## **Exploring financial identity through mathematics and statistics**

Learning experiences and formative assessment tasks in this resource have been aligned to[SOLO Taxonomy](http://www.johnbiggs.com.au/academic/solo-taxonomy/) to ensure cohesiveness, constructive alignment and cognitive stretch for all students. This gives both teachers and students choice throughout the learning and teaching process.

This resource encourages students to apply mathematical skills and knowledge in a financial context. Students explore their financial identity and behaviours when managing their money, spending, saving and taking on debt.

This resource is designed as an integrated, cross-curricular resource, supporting the theme, **Identity.** It can be used in multiple ways to support teaching and learning. Related resources are also available for social sciences, English and technology (digital technologies).

**Important reading:**

* [Financial identity resource introduction](http://sortedinschools.org.nz/sorted-resources/financial-identity/)
* [Pedagogy and methodology overview](http://www.sortedinschools.org.nz/teachers/curriculum-info/pedagogical-design/teachers/curriculum-info/pedagogical-design/), for the frameworks underpinning the development of this resource.

**Timing**

The resources are designed for flexibility and choice. There are a range of resources to choose from, so schools and teachers can design programmes that allows:

* Students to work at their own pace using a student planner.
* Teachers to design a programme that suits department/faculty or whole-school planning over a few weeks or a term. This will vary from school to school.

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| **Mathematics and statistics achievement objectives**  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:  **Level Four**   * understand addition and subtraction of fractions, decimals, and integers * find fractions, decimals, and percentages of amounts expressed as whole numbers, simple fractions, and decimals * apply simple linear proportions, including ordering fractions * know the equivalent decimal and percentage forms for everyday fractions * know the relative size and place value structure of positive and negative integers and decimals to three places * form and solve simple linear equations.   **Level Five**   * reason with linear proportions * understand operations on fractions, decimals, percentages, and integers * use rates and ratios * know commonly used fraction, decimal, and percentage conversions * know and apply standard form, significant figures, rounding, and decimal place value * Form and solve linear and simple quadratic equations. |

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| NEED IT/KNOW IT | LINK IT/THINK IT | EXTEND IT/DEFEND IT |
| Make connections to what you already know. This is the starting point for new learning about your **financial identity**. | Link your ideas and make connections to build new knowledge and understandings about your **financial identity.** Learn about the perspectives and insights of others. | Extend your learning by applying it to new contexts. Find evidence, validate sources, and summarise your thinking. Present your findings to clarify your **financial identity.** |
| **Relationships to money** | | |
| **Define** financial identity. What are your values, attitudes, behaviours, and skills regarding money?  **Describe** your money personality. How do you react to sales and advertising? Do you have any strategies you use before you buy something? Are you an impulse buyer?  Take the $orted [Money Personality](https://sorted.org.nz/tools/money-personality-quiz) test.  **Define** needs and wants. | **Analyse** the strengths and weaknesses of your money personality. What areas do you need to improve on and what areas are you managing well?  **Compare and contrast** the differences between needs and wants.  **Read** [Needs and wants – Shopping decisions](http://www.sortedinschools.org.nz/api/v1.0/download?filename=needs-vs-wants-shopping-decisions&files=252) and discuss whether each item is a need or a want.  Complete the [spending diary](http://sortedinschools.org.nz/api/v1.0/download?filename=spending-diary&files=46). Enter your last 10 purchases in the diary and complete the table. Use the diary to **identify** areas for goal setting or possible savings.    **Justify** your decisions and show evidence that you can undertake a plan of goal setting or saving for an agreed period.  **Analyse** factors that might affect your ability to manage your money.    **Consider** changes in your income, the time frames you set for your goals, and life events that might get in the way of your goals. | **Explore** ideas about identity   * What do your spending habits reveal about your identity? * Is spending a way to achieve happiness? * Brainstorm your ideas and share with your classmates. |
| **Setting goals** | | |
| NEED IT/KNOW IT | LINK IT/THINK IT | EXTEND IT/DEFEND IT |
| **Define** goal setting.View the presentationon[goal setting**.**](http://sortedinschools.org.nz/api/v1.0/download?filename=setting-goals-powerpoint&files=30)After viewing, expand your explanation to include any new information you have learnt.  **Read** the [SORTED Goals booklet](https://sorted.org.nz/assets/Order-Collateral-booklets/Sorted-Goals-Booklet.pdf) and answer these questions:   * What details make our goals more achievable? * What details make managing your money more achievable? * When would you find it useful to have a plan to manage your money?   Select six activities, events, or items you would like to work towards. Categorise them into short-, medium-, or long-term goals. Upload your selections as images into [Decide what to save for – How, when, and how much?](http://sortedinschools.org.nz/api/v1.0/download?filename=decide-what-to-save-for-how-when-and-how-much&files=53)  **Read** this [blog post](https://sorted.org.nz/must-reads/keep-treats-on-track/) and use it as a discussion starter to explore class and whānau stories about the decisions they have made and their consequences. **Investigate** the question “What is a good financial decision?”.  **Read** [Needs and wants – The supermarket shop](http://sortedinschools.org.nz/api/v1.0/download?filename=needs-vs-wants-the-supermarket-shop&files=44) and discuss whether each item is a need or a want. | **Explain** why it is important to have goals that cover different time frames. Give examples of a short-term, a medium-term, and a long-term goal you could set for yourself.  **List and explain** some factors that could affect your short-term, medium-term and long-term goals. Consider how you manage your money, your spending habits, and life events. You may find the [financial planning tool](http://sortedinschools.org.nz/api/v1.0/download?filename=financial-planning-tool&files=255) helpful.  **Research** the cost of Simon’s food choices through online websites, such as the [Countdown](https://shop.countdown.co.nz/?_ga=2.248229447.192355955.1531187282-2112525244.1531187282) or [New World](http://www.ishopnewworld.co.nz/) apps.  People often choose to buy products made by a specific brand. **Consider** how people’s perceptions affect their brand choices. Find the total cost of all the items on Simon’s list and analyse how brand choices could affect the total costs. | Show **evidence** of some financial goals you have set for yourself.  **Evaluate** the importance of setting goals and **justify** why it is important for individuals to set personal financial goals.  **Examine** how products may have different prices depending on brand choices. Choose two products and record their different brand prices. With your understanding of percentages, calculate the percentage differences in prices between brands. Suggest possible items Simon could recommend his family purchases for the picnic in [Planning a family picnic](http://sortedinschools.org.nz/api/v1.0/download?filename=planning-a-family-picnic&files=254)  **Consider** how your decisions could affect others who are going to the picnic, and their impact on a budget of $30. |
| **Managing your money** | | |
| NEED IT/KNOW IT | LINK IT/THINK IT | EXTEND IT/DEFEND IT |
| **Explain** what it means to manage your money.  Complete[Planning your financial future.](https://sortedinschools.org.nz/students/student-activities/planning-your-financial-future/download?files=54)  **Read, analyse**, and **discuss** the infographic [managing my money](http://sortedinschools.org.nz/api/v1.0/download?filename=managing-your-money-infographic&files=257)  **Explore** ideas about setting goals and how to achieve them through generating a budget. Use the [Sorted budgeting tool](https://sorted.org.nz/tool/budgeting-tool#/welcome) to help explore different categories of expenses. (You will need an understanding of percentages and fractions).  **Define** the time frames for short-term, medium-term, and long-term goals. **Describe** times when you have set any short-term, medium-term, or long-term goals for yourself.  **Explain** how plans for managing money help individuals, whānau, organisations, and governments to reach their goals.  **Compare** needs and wants. **Write** a statement differentiating between the two. In pairs, discuss the following items and classify as a need or a want.   * Car * Food * Phone   **Read** [Planning a family picnic](http://sortedinschools.org.nz/api/v1.0/download?filename=planning-a-family-picnic&files=254) and **identify** Simon’s choices as needs or wants. **Justify** your decisions to a partner. | **Select** and **apply** money management tools to manage your money (ie: formalised budget).  **Read** [Planning your financial future.](https://sortedinschools.org.nz/students/student-activities/planning-your-financial-future/download?files=54)  On [Decide what to save for – How, when, and how much?](http://sortedinschools.org.nz/api/v1.0/download?filename=decide-what-to-save-for-how-when-and-how-much&files=53), go to “Your turn to explore setting goals and making a budget”.  **Compare** foreign currencies and discuss taxes on goods purchased from overseas.  **Prioritise** [Simon’s needs and wants](https://sortedinschools.org.nz/students/student-activities/planning-a-family-picnic/download?files=52) and **explain** how to rank these.  On [[Decide what to save for – How, when, and how much?](http://sortedinschools.org.nz/api/v1.0/download?filename=decide-what-to-save-for-how-when-and-how-much&files=53),](https://sortedinschools.org.nz/students/student-activities/decide-what-to-save-for-how-when-and-how-much/download?files=53) go to “Explore setting goals and managing your money”.  **Explain** possible impacts on your financial plan.  **Consider** any relevant short-term, medium-term, and long-term factors that may impact on your plan and **explain** why these are relevant by hyperlinking to your plan.  Complete Planning your financial future. **Explain** any commitments and outgoings that will impact on the financial plan.  On Planning your financial future, go to the extension activity. **Justify** your choices of ratio amounts for the different categories, linking them back to Leoni’s overall goals.  **Describe** aspects of your spending that are more a want than a need. Give an example. | **Create** a plan to manage money for an event such a family gathering.  **Evaluate** this plan.  **Create** [a budget](https://sorted.org.nz/tool/budgeting-tool?__hstc=97822848.53eb8bfb1219d0e28fb2aa794b5e4df9.1550438774099.1551651737638.1551661355583.26&__hssc=97822848.23.1551661355583&__hsfp=3147532802#/welcome) for your identified short-, medium-, and/or long-term goals. Describe how you are going to budget from your income and/or savings. Make sure you show your calculations and communicate the logic behind your problem solving.  **Create** a [plan](http://sortedinschools.org.nz/api/v1.0/download?filename=planning-your-financial-future&files=54) for Leoni to manage her money so that she can reach her goal of owning a car in a shorter amount of time. Suggest some different pathways she could explore.  Using the prompting questions below reflect on how needs and wants shape your identity:   * Does your identity depend on having certain labels to wear? * Are wants enablers or barriers to your identity?   **Explain** how your ideas about ‘what is a need and a want’ have changed after this learning. |
| **Spending and saving** | | |
| NEED IT/KNOW IT | LINK IT/THINK IT | EXTEND IT/DEFEND IT |
| **Explain** what is meant by saving and some ways to save. Discuss how you save.  **View** the presentationon[saving](http://sortedinschools.org.nz/api/v1.0/download?filename=saving-powerpoint&files=32)**.**  After viewing, expand your explanation to include any new information you have learnt.  **Read, analyse**, and **discuss** the infographic about [saving](http://sortedinschools.org.nz/api/v1.0/download?filename=saving-infographic&files=256).  **Explain** how saving helps individuals, whānau, organisations, and governments to reach their goals.  **Read** the Sorted booklet on [Saving in English](https://sorted.org.nz/assets/Order-Collateral-booklets/Sorted-Saving-Booklet.pdf) or in [te reo](https://sorted.org.nz/assets/Order-Collateral-booklets/Sorted-Saving-Te-Reo-Booklet.pdf).  **Describe** how well you are able to save.  **Read** [Identify goals](https://sorted.org.nz/guides/targets-to-shoot-for) and describe your saving goals.  Take the $orted [Money Personality Quiz.](https://sorted.org.nz/tools/money-personality-quiz) Did it accurately guess your money personality?  **View** the [Foodbank New Zealand](https://www.foodbank.co.nz/) website. Contact or visit a local foodbank to find out information about the needs in your local area. What is the purpose of the Food Bank? What are some of the reasons that people visit a Food Bank?  Discuss your impressions of Brian and the Food Package project with a classmate. | **Explain** c[ompound interest](https://sorted.org.nz/guides/compound-interest-friend-or-foe) and give an example of how it works.  **Compare** the[currentsaving options and interest rates](https://www.depositrates.co.nz/interest-rates/term-deposits.html) banks offer clients.  **Explain** the different saving options that banks offer.  **Compare** the interest rates on these different saving options.  **Calculate** interest payments relevant to a prepared saving plan.  **Compare the** different rates of interest that banks offer lenders and borrowers.  **Explain** what is meant by saving and some ways to save. Discuss how you save.  **Complete** the [spending diary.](http://sortedinschools.org.nz/api/v1.0/download?filename=spending-diary&files=46)  **Analyse** your weekly spends and **calculate** the amounts you spend in a day, a week, and a month. Include money spent on things that are “invisible”, like a bus card, apps, or paywave.  **Share** your spending diary with a classmate and discuss what your findings tell you about your spending.  Discuss:   * What your spending habits reveal about your financial identity * Does spending lead to happiness?   **Design** a food package. You can choose who you would like to be the recipients of your Food Package (a whānau group, friends, a couple). You will need to list your choices of food, and their cost, and generate a meal plan on the template. The bag must include enough food for 3 meals a day, for 3 days, and must be non-perishable (able to be stored without refrigeration).  You may find it helpful to use online sources such as the [Countdown](https://shop.countdown.co.nz/?_ga=2.248229447.192355955.1531187282-2112525244.1531187282) or [New World](http://www.ishopnewworld.co.nz/) apps to find the costs of your selections for the package.  Consider your choices and make changes where necessary:   * Which category took up most of the package? * Was there anything that surprised you about the cost of items in the package? * Who included items of personal hygiene in their package? If you didn’t, was there a reason?   **Share** your package design (including items and costs) with your class.  Make a quick calculation of the cost of the food package.  **Classify** the items in your food package into categories:   * dry food * canned or bottled food * other   **Estimate** the total cost of each category (showing your working).  Estimate the percentage of the total cost for each category (showing your working). | Show **evidence** of saving over a short period of time and **justify** the money made in the process.  Monitor saving and **evaluate** how successful you were at the end of a given time.  **Evaluate** the best options for money saved for a short term or medium term, and for long-term saving/investments.  Using the SOS package created in the previous task (Link it/Think it) **Evaluate** ways to decrease the cost of your package but not alter the food choices. Read [Supporting savers](https://sortedinschools.org.nz/students/student-activities/supporting-savers/download?files=70) and discuss, analyse and evaluate the different ways you can save.  **Analyse** ways to decrease the cost of the SOS package without altering the food choices.   * What would be the minimum cost of your S.O.S. package? * What are some ways to cut costs while still providing a bag filled with nutritious choices? |
| **Managing debt** | | |
| NEED IT/KNOW IT | LINK IT/THINK IT | EXTEND IT/DEFEND IT |
| **Explain** what a debt is.  **View** the debt [PowerPoint](http://sortedinschools.org.nz/api/v1.0/download?filename=debt-powerpoint&files=57).  **Read, analyse**, and **discuss** the [infographic](http://sortedinschools.org.nz/api/v1.0/download?filename=debt-infographic&files=259) about debt.  Read the Sorted booklet, [Debt in English](https://sorted.org.nz/assets/Order-Collateral-booklets/Sorted-Debt-Booklet.pdf) or [te reo](https://sorted.org.nz/assets/Order-Collateral-booklets/Sorted-Debt-Te-Reo-Booklet.pdf).  **Explain** what is meant by “getting into debt is easy”. **Describe** how Joe got on top of his debt.  **List** any debts you have. Include debts to whānau members and friends. Do you have any debt?  **List** factors that could impact on your credit rating in the future.  **Explain the concept of** credit.  **Read** [Credit cards – credit card debt and management](https://sorted.org.nz/guides/credit-cards).  **Describe** how credit cards work.  **Write** a list of tips for how to manage credit cards.  **Describe** what a penalty is. | **Explain** why borrowing can be risky if your circumstances change.  **Compare** a range of interest rates from a range of different lenders.  **Explain** the difference between “good” debt and “bad” debt  **Read** [Credit cards – credit card debt and management](https://sorted.org.nz/guides/credit-cards).  **Describe** how credit cards work.  **List** some advantages and disadvantages of credit cards.  **Explain** why school leavers are sometimes encouraged to get credit cards when they leave school?  Complete “Exploring debt – Brainstorm” in [Managing Debt: Is credit the way to go?](http://sortedinschools.org.nz/api/v1.0/download?filename=managing-debt-is-credit-the-right-way-to-go&files=51)and share your findings with a partner or group.  **Reflect** on what you have learnt and what you need to investigate further to gain a full understanding of credit cards and debt.  Complete the activity “Calculating simple and compound interest” in [Managing Debt: Is credit the way to go?](http://sortedinschools.org.nz/api/v1.0/download?filename=managing-debt-is-credit-the-right-way-to-go&files=51) | **Evaluate** how good debt can contribute to your financial identity.  **Read** [Managing Debt: Is credit the way to go?](http://sortedinschools.org.nz/api/v1.0/download?filename=managing-debt-is-credit-the-right-way-to-go&files=51)and **evaluate** payment plans for managing debt on a credit card. **Analyse** the differences between payment arrangements Jill can make to manage her debt. |