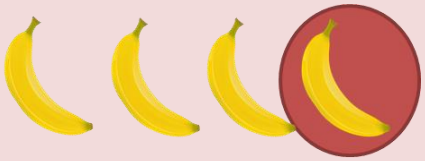
Mathematics Curriculum Level 1 (usually New Entrant students)

Knowledge *learning intention:*	**Strategy** *learning intention:*
Read numbers to 5 first and then to 10	Count a set of objects 
Count forwards to 5 first and then to 10	
Count backwards from 5 first and then from 10	
Say the number after a number (in the range 1- 5)	Get a set of objects: like 7 
Say the number before a number (in the range 1 – 5)	
Order numbers to 5 first and then to 10	

Geometry and measurement Level 1 In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:	**Statistics Level 1** In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:
Measurement • Order and compare objects or events by length, area, volume and capacity, weight (mass), turn (angle), temperature, and time by direct comparison and/or counting whole numbers of units. Shape • Sort objects by their appearance. Position and orientation • Give and follow instructions for movement that involve distances, directions, and half or quarter turns. • Describe their position relative to a person or object. Transformation • Communicate and record the results of translations, reflections, and rotations on plane shapes.	Statistical investigation • Conduct investigations using the statistical enquiry cycle: - posing and answering questions - gathering, sorting and counting, and displaying category data - discussing the results. Statistical literacy • Interpret statements made by others from statistical investigations and probability activities. Probability • Investigate situations that involve elements of chance, acknowledging and anticipating possible outcomes.

Mathematics Curriculum Level 1 (usually Year 1 students)

Knowledge *learning intention:*	**Strategy** *learning intention:*
Read any number up to 10	Join Groups of objects togeather 
Count forwards from any number up to 10	
Count backwards from 10	
Say the number after a number (in the range 1- 10)	Split a number of objects 
Say the number before a number (in the range 1 – 10)	
Order numbers to 10	
Instantly recognise patterns to 5	

Geometry and measurement Level 1 In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:	**Statistics Level 1** In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:
Measurement • Order and compare objects or events by length, area, volume and capacity, weight (mass), turn (angle), temperature, and time by direct comparison and/or counting whole numbers of units. Shape • Sort objects by their appearance. Position and orientation • Give and follow instructions for movement that involve distances, directions, and half or quarter turns. • Describe their position relative to a person or object. Transformation • Communicate and record the results of translations, reflections, and rotations on plane shapes.	Statistical investigation • Conduct investigations using the statistical enquiry cycle: - posing and answering questions - gathering, sorting and counting, and displaying category data - discussing the results. Statistical literacy • Interpret statements made by others from statistical investigations and probability activities. Probability • Investigate situations that involve elements of chance, acknowledging and anticipating possible outcomes.

Mathematics Curriculum Level 1 (usually Year 1 students)

Knowledge *learning intention:*	**Strategy** *learning intention:*
Read any number up to 20	**Solve + and – problems to 10 by** 
Count forwards from any number up to 20	
Count backwards from any number up to 20	
Say the number after a number in the range 1-20	
Say the number before a number in the range 1-20	
Order numbers to 20	
Skip count forwards & backwards in 2's, 5's & 10's	
Know groupings within 10	
Instantly recognise patterns to 10 – doubles and 5 based	
Know doubles to 10	
Read symbols for halves and quarters	

Geometry and measurement Level 1

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Measurement

- Order and compare objects or events by length, area, volume and capacity, weight (mass), turn (angle), temperature, and time by direct comparison and/or counting whole numbers of units.

Shape

- Sort objects by their appearance.

Position and orientation

- Give and follow instructions for movement that involve distances, directions, and half or quarter turns.
- Describe their position relative to a person or object.

Transformation

- Communicate and record the results of translations, reflections, and rotations on plane shapes.

Statistics Level 1

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Statistical investigation

- Conduct investigations using the statistical enquiry cycle:
  - posing and answering questions
  - gathering, sorting and counting, and displaying category data
  - discussing the results.

Statistical literacy

- Interpret statements made by others from statistical investigations and probability activities.

Probability

- Investigate situations that involve elements of chance, acknowledging and anticipating possible outcomes.

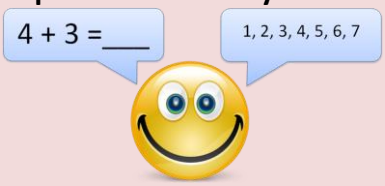
Mathematics Curriculum Level 1 (usually Year 2 students)

Knowledge *learning intention:*

- Read any number up to 20
- Count forwards from any number up to 20
- Count backwards from any number up to 20
- Say the number after a number in the range 1-20
- Say the number before a number in the range 1-20
- Order numbers to 20
- Skip count forwards & backwards in 2's, 5's & 10's
- Know groupings within 10
- Instantly recognise patterns to 10 – doubles and 5 based
- Know doubles to 10
- Read symbols for halves and quarters

Strategy *learning intention:*

Solve + and – problems to 10 by



Fractions

Find 1/2 and 1/4 of shapes or sets to 20 by equal sharing of the objects

Geometry and measurement Level 1

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Measurement

- Order and compare objects or events by length, area, volume and capacity, weight (mass), turn (angle), temperature, and time by direct comparison and/or counting whole numbers of units.

Shape

- Sort objects by their appearance.

Position and orientation

- Give and follow instructions for movement that involve distances, directions, and half or quarter turns.
- Describe their position relative to a person or object.

Transformation

- Communicate and record the results of translations, reflections, and rotations on plane shapes.

Statistics Level 1

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Statistical investigation

- Conduct investigations using the statistical enquiry cycle:
  - posing and answering questions
  - gathering, sorting and counting, and displaying category data
  - discussing the results.

Statistical literacy

- Interpret statements made by others from statistical investigations and probability activities.

Probability

- Investigate situations that involve elements of chance, acknowledging and anticipating possible outcomes.

Mathematics Curriculum Level 1 (usually Year 2 students)

Knowledge *learning intention:*	**Strategy** *learning intention:*
Read any number up to 100	**Solve + and – problems by:** • **Counting on or back from the largest number e.g.** 16+3 as …17, 18, 19 **solve x problems by** • **skip counting in** ▪ **Twos** 2 + 2 + 2 + 2 = 4 x 2 ▪ **Fives** 5 + 5 + 5 + 5 + 5 = 5 x 5 ▪ **Tens** 10 + 10 = 2 x 10 **Find a ½ and ¼ of a set of sets and shapes by equal sharing** ▪ ¼ of 12
Count forwards from any number up to 100	
Count forwards from any number up to 100	
Say the number after and before a number 1- 100	
Order numbers to 100	
Count forwards & backwards in 2's, 5's, & 10's to 100	
Know number of 10's in decades	
Know groupings within 20	
Know teen number facts	
Know multiples of 10 that add to 100	
Know doubles and halves to 20	
Know + facts to 10	
Read unit fractions	

Geometry and measurement Level 1 In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:	**Statistics Level 1** In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:
Measurement • Order and compare objects or events by length, area, volume and capacity, weight (mass), turn (angle), temperature, and time by direct comparison and/or counting whole numbers of units. Shape • Sort objects by their appearance. Position and orientation • Give and follow instructions for movement that involve distances, directions, and half or quarter turns. • Describe their position relative to a person or object. Transformation • Communicate and record the results of translations, reflections, and rotations on plane shapes.	Statistical investigation • Conduct investigations using the statistical enquiry cycle: - posing and answering questions - gathering, sorting and counting, and displaying category data - discussing the results. Statistical literacy • Interpret statements made by others from statistical investigations and probability activities. Probability • Investigate situations that involve elements of chance, acknowledging and anticipating possible outcomes.

Mathematics Curriculum Level 2 (usually Year 3/4 students)

Knowledge *learning intention:*

- Read any number up to 1000
- Count forwards & backwards by 1's, 10's & 100's
- Say the number 1 more, 10 more, 100 more
- Say the number 1 less, 10 less, 100 less
- Order numbers to 1000
- Skip count forwards & backwards in 3's
- Know unit fractions symbols
- Order fractions with the same denominators
- Know groupings of 10's in a 3 digit number
- Know groupings to 100
- Round 3 digit numbers to the nearest 10 or 100
- Know addition facts to 20
- Know multiples of 100 that add to 1,000
- Know x & ÷ facts for 2's, 5's, 10's

Strategy *learning intention:*

Solve + and – problems in my head by:

- **Using doubles, for example,**
  8 + 7 as 8 + 8 – 1
- **Using fives, for example,**
  8 + 7 as 5 + 3 + 5
- **Using making tens, for example,**
  8 + 7 as 10 + 5
  19 + 6 as 20 + 5
  29 + 8 as 30 + 7
- **Using place value, for example,**
  33 + 16 as 30 + 10 + 3 + 6

Use repeated addition to solve X problems by:

- **Twos** 2 + 2 + 2 + 2 = 4 x 2
- **Threes** 3 + 3 + 3 + 3 + 3 = 5 x 3
- **Fours** 4 + 4 + 4 = 3 x 4
- **Fives** 5 + 5 + 5 + 5 + 5 = 5 x 5
- **Tens** 10 + 10 = 2 x 10

Find a fraction of a number by:

- **Using repeated addition or subtraction,**
  for example,
  - 1/3 of 12 as 4 + 4 + 4
    Or 12 – 2 – 2 – 2 = 6,
  - 6 – 2 – 2 – 2 = 0,
  - 1/3 of 12 is 2 + 2 + 2

Geometry and measurement Level 2

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to

Measurement

- Create and use appropriate units and devices to measure length, area, volume and capacity, weight (mass), turn (angle), temperature, and time.
- Partition and/or combine like measures and communicate them, using numbers and units.

Shape

- Sort objects by their spatial features, with justification.
- Identify and describe the plane shapes found in objects.

Position and orientation

- Create and use simple maps to show position and direction.
- Describe different views and pathways from locations on a map.

Transformation

- Predict and communicate the results of translations, reflections, and rotations on plane shapes.

Statistics Level 2

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Statistical investigation

- Conduct investigations using the statistical enquiry cycle:
  - posing and answering questions
  - gathering, sorting, and displaying category and whole-number data
  - communicating findings based on the data.

Statistical literacy

- Compare statements with the features of simple data displays from statistical investigations or probability activities undertaken by others.

Probability

- Investigate simple situations that involve elements of chance, recognising equal and different likelihoods and acknowledging uncertainty.

Mathematics Curriculum Level 3 (usually Year 5/6 students)

Knowledge *learning intention:*

- Read and order any number up to 1,000,000
- Read decimals to 3 d.p.
- Read any fraction inc. >1
- Order unit fraction
- Say the number 1, 10, 100 and 1000 more or less
- Count forwards and backwards in $^1/_2$'s, $^1/_4$'s, $^1/_{3's}$, $^1/_{5's}$, $^1/_{10's}$
- Know groupings of 10's and 100's in a 4 digit number
- Know groupings within 1000
- Know groups of 2's, 3's, 5's and 10's in numbers to 100 and any remainders
- Round whole numbers to the nearest 10, 100, 1000
- Round decimals to the nearest whole number
- Recall all basic multiplication fact
- Recall addition & subtraction facts to 20
- Know what happens when you multiply by 1, 0 or 10

Strategy *learning intention:*

Solve + and – problems by:

- **Using compensation from tidy numbers**
  725 - 389 as 725 - 400 + 11 = 336
- **Using place value**
  376 + 431 as 300 + 400 + 70 + 30 + 6 + 1 = 807
- **Using compatible numbers**
  35 + 37 + 65 as (35 + 65) + 37 = 100 + 37 = 137
- **Using reversibility**
  814 - 789 = ?? as 789 + ?? = 814
- **Using equal additions**
  72 - 37 as 75 - 40 (add three to both numbers)
- **Using decomposition**
  746 – 129, rearrange 746 as 700 + 30 + 16.
  700- 100, 30 - 20 & 16 -9 = 617

Solve x and ÷ problems by:

- **Using doubling, for ex,**
  2 ×_ 6 = 12 so 4 ×_ 6 = 24
- **Deriving facts, for ex,**
  2 ×_ 6 =12 so 3×_ 6 =12 + 6 =18
- **Using reversibility, for ex,**
  7 ×_ 4 = 28 so 28 ÷_ 4 = 7
- **Using proportional adjustment, for example,**
  3 ×_ 12 is the same as, 6 ×_ 6 = 36
- **(doubling and halving),**
  or 24 ÷_ 4 = 6 so 24 ÷_ 8 = 3

Solve problems with fractions

- **Mentally, using known multiplication and division facts, for example,**
  1/3 of 36 as, 3 ×_ 12 = 36 so, 1/3 of 36 = 12

Geometry and measurement Level 3

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Measurement

- Use linear scales and whole numbers of metric units for length, area, volume and capacity, weight (mass), angle, temperature, and time.
- Find areas of rectangles and volumes of cuboids by applying multiplication.

Shape

- Classify plane shapes and prisms by their spatial features.
- Represent objects with drawings and models.

Position and orientation

- Use a co-ordinate system or the language of direction and distance to specify locations and describe paths.

Transformation

- Describe the transformations (reflection, rotation, translation, or enlargement) that have mapped one object onto another.

Statistics Level 3

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Statistical investigation

- Conduct investigations using the statistical enquiry cycle:
  - gathering, sorting, and displaying multivariate category and whole number data and simple time-series data to answer questions
  - identifying patterns and trends in context, within and between data sets
  - communicating findings, using data displays.

Statistical literacy

- Evaluate the effectiveness of different displays in representing the findings of a statistical investigation or probability activity undertaken by others.

Probability

- Investigate simple situations that involve elements of chance by comparing experimental results with expectations from models of all the outcomes, acknowledging that samples vary

Mathematics Curriculum Early Level 4 (usually Year 7 students)

Knowledge *learning intention:*

- Count forwards and backwards in 1/1000's, 1/100's, 1/10's 1's, 10's, etc.
- Say the number 1/1000, 1/100', 1/10, 1, 10, before or after any number
- Say the number 1/1000, 1/100', 1/10, 1, 10, before or after any number
- Order decimals to 3.d.p
- Order mixed fractions with 1/2, 1/4,1/3,1/5, 1/10
- Know equivalent fractions for 1/2, 1/4,1/3,1/5, 1/10 with denominators
- Know groupings of 10's, 100's & 1000s in 7 digit numbers.
- Round whole numbers & decimals to nearest 1 or 1/10
- Recall all multiplication and division facts to 10 x 10
- Recall conversions between decimals, fractions & % with 1/2, 1/4,1/3,1/5, 1/10
- Use divisibility rules for 2,3,5,9,10
- Know square no's & square roots to 100
- Identify factors of numbers to 100

Strategy *learning intention:*

Solve + and -problems by using:

- **Compensation from tidy numbers,** e.g., 3.2 + 1.95 as 3.2 + 2 – 0.05
- **Place value,** e.g., 8.65 – 4.2 = (8 – 4) + (0.6 – 0.2) + 0.05 or 8.65 – 4 = 4.65 then 4.65 – 0.2 = 4.45
- **Reversibility and commutativity,** e.g., 6.03 – 5.8 = ?? as 5.8 + ?? = 6.03 (reversibility) or ?? + 3.98 = 7.04 as 3.98 + ?? = 7.04 (commutativity)
- **Equal additions,** e.g., 7.24 – 3.8 as 7.44 – 4.0 = 3.44
- **Using negatives,** e.g., 6.4 – 2.5 as 0.4 – 0.5 is -0.1; 6.0 – 2.0 = 4.0; 4.0 – 0.1 = 3.9
- **Decomposition,** e.g., 9.25 – 6.83 as 8, 12 tenths, 0.03
- **Written working forms / Vertical algorithms**

Solve x and / problems by using:

- **Compensation from tidy numbers**, e.g., 6 x 998 as, (6 x 1 000) – (6 x 2) or 56 ÷_ 4 using (60 ÷_ 4) – 1
- **Place value,** e.g., 28 x 7 as (20 x 7) + (8 x 7) or 72 ÷_ 4 as (40 ÷_ 4) + (32 ÷_ 4)
- **Reversibility,** e.g., 96 ÷_ 6 as 6 x ?? = 96
- **Proportional adjustment,** e.g., 4 x 18 as 8 x 9 or 81 ÷_ 3 as (81 ÷_ 9) x 3
- **Written working forms / Vertical algorithms**

Solve problems with fractions, decimals, proportions, and ratios, using:

- **Unit fractions**, e.g.,4/9 x 18 as (1/9 x 18) x 4
- **Place value**, e.g., 3.4 x 8 as (3 x 8) + (0.4 x 8) = 24 + 3.2 = 27.2
- **Compensating from tidy numbers or fractions**, e.g., 3/8 x 28 as 1/2 of 3/4 x 28 or 1.9 x 3.4 as (2 x 3.4) – (0.1 x 3.4)
- **Using equivalent fractions and ratios**, e.g., 40% of 35 as 2/5 of 35 = 14

Geometry and measurement Level 4

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Measurement

- Use appropriate scales, devices, and metric units for length, area, volume and capacity, weight (mass), temperature, angle, and time.
- Convert between metric units, using whole numbers and commonly used decimals.
- Use side or edge lengths to find the perimeters and areas of rectangles, parallelograms, and triangles and the volumes of cuboids.
- Interpret and use scales, timetables, and charts.

Shape

- Identify classes of two- and three-dimensional shapes by their geometric properties.
- Relate three-dimensional models to two-dimensional representations, and vice versa.

Position and orientation

- Communicate and interpret locations and directions, using compass directions, distances, and grid references.

Transformation

- Use the invariant properties of figures and objects under transformations (reflection, rotation, translation, or enlargement).

Statistics Level 4

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Statistical investigation

- Plan and conduct investigations using the statistical enquiry cycle:
  - determining appropriate variables and data collection methods
  - gathering, sorting, and displaying multivariate category, measurement, and time-series data to detect patterns, variations, relationships, and trends
  - comparing distributions visually
  - communicating findings, using appropriate displays.

Statistical literacy

- Evaluate statements made by others about the findings of statistical investigations and probability activities.

Probability

- Investigate situations that involve elements of chance by comparing experimental distributions with expectations from models of the possible outcomes, acknowledging variation and independence.
- Use simple fractions and percentages to describe probabilities

Mathematics Curriculum Level 4 (usually Year 8 students)

Knowledge *learning intention:*

- Count forwards and backwards in $^1/_{1000's}$, $^1/_{100's}$, $^1/_{10's}$ 1's, 10's, etc.
- Say the number 0.001, 0.01, 0.1, 1, 10 before/after decimal numbers
- Order fractions, decimals and percentages
- Know how many $^1/_{10's}$, $^1/_{100's}$,, & $^1/_{1000's}$, are in numbers to 3 d.p.
- Know what happens when any number is multiplied or divided by a power of ten.
- Round decimals to the nearest 100, 10, 1, or 0.01
- Recall fraction, decimal & % conversions for commonly used fractions: ($^1/_{8's}$, $^1/_{10's}$ $^1/_{20's}$ etc)
- Know simple powers of numbers to 10
- Use divisibility rules for 2,3,4,5,6,8,9,10
- Identify common factors of pairs of numbers to 100
- Identify lowest common multiple of pairs of numbers to 10
- Recall prime numbers to 20

Strategy *learning intention:*

Solve + - x and ÷ ¸ problems with fractions and decimals by using:

- **Conversion between fractions and decimals,** e.g., 0.75 x 2.4 as 3/4 x 2.4
- **Place value,** e.g., 0.15 x 3.6, as (0.1 x 3.6) + (0.05 x 3.6)
- **Doubling and halving,** etc., e.g., 7.2 ÷_ 0.4 as (7.2 ÷_ 0.8) x 2
- **Commutativity,** e.g., 48 x 0.125 as 0.125 x 8 = 1/8 of 8 = 1
- **Multiplying numerators and denominators,** e.g., 3/4 x 2/5 as 3 x 2 /4 x 5

Use written forms for:

- Addition & subtraction of whole numbers & decimals to 3dp.
- Multiplication & division of whole numbers & decimals x single digit

Multiplication of 4 digit x 2 digit whole numbers

Find fractions, decimals & percentages of given amounts e.g., 65% of 24 as 50% of 24 is 12, 10% of 24 is 2.4, and 5% is 1.2 so 12 + 2.4 + 1.2 = 15.6

- **Finding equivalent ratios with a common factor,** e.g., 21:28 as ?? :8 as 21:28 is 3:4 so 6:8 e.g.,18/27 = 2/3 so 2/3 = 10/15
- **Finding a multiplier between the units,** e.g., 18 out of 27 as 10 out of 15 by multiplying 15 by 2/3

Geometry and measurement Level 4

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Measurement

- Use appropriate scales, devices, and metric units for length, area, volume and capacity, weight (mass), temperature, angle, and time.
- Convert between metric units, using whole numbers and commonly used decimals.
- Use side or edge lengths to find the perimeters and areas of rectangles, parallelograms, and triangles and the volumes of cuboids.
- Interpret and use scales, timetables, and charts.

Shape

- Identify classes of two- and three-dimensional shapes by their geometric properties.
- Relate three-dimensional models to two-dimensional representations, and vice versa.

Position and orientation

- Communicate and interpret locations and directions, using compass directions, distances, and grid references.

Transformation

- Use the invariant properties of figures and objects under transformations (reflection, rotation, translation, or enlargement).

Statistics Level 4

In a range of meaningful contexts, students will be engaged in thinking mathematically and statistically. They will solve problems and model situations that require them to:

Statistical investigation

- Plan and conduct investigations using the statistical enquiry cycle:
  - determining appropriate variables and data collection methods
  - gathering, sorting, and displaying multivariate category, measurement, and time-series data to detect patterns, variations, relationships, and trends
  - comparing distributions visually
  - communicating findings, using appropriate displays.

Statistical literacy

- Evaluate statements made by others about the findings of statistical investigations and probability activities.

Probability

- Investigate situations that involve elements of chance by comparing experimental distributions with expectations from models of the possible outcomes, acknowledging variation and independence.
- Use simple fractions and percentages to describe probabilities