

Financial sustainability assessment for Maths and statistics

Formative assessment is an ongoing process throughout teaching and learning. The assessment rubric can be downloaded, and learning outcomes can be highlighted or hyperlinked to evidence.

Level 4

Assess: Where am I? What am I doing? What do I do next?

Number and algebra achievement objective descriptors

Learners will use their mathematical knowledge and toolbox of strategies to solve a problem within a financial sustainability context. Problem-solving involves the learner finding out what works and what doesn't, and clearly communicates the strategies and skills they have used to solve a problem.

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 use a range of multiplicative strategies when operating on whole numbers.	 I am able to: Estimate the solution to a problem by rounding whole numbers to an appropriate level of accuracy Use order of operations (BEMA) Apply number strategies to solve calculations with whole numbers Consider the impact of rounding on a solution for an estimation problem State the limits of accuracy for a given rounded whole number.
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 understand addition and subtraction of fractions, decimals and integers.	 I am able to: Add and subtract integers Identify the relative size and place value of integers Identify the place value of digits in decimals Add and subtract simple decimals Use order of operations (BEMA) with fractions, decimals and integers Add and subtract decimals to any place value.
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 find fractions, decimals, and percentages of amounts expressed as whole numbers, simple fractions and decimals.	 I am able to: Simplify fractions Add and subtract fractions with different denominators Add and subtract fractions with related denominators Divide whole numbers by unit fractions Divide fractions Multiple fractions Identify a fraction of quantity Convert between commonly used fractions, decimals and percentages.





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 apply simple linear proportions, including ordering fractions.	 I am able to: Write simple ratios Find equivalent ratios by simple multiplication or division Identify equivalent rates by simple multiplication or division Write ratios in their simplest form.
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 know the equivalent decimal and percentage forms for everyday fractions.	 I am able to: Recall the equivalent decimals and percentages of everyday fractions Identify simple percentages of amounts Increase or decrease by a simple percentage Convert between simple fractions, decimals and percentages.
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 know the relative size and place value structure of positive and negative integers and decimals to three places.	I am able to: o Round decimals to the nearest tenth and hundredth.
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 form and solve simple linear equations.	 I am able to: Identify variables and constants in algebraic expressions and equations Identify the symbol of the equal sign as balance between the left and the right Construct and solve simple linear expressions or equations Solve expressions or equations given values for variables.





Measurement achievement objective descriptors

Learners will use their mathematical knowledge and toolbox of strategies to solve financial sustainability context problems. Problem-solving involves the learner finding out what works and what doesn't, and clearly communicates the strategy and skills they used to solve a problem.

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 convert between metric units, using whole numbers and commonly used decimals.	 I am able to: Identify suitable units of measurement for particular objects Use tools for measuring Convert measurement for basic SI units.
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 use side or edge lengths to find the perimeters and areas of rectangles, parallelograms and triangles, and the volumes of cuboids.	 I am able to: Identify classes of two- and three-dimensional shapes by their geometric properties Identify properties of rectangles, squares and triangles and use these to solve problems Calculate the area of squares, rectangles and triangles Calculate the perimeter of simple shapes Calculate volumes of cubes and cuboids Calculate the area of a parallelogram and rhombus.

Formative assessment

Where am I? What am I doing? What do I do next?	Prestructural	Unistructural	Multistructural	Relational	Extended Abstract
Investigate how financial planning can help people attain life goals. Financial capability contexts include: o Insurance/inihua o Investing o KiwiSaver o Retirement/whakatā.	l can list short- term goals as part of a financial plan.	I can list the benefits of short and long-term financial planning.	I can investigate how financial planning can help people attain life goals, and can describe these goals.	I can investigate how financial planning can help attain people life goals, and can explain the importance of financial planning at different stages of your life.	I can investigate how financial planning can help people attain life goals, and create an overview for a possible financial plan throughout different stages.





Level 5

Assess: Where am I? What am I doing? What do I do next?

Number and algebra achievement objective descriptors

Learners will use their mathematical knowledge and toolbox of strategies to solve financial sustainability context problems. Problem-solving involves the learner finding out what works and what doesn't and clearly communicates the strategy and skills they used to solve the problem.

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 reason with linear proportions.	 I am able to: Express any number as a decimal, fraction, or percentage Compare the size of two percentages Compare the size of two fractions Compare the size of two decimals Compare and contrast values written in decimal, fraction or percentage form Do calculations using fractions with different denominators Use limits of accuracy in problems.
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 understand operations on fractions, decimals, percentages, and integers.	 I am able to: Perform operations on decimal numbers Perform operations on fractions Perform operations on percentages Perform operations on integers Identity percentages of amounts Increase and decrease quantities by a given percentage Perform calculations with percentages Perform calculations using GST Calculate the original amount after a percentage increase or decrease Calculate simple interest Use limits of accuracy in problems.
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 know commonly used fraction, decimal and percentage conversions.	 I am able to: Identify common fractions (¹/₂, ¹/₃, ¹/₄, ¹/₅) in decimal and percentage form Convert between commonly used fractions, decimals and percentages Rearrange percentage calculations Use limits of accuracy in problems.
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 use rates and ratios.	 I am able to: Identify equivalent rates Identify currency rates Calculate amounts using currency rates Use equivalent rates to compare given rates (e.g., currency)



	 Output of accuracy in problems.
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 know and apply standard form, significant figures, rounding and decimal place value.	 I am able to: Round decimals sensibly Round decimals to a specified accuracy Estimate the solution to a problem by rounding decimals to an appropriate level of accuracy by taking into account the operation(s) being performed Investigate the effect of rounding when performing different operations with decimals Use limits of accuracy in problems.
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 form and solve linear and simple quadratic equations.	 I am able to: Solve equations requiring more than one step Create a new subject from an original formula.

Measurement achievement objective descriptors

Learners will use their mathematical knowledge and toolbox of strategies to solve financial sustainability context problems. Problem-solving involves the learner finding out what works and what doesn't and clearly communicates the strategy and skills they used to solve the problem.

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 select and use appropriate metric units for length, area, volume and capacity, weight (mass), temperature, angle, and time, with awareness that measurements are approximate.	 I am able to: Select and use appropriate units for situations involving weight, time, mass, temperature and distance Measure using appropriate tools.
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 convert between metric units, using decimals.	I am able to: • Convert between SI units (decimals or fractions).
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 deduce and use formulae to find the perimeters and areas of polygons and the volumes of prisms	 I am able to: Identify properties of polygons Identify properties of circles Identify properties of prisms Identify and label parts of a right-angled triangle (Pythagoras' theorem) Identify and label sine, cosine and tan ratios Calculate the hypotenuse of a right-angled triangle Calculate missing angles of right-angled triangles



- Deduce and use formulae to find the longest and shortest side of a rightangled triangle
- Deduce and use formulae to find missing sides of a right-angled triangle.

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 find the perimeters and areas of circles and composite shapes and the volumes of prisms, including cylinders.

I am able to:

- Use properties of polygons to calculate volumes
- Use properties of polygons to calculate areas of complex shapes
- Use properties of prisms to calculate surface areas
- Use properties of prisms to calculate volumes
- Use properties of a circle to calculate area
- Use properties of a circle to calculate volume
- Deduce and use formulae to find the perimeters and areas of polygons and the volumes of prisms.

Formative assessment

Where am I? What am I doing? What do I do next?	Prestructural	Unistructural	Multistructural	Relational	Extended A
Spending Compare spending choices and priorities of individuals/whānau in relation to age and circumstance. Financial capability contexts include: o Buying insurance/inihua.	I can only relate priorities and spending choices to my own situation.	I can list spending choices and priorities of individuals and whānau in relation to age and circumstance, but they are not always relevant.	I can compare spending choices and priorities of individuals/whānau in relation to age and circumstance at different stages of life, and describe what these are.	I can compare spending choices and priorities individual/whānau in relation to age and circumstance, and can analyse these choices.	I can compare choices and p individuals/wl relation to age circumstance, justify these c
Credit and Debt Different investment/whakangao product as a way of saving. Financial capability	I need help to understand that investment/whakangao is a means of saving.	I can list several different investment/whakangao products.	I can describe different investment/whakangao products as a way of saving.	I can describe different investment/whakangao products as a way of saving and can explain how they work.	I can describe investment/w products as a saving and ca how they wor I can justify w investment/w would be best





 contexts include: KiwiSaver and the different fund options Bonds Property Shares. 					different stag
Identifying and managing risk Describe ways of managing risk involved in different investments/whakangao. Financial capability contexts include: KiwiSaver and the different fund options Shares Bonds Property.	I need help to identify possible investment/whakangao risks or can identify a risk for one type of investment/whakangao.	I can identify risks but cannot discuss ways to manage these risks across different investments/whakangao.	l can describe several relevant ways of managing risk involved in different investments/whakangao.	I can describe investment/whakangao risks and explain how they can be managed to minimise potential loss over the time of an investment/whakangao.	I can describe of investments/v and explain he can be manag minimise pote on an investment/w I can reflect o risks of an investment/w and can apply knowledge to scenario.