equal sign (e.g. $5 \times \underline{\quad} = 20$; $\underline{\quad} \div 3 = 6$)	NC4–48 (number sentences) Book Year 4 (2B) Chapter 9 Pages 172 to 173 (solving equations) Rich task Page 165 (What number am I?)	
Notes to teachers		
1 Use the material in the order in which it is listed in column two. The material in book Year 4 (2B) is useful if you want more practice solving equations. 2 Students need to understand that equals means that both sides of the equals sign have the same value. Sometimes students think “equals” means “find the answer” or similar. 3 Correct setting out of equations and the use of the equals sign is important. Students should be encouraged to check that what they have written makes mathematical sense. For example, $2 \times \underline{\quad} = 12$. So $2 \times \mathbf{6} = 12$, and not $2 \times \underline{\quad} = 12 = 6$. 4 Students need to know their basic facts to be able to quickly work out the answers to the activity.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

ALGEBRA EQUATIONS & RELATIONSHIPS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
recognise and describe the rule for a growing pattern using words, tables, and diagrams, and make conjectures about further elements in the pattern	Book Year 4 (2B) Chapter 10 Pages 184 to 188 (growing patterns)	Book Year 4 (2B) Chapter 10 TRS 41 ET 3
Notes to teachers		
- When asking students about the future elements in a growing pattern, use the word “conjecture” and ask questions such as “Make a conjecture about what the 10th term might be and explain your reasoning.” - Ask students to use the word relationship when describing how the term number and the term are related to each other. For example “The number of dots is three times the number of bricks” etc Link to online teacher notes on Chapter 10 (Growing patterns page 184)		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

ALGEBRA ALGORITHMIC THINKING		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
create and use an algorithm for generating a pattern or pathway	NC4–49 and 50 (algorithms)	
Notes to teachers		
1 An algorithm is a sequence of step by step instructions for carrying out a procedure, sorting, drawing something or moving through a maze, etc. Once students understand how to put together one of these algorithms you could get them to choose an activity relevant to themselves and create an algorithm for it. They could then share this with the rest of their group or class and see if everyone agrees that all the steps and decisions have been included. They could follow the sequence of the algorithm by “acting it out” or they could do this in reverse and act out something and ask their partner or group to describe and record each step to create a flow chart. 2 Have students explain and justify how a procedure has been broken into steps, the order of the steps, whether there were any errors or omissions, and, if so, how they were corrected. 3 The steps for written addition and subtraction can be written as an algorithm. You could work with students to create an algorithm with decision points for either written addition or written subtraction.		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

MEASUREMENT MEASURING		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
- measure body parts (e.g. the arm) or familiar objects and use these as benchmarks to estimate and then measure length, mass (weight), capacity, and duration, using appropriate metric or time-based units - use appropriate units to describe length, mass (weight), capacity, and time - use the metric measurement system to explore relationships between units - recognise that angles can be measured in degrees, using 90, 180, and 360 degrees as benchmarks	Book Year 4 (2B) Chapter 11 Pages 189 to 210 (whole chapter) (measures) NC4–51 (reading scales to the nearest 10 or 100) NC4–52 and 53 (angles and turns)	Book Year 4 (2B) Chapter 11 TRS 42, 43, 44, 45, 46 and 47 TRS 49 Half or quarter turns ET 1, 2, 3, 4, 5, 6 and 8
Notes to teachers		
- Use the material in the order in which it appears in column two. - The “duration” and time part of these objectives is covered in a later section. - Reading decimal scales was covered in the objective on tenths as decimals and if you wanted to repeat it, the practice is on NC4–29 to 31. - Connect reading scales to the nearest ... with rounding. - Explain benchmarks and prompt students to develop them (e.g. “A big step is about a metre, so roughly how long is the corridor?”) - Explain and justify the use of appropriate metric units and tools for measuring a given attribute with the precision necessary for the problem, noting that using smaller units provides more accuracy. Link to online teacher notes on Chapter 11 (all sections)		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

MEASUREMENT MEASURING		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
tell the time to the nearest 5 minutes, using the language of minutes past the hour and to the hour	Book Year 4 (2B) Chapter 13 Pages 221 to 232 (Time)	Book Year 4 (2B) Chapter 13 TRS 53 and 54 ET 1, 2, 3, 4 and 5
Notes to teachers		
- Many students, while aware of what an analogue clock looks like, will not have used an analogue clock to tell the time. They will need to be instructed on the positions of the hour and minute hands and their relationship to the 12 hour and 60 minutes intervals and that 60 minutes is divided into twelve 5-minute intervals. - There are many analogue clocks used in public areas so students should be made aware of the importance of being able to use them to tell the time. - Dividing the clock face into 4 quarters allows for the language of quarter past the hour, half past the hour and quarter to the hour to be used. This can then be extended to include all the minutes in between, for example, 10 past and 5 to the hour. Link to online teacher notes on Chapter 13 (Time – every section of the teacher notes is relevant)		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

MEASUREMENT PERIMETER, AREA AND VOLUME		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
visualise, estimate, and calculate: – the perimeter of polygons using metric units – the area of shapes covered with squares or half squares – the volume of shapes filled with centicubes, taking note of layers and stacking	Book Year 4 (2B) Chapter 12 Pages 211 to 220 (whole chapter) (perimeter, area and volume)	Book Year 4 (2B) Chapter 12 TRS 50 TRS 51 Picnic blanket TRS 52 Filling the picnic basket ET 1, 2 and 5 ET 3 12 Tiles ET 4 Cubes Book Year 5 (3A) Chapter 13 TRS 52, 53 and 54 ET 3 and 4
Notes to teachers		
1 Link finding the perimeter of shapes with addition and multiplication. Some students may notice a link between multiplication and area and volume but it is not required learning at this year level. 2 Remind students that they must add together ALL the sides of a shape to find its perimeter and that sometimes not all lengths are shown. For example, for a rectangle they may only give the length of two of the sides but that the other two sides will be the same lengths as the two already given. 3 Area is measured in square units. It is important that students understand why squares are good units to measure area, i.e. squares of the same size do not have any gaps when placed next to each other. When counting squares, it is better to count all the whole squares first and then the half squares before adding the two totals together. Getting students to use square tiles or squared paper to measure the area of everyday items aids understanding. 4 Practicals that use smaller cubes to exactly fill cubes and cuboids helps students understanding of volume. They should be encouraged to find the number of cubes that fill the base and then count the number of layers. They could then use multiplication to find the volume. While finding the volume of a cuboid using a formula is not required at this year level this will help scaffold to find the total number of cubes using multiplication in later years. Link to online teacher notes on Chapter 12 (Perimeter, area and volume – every section of the teacher notes is relevant)		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

GEOMETRY SHAPES		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
- identify, classify, and describe the attributes of polygons (including triangles and quadrilaterals) using properties of shapes, including line and rotational symmetry - compare angles in 2-D shapes, classifying them as equal to, smaller than, or larger than a right angle	Book Year 4 (2B) Chapter 14 Pages 237 to 243 (2D shape) Pages 247 to 249 (sorting shapes) Rich task Page 239 Granny Crinkle’s shape-sorting machine NC4–54 (line symmetry of 2D shapes) NC4–55 (rotational symmetry) NC 4–56 (more sorting including symmetry)	Book Year 4 (2B) Chapter 14 TRS 57, 58, 61 and 62 ET 1 and 4 TRS 57 Describe me TRS 62 Sort me
Notes to teachers		
- It is best to do the transformation objective below “visualise, predict, and identify which shape is a reflection, rotation, or translation of a given 2D shape” before this objective. The objective (in black) requires students to identify lines of symmetry, the rotational symmetry of shapes and sort shapes including their symmetrical properties. Sheets NC4–54 to 56 cover this aspect of the objective. - Point out that angles in 2D shapes are less than, more than, or equal to, a right angle. - The Venn diagrams in NC4–56 consist of two ovals which overlap. Each oval has a property written above it. Where the ovals overlap, the 2D shapes which have both of the properties should be inserted. If a shape only has one of the properties it should be listed in the part of the appropriate oval that does not overlap with the other one. - At Year 4 it is sufficient for students to be able to identify equal to, smaller than or larger than a right angle. They do not need to use the terms acute and obtuse angles. Link to online teacher notes on Chapter 14 (2D shapes page 240 and Sorting shapes page 247)		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

GEOMETRY SPATIAL REASONING		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
identify the 2D shapes that compose 3D shapes (e.g. a triangular prism is made from two triangles and three rectangles)	Book Year 4 (2B) Chapter 14 Pages 244 to 246 (3D shapes) Pages 249 to 250 (sorting 3D shapes) NC4–57 (shapes of faces of 3D shapes)	Book Year 4 (2B) Chapter 14 TRS 59 and 63 TRS 60 How many more? TRS 64 Which box do I go in? ET 6, 7 and 8
Notes to teachers		
1 Use the material in the order in which it appears in column two. 2 It is important that students recognise that the faces of 3D shapes are all 2D shapes. This is helpful when students learn about nets for 3D shapes. 3 You could use digital tools to represent 3D shapes. Link to online teacher notes on Chapter 14 (3D shapes page 244 and Sorting shapes page 249)		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

GEOMETRY SPATIAL REASONING		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
visualise, predict, and identify which shape is a reflection, rotation, or translation of a given 2D shape	Book Year 4 (2B) Chapter 17 Pages 275 to 285 (transformations) NC 4–58 to 60 (rotational symmetry) NC4–61 to 65 (transformations which includes predicting what a shape will look like after a transformation)	Book Year 4 (2B) Chapter 17 TRS 74, 75,76 and 77 ET 1,2 and 3 Book Year 5 (3A) Chapter 18 TRS 65 ET 2 and 3
Notes to teachers		
1 Use the material in the order in which it is listed in column two. 2 While it is not specifically mentioned in this objective, line symmetry and rotational symmetry need to be understood for students to be able to identify which 2D shapes have line and rotational symmetry. If you wish to leave this out then use only pages 283 to 285 from the book. 3 Use mirrors and tracing paper to make and test conjectures about what a shape will look like when it is transformed. Link to online teacher notes on Chapter 17 (Symmetry page 278 and Making patterns page 283)		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

GEOMETRY PATHWAYS		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
- use grid references to identify regions and to plot positions on a grid map - interpret and describe pathways, including half and quarter turns and the distance travelled	Book Year 4 (2B) Chapter 16 Pages 263 to 274 (whole chapter) (directions and maps)	Book Year 4 (2B) Chapter 16 TRS 72 At the movies TRS 73 Treasure trees ET 1, 3, 4, 5, 6, 7 and 8
Notes to teachers		
- Compass points are not required in Year 4. - You could use the Getting started on page 263 of book Year 4 (2B) without using compass points. - If you do not wish to introduce compass points then omit these questions or comments from book Year 4 (2B) Page 264 – question 2 Page 265 – compass points Page 273 – comments about compass points Page 272 – use $\frac{1}{4}$ and $\frac{1}{2}$ turns and distances Page 274 – questions 4, 5 and 6 - Explain pathways using directional language, including te reo Māori (e.g. whakamua/forwards, whakamuri/backwards, whakamaui/to the left, whakamatau/to the right, raki/north, tonga/south, rāwhiti/east, uru/west). Link to online teacher notes on Chapter 16		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

STATISTICS PROBLEM AND PLAN AND DATA AND ANALYSIS AND CONCLUSION		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
- use multivariate data to investigate summary and comparison situations with categorical and discrete numerical data, by: - posing an investigative question that can be answered with data - making conjectures or assertions about expected findings - plan how to collect primary data to support answering an investigative question including - deciding on the group of interest - deciding the variable(s) for which data will be collected - taking account of ethical practices in data collection - use a variety of tools to collect data, and check for errors in the data - create and describe data to make meaning from the data, with statements including the name of the variable - choose descriptive statements that best answer the investigative question, reflecting on findings and how they compare with initial predictions or assertions	Book Year 4 (2B) Chapter 18 Pages 287 to 306 (whole chapter) (surveys)	Book Year 4 (2B) Chapter 18 TRS 79 Getting ready for camp TRS 80, 81, 82, 83 and 84 ET 1, 2, 3, 5, 6 and 7 ET 4 What’s growing in the hoop
Notes to teachers are on the next page		

Notes to teachers

- 1 **PPDAC** are the first letters of the Enquiry Cycle. **P**ose a question, **P**lan, Collect the **D**ata, **A**nalyse the data, make some **C**onclusions. The enquiry cycle diagram in the book uses more simplified language appropriate for this age group but it is the same process.
- 2 When using the investigative process with students take account of ethical practices in data collection. For example, make sure students don't ask inappropriate questions that might offend cultural beliefs or practices, or offend students or people with disabilities, neuro diversity or gender identities. You could ask students "Do you think everyone in your class/school/family etc would be happy answering that question"
- 3 Before students collect data for an investigation, ask them make conjectures about what the outcome of the investigation might be. Once the data has been collected and displayed, ask students to compare their findings with the conjectures they made.
- 4 Connect questions to areas of interest and value to the students and their communities
- 5 When analysing the data students should be encouraged to look for any patterns or relationships that they can see in the data. For example, if they are collecting multivariant data about transport options and vehicle ownership, is there a relationship between owning a bike and how you get to school.
- 6 Show students what errors in data look like for example a data point that is completely different to the rest of the data points.
- 7 You could use a spreadsheet or digital tools to draw some data visualisations (tables or graphs). identify the different features of data that the data visualisation reveals and how to describe them.
- 8 Help students to write descriptive statements for their conclusions that match the question asked in the first place.

Link to online teacher notes on Chapter 16 (all sections are relevant)

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

STATISTICS STATISTICAL REASONING		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
check the statements that others make about data to see if they make sense, using information to clarify or correct statements where needed.	NC4–66 (Using secondary data)	
Notes to teachers		
- Some statistical reasoning will have already been covered in the previous objective. - Secondary data can be found at these sites Statistics New Zealand Met Service ESPN New Zealand Cricket Team results ANZ Premier Netball results - When looking at secondary data and data visualisations, show examples of misleading data such as statements made that don’t match the data or a graph that has an axis for example that is not correct or doesn’t start at 0 etc		

NOTES FOR COLUMN THREE: The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in red are essential for fully covering the 2024 New Zealand curriculum. If you click on these you will be taken to the appropriate TRS or ET. These can then be displayed or printed.

The Teacher Resource Sheets (TRS) and Extra Tasks (ET) written in green are not essential but are aligned with the 2024 curriculum and could be used for support/homework/extra practice etc. You will need to go online to www.caxed.co.nz and then “Teacher Support and Mapping Guides” (top right) > click on the book you are using > click on the chapter referenced > click on Teacher Resource Sheets or Extra Tasks (in the bordered boxes at the top of the page > Go to the resource sheet or extra task referenced.

PROBABILITY PROBABILITY INVESTIGATIONS AND CRITICAL THINKING IN PROBABILITY		
Teach students to	Connecting All Strands Year 4 (2B) and supplementary material references (NC4–...)	Go to www.caxed.co.nz and click on ‘teacher support’ to find the resources in this column
- engage in chance-based investigations with equally likely outcomes by: – posing investigative questions – anticipating and then identifying possible outcomes for the investigative question – generating all possible ways to get each outcome (a theoretical approach) or undertaking a probability experiment and recording the occurrences of each outcome – creating data visualisations for possible outcomes – describing what these visualisations show – finding probabilities as fractions – answering investigative questions – reflecting on anticipated outcomes - agree or disagree with others’ conclusions about chance-based investigations. - agree or disagree with others’ conclusions about chance-based investigations	Book Year 4 (2B) Chapter 19 Pages 307 to 318 (whole chapter) (probability) NC4–67 (probability investigation)	Book Year 4 (2B) Chapter 19 TRS 87 TRS 88 That’s all ET1 Take a spin? ET 2, 3 and 4
Notes to teachers are on the next page		

Notes to teachers

- 1 Tossing two dice is the most difficult of the suggestions made in the practical in **NC4–67**. You may wish to use this for extension.
- 2 You could use an online dice or coin tosser.
simulator for: **rolling dice**
adjustable spinner
coin tosser
- 3 Make the link between probability and fractions. The TRS and ET listed online (column three) that are in red are good at making this link.

Link to online teacher notes Chapter 19 (all sections are relevant)