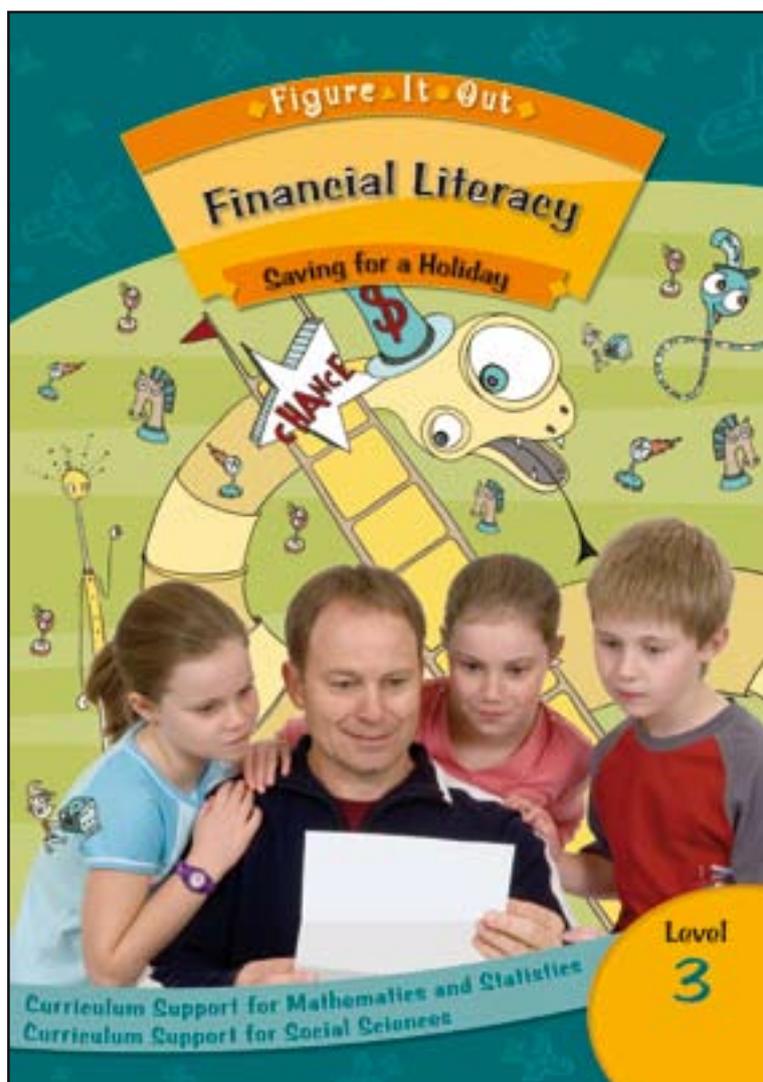


# Answers and Teachers' Notes



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## Introduction to Financial Literacy

The Figure It Out *Financial Literacy* books provide teachers with valuable classroom resources that will support and enhance the delivery of the New Zealand Curriculum (2007).

The books introduce students to real-life scenarios that require financial understanding. The main characters, their peers, and their families face a range of choices involving money, and they model financial competency in their approach to setting goals and making decisions. The characters have some great ideas, and they apply enterprising thinking and processes when making their ideas happen. During the activities, students will see enterprising attributes in action and, while doing so, will gain understandings of economic and financial ideas that will support their evaluations of, or recommendations for, the decisions that the characters need to make. Students will learn that making good financial decisions is trickier than it may at first seem.

Many of the activities in the books are cross-curricular, using mathematics and statistics concepts alongside those of social sciences and other learning areas such as English, technology, and health and physical education. The activities provide opportunities for students to exercise skills, such as those involved in statistical literacy, and to learn about the processes and understandings covered in the curriculum. The characters, in thinking about and applying enterprising skills and attributes to their situation, also demonstrate the range of key competencies outlined on pages 12–13 of *The New Zealand Curriculum*.

### Learning areas

*The New Zealand Curriculum* identifies learning areas that describe what the students will come to know and do.

Future-focused issues are a rich source of learning opportunities. They encourage the making of connections across the learning areas, values, and key competencies, and they are relevant to students' futures. Issues embedded in the Figure It Out *Financial Literacy* books include:

- sustainability – exploring the long-term impact of social, cultural, scientific, technological, economic, or political practices on society and the environment;
- citizenship – exploring what it means to be a citizen and to contribute to the development and well-being of society;
- enterprise – exploring what it is to be innovative and entrepreneurial.

Learning areas also offer opportunities to:

- develop students' knowledge and understandings in relation to economic shifts of the day;
- develop students' financial capability, positioning them to make well-informed financial decisions throughout their lives.

See *The New Zealand Curriculum*, page 39

### Enterprising attributes

The Ministry of Education has devised fifteen enterprising attributes that link to the key competencies for its Education for Enterprise initiative. They engage students in processes that are important for personal and business success. In the Figure It Out *Financial Literacy* books, students can see these attributes in action. The attributes are:

Thinking:

- generating, identifying, and assessing opportunities
- identifying, assessing, and managing risks
- generating and using creative ideas and processes
- identifying, solving, and preventing problems
- monitoring and evaluating

Managing self:

- matching personal goals and capabilities to an undertaking
- using initiative and drive

Relating to others:

- working with others and in teams
- negotiating and influencing
- being fair and responsible

Participating and contributing:

- identifying, recruiting, and managing resources
- being flexible and dealing with change
- planning and organising

Using language, symbols, and text:

- collecting, organising, and analysing information
- communicating and receiving ideas and information.

These attributes represent many of the competencies that the business community is now expecting from new employees, and they are characteristics that students need to practise to be successful in their own lives. As your students work through the Figure It Out financial literacy activities, you could challenge them to find examples of where these enterprising attributes have been applied by the characters. They could also consider how the application of these could benefit themselves, their family, and their community.

The Figure It Out *Financial Literacy* books will inspire students to look for their own opportunities, challenging them to apply the same enterprising attributes that the characters in the series demonstrate. The Ministry of Education's Education for Enterprise initiative can be found at [www.tki.org.nz/education\\_for\\_enterprise/index\\_e.php](http://www.tki.org.nz/education_for_enterprise/index_e.php)

### **Financial understanding**

From an early age, students begin to understand some of the characteristics of money, which include:

- it can be used to buy what we might want or need
- we can save it for use at a later date (financial goals are important)
- we never seem to have enough of it to get what we want!
- parents often expect their children to earn their pocket money by doing chores around the house or in the neighbourhood.

These and other characteristics of money are all important financial mindsets for young people to acquire while still at school. The activities in the Figure It Out *Financial Literacy* books expose students to many of these mindsets.

Many students like to role-model the actions of parents, caregivers, or others in their community, and in doing so, they learn about how our households and communities are organised and run. One of the aims of the Figure It Out *Financial Literacy* books is to inspire students to become enterprising in their own lives and to help them to plan wisely, earn income, and manage the financial side of their lives.

### **Key financial messages for students**

- We need to be financially responsible.
- Our personal goals influence how financially successful we are.
- Our financial decisions determine how "well off" we are now and in the future.
- We may make different financial decisions from those made by someone else because we have different preferences or circumstances.

- Financial planning is important for personal and business financial success.
- We need to consider risk before we make a financial decision.
- We can spend now, save and spend later, or invest our savings.
- The law guides us to make legitimate financial decisions.
- There is a consequence for each financial decision we make; a good financial decision brings benefits.

### Number Framework stages (Numeracy Development Projects [NDP])

The Number Framework Links section for the activities in this book refers to the stages of the Number Framework that are appropriate for the activity.

The relevant stages are:

Stage 4: Advanced counting

Stage 5: Early additive

Stage 6: Advanced additive–early multiplicative.

(Some stage 7, advanced multiplicative–early proportional, links are provided for extension where appropriate.)

### NDP material

Many of the NDP resource books include activities and teaching material for the skills that students need for this Figure It Out book. The books referred to in these notes are:

*Book 6: Teaching Multiplication and Division: Revised Edition 2007: Draft*

*Book 7: Teaching Fractions, Decimals, and Percentages: Revised Edition 2008: Draft* (available March 2008)

*Book 8: Teaching Number Sense and Algebraic Thinking*

FIO pages	NDP book	NDP pages	Content/Activity name
4–6	7	34	Comparing ratios and proportions: Mixing Colours (for these students' book pages, apply the ideas to currency conversions)
10–11	7	31	Working out percentages of amounts: Hot Shots
10–11	8	26, 27	Using a basic set of fractions equivalent to percentages to estimate percentages of given numbers: Estimating Percentages; marking up and down in two steps and rounding answers sensibly: Percentages Problems in Two Steps; Percentage Increases and Decreases in One Step
19–21	7	31, 25	Introducing the concept of finding percentages of amounts: Hot Shots; naming fractions as decimal fractions: Deci-mats
19–21	8	14, 26	Extending students' use of proportional adjustments with division: Doubling and Halving; using a basic set of fractions equivalent to percentages to estimate percentages of given amounts: Estimating Percentages
26	6	60	Solving division problems that have remainders: Remainders

# Figure It Out

## Financial Literacy

### Level 3

### Saving for a Holiday

## Answers

### Pages 1-2: An Invitation

#### Setting the Scene

No answers required. Discussion will vary.

#### Game (Financial Fours)

A game matching terms and definitions. (See copymaster, page 45)

- Costs: Expenses involved in setting up or running a business or enterprise
- Income: Money you earn from work or other sources
- Spending: Paying for goods or services
- Savings: Money you put away (for example, in the bank) for use at a later time
- Choices: Options you have before making a decision
- Decision: Selecting a choice
- Trade-off: What you are prepared to give up to get what you want
- Budget: A plan showing where your income will come from and how you will use it
- Wants: What you'd like to have but don't need
- Needs: Items you must have
- Goods: Items made or produced for sale
- Services: Work done for a person, group, or community
- Consumer: The person who buys goods and services
- Profit: Financial gain, such as the money you make from sales after you have paid for all your costs
- Interest: Money you earn from saving or investing or the extra money you pay for borrowing money
- Loan: Money that you borrow and have to pay back

#### Reflective question

Answers will vary. The family wants to go on a holiday in Australia, but they don't have the money they need to do this. Instead of, or as well as, saving and earning extra, they might look at using a credit card (but they still have to pay that back, plus interest), selling some of their possessions, taking out a personal loan from the bank (at a lower interest rate than a credit card, but it still has to be repaid), or not going to Australia at all.

### Page 3: Challenging Choices

#### Activity

1. a. Economical Airways (based on the extra costs from Brisbane to Christchurch:  $\$809.82$  each for Dad and Alana ( $\$290 \times 2$  [to cover return] +  $\$46 \times 2 + \$9.31 \times 2 + \$10 \times 2 + \$24.60 \times 2 + \$25 \times 2 = \$809.82$  per person) and  $\$523.82$  each for Caitlyn and Oscar ( $\$218 \times 2$  [to cover return] +  $\$9.31 \times 2 + \$10 \times 2 + \$24.60 \times 2 = \$523.82$  per person)  
Easy Fly:  $\$745$  each for Dad and Alana and  $\$550$  each for Caitlyn and Oscar
- b. Based on a,  $\$2,667.28$  ( $\$809.82 \times 2 + \$523.82 \times 2$ ) for Economical Airlines and  $\$2,590$  ( $\$745 \times 2 + \$550 \times 2$ ) for Easy Fly
2. a. Answers will vary. For example, a company may hope that people won't read the small print and will think the main price advertised is a better deal than that in another advertisement that quotes the full price. They want to catch your attention with what looks like a really good deal and make you want whatever they're advertising.
- b. Answers will vary. You may advise the person to check the small print for hidden costs, add in any extra costs, and compare that total to the totals in other advertisements for the same product or service; compare departure and arrival times and weigh them

up against any extra costs; shop around to see if you can find a better deal on the Internet or at a travel agent or with a competing airline; be aware that prices may be higher during school holidays and weekends. Note that in the examples in the activity, the Easy Fly prices are more expensive for children but less expensive for adults than the Economical Airways prices – so which prices are cheaper overall would depend on how many adults and how many children you are buying tickets for.

c. Costs will vary.

### Reflective question

Answers will vary. The cheapest flights might mean departing and/or arriving at inconvenient times (such as 6 a.m.!) or dates; the luggage allowance may be less.

## Pages 4–6: Holiday Plans and Budgets

### Activity

1. Activity plans and total costs will vary.

**Plan A:** If you chose expensive activities to do each day, such as hot-air ballooning, or did two activities in a day, bought most of your lunches, dinners, and snacks, and hired a car instead of taking public transport, this activity plan might cost about A\$4,330 (approximately NZ\$5,200).

**Plan B:** If you chose mostly free activities and a few of the cheapest ones in Brisbane (that is, you didn't visit any theme parks or do extras that cost more money at museums or zoos), took packed lunches, ate other meals at Nana and Grandad's place, and used public transport daily passes, your itinerary might only cost about A\$640 (approximately NZ\$770).

2. Answers will vary.

3. Answers will vary, depending on your choices and the current exchange rate.

4. Answers will vary. Your list might include things such as: passports, travel insurance, suitcases or bags, backpack for day trips, toilet kits, a portable first aid kit, new clothes/jackets/

swimming togs, souvenirs, snacks and drinks, presents to thank Nana and Grandad for having them to stay, presents for friends back in New Zealand, a digital camera.

### Investigations

1.–2. Answers will vary.

### Reflective question

Answers will vary. Each holiday plan will vary in terms of total cost, the range of activities chosen, and the enjoyment of the holiday. If the amount of money spent is more than your family can really afford (for example, if you use a credit card), consequences could include having to pay off credit card debt plus interest or not having enough money to pay bills on your return.

## Pages 7–9: Living Expenses

### Activity One

1. a. \$2,302.95. ( $\$1,895.55 + \$407.40$ )

b. \$59,876.70. ( $\$2,302.95 \times 26$ )

2. a. \$455.25. ( $\$34.95 + \$245.67 + \$29.85 + \$38.50 + \$106.28$ . Note: Some of the ATM withdrawals may also have been spent on food.)

b. \$784.14. ( $\$285.00 + \$18.35 + \$285.00 + \$128.47 + \$67.32$ )

c. \$171.43. ( $\$55.35 + \$8.95 + \$58.63 + \$48.50$ )

d. \$12.00. (Note: some of the ATM withdrawals may also have been spent on entertainment.)

e. \$137.45. ( $\$39.95 + \$97.50$ )

f. \$145.34. ( $\$120.34 + \$25.00$ )

g. \$559.50. ( $\$360 + \$48.00 + \$16.50 + \$135.00$ )

3. a. \$250. ( $\$150 + \$100$ )

b. Answers will vary. It might have been used for paying pocket money, school expenses, occasional treats, small items from a dairy (for example, milk, daily paper), buying a coffee, entry to the swimming pool, and so on.

- c. Answers will vary. Often, if people get extra cash from an ATM (or when they are paying for something else at a shop), that money seems to get used up quite quickly, especially if no record of spending is kept. The account balance can go down without them being fully aware of it, and there may not be enough left in the account to pay a bill when it's due.
- d. Answers will vary. You could keep a small notebook and write down each item you spend money on and how much it cost. At the end of a week, balance this against the total of cash you have left and see if it matches!
4. \$1.300. ( $\$50 \times 26$ )

5. a. Statement transactions from 15 February

Summary for account 065745-054321-00				
Date	Transaction	Withdrawals (\$)	Deposits (\$)	Balance (\$)
15 Feb	AQUATIC CENTRE swimming class fee	135.00		557.31
	TILAS clothing	97.50		459.81
	WORKING FOR FAMILIES payment (fortnightly)		407.40	867.21
16 Feb	PIZZA PALACE takeaways	29.85		837.36
	VEGE HAVEN fruit and vegetables	38.50		798.86
17 Feb	RENT – AUTOMATIC PAYMENT	285.00		513.86
	ATM WITHDRAWAL cash	100.00		413.86
18 Feb	MAINPOWER electricity (monthly)	128.47		285.39
	TELETALK phone (monthly)	67.32		218.07
19 Feb	FAMINE RELIEF AGENCY donation	25.00		193.07
	CHEQUE BUS PASS (monthly)	48.50		144.57
	FRESHWORLD groceries	106.28		38.29
20 Feb	BANK FEES	5.83		32.46
			<b>Closing balance</b>	<b>32.46</b>

- b. The balance is only \$32.46, so the Murphys have actually spent all of their income from this fortnight plus some of the balance in the account at the start of the fortnight.
6. a. Answers may vary. For example, if the Murphys follow the same pattern of spending, the closing balance should be higher because they won't have paid out for all the monthly expenses (which add up to \$296.59). However, if they know there are no more monthly payments due this month, they might have budgeted to spend that extra money on other items, such as clothes, or on leisure activities.
- b. Answers will vary. However, although they may have more money over at the end of the month than at the end of the first fortnight (unless there is an emergency), they haven't enough to spare to save for a holiday from that account if they continue with the same spending pattern.

7. As well as the ideas on page 9, the list might include having small or home-made birthday and Christmas presents; not having birthday parties; watching films on TV or continuing to hire DVDs instead of going to the movies; looking for cheaper brands at the supermarket and cutting back on expensive treat items; choosing a cheaper sport to do for a season; buying clothing or sports equipment second-hand; saving on power costs by having shorter showers, turning off heated towel rails and installing energy-saving light bulbs; and reducing or stopping the famine relief agency donation or similar donations.

### Activity Two

- Oscar: \$360. ( $8 \times \$45$ )  
Caitlyn: \$450. ( $10 \times \$45$ )  
Alana: \$540. ( $12 \times \$45$ )
- Answers will vary.

### Reflective question

Discussion will vary.

*Positive consequences:* you can track what is happening to your money and use that information

to make informed decisions about your spending and to make saving goals; you might find that you are overspending your income slightly and can then adjust your spending before you get too far into debt. If you keep good financial records, you can tell at a glance if you have enough money to spare for something special or to pay an automatic payment that is due (as banks can charge you extra fees if there is not enough in your account to make the payment). You are better prepared if something changes in your life (for example, if you lose your job) and you have to think more carefully about how you spend your money.

*Negative consequences:* you need to spend time putting the information into whichever system you use regularly to keep the records current and worthwhile. If you don't keep your records current, then that past time spent on them may be time wasted. You might get too focused on having a growing credit balance and begrudge spending money on yourself or others (which may be all right as long as you don't expect others to spend their money on you!).

## Pages 10-11: The Cost of Credit

### Activity

- Interest can be looked at in two ways: interest you pay and interest you get. One possible definition: Interest is the amount that you have to pay for using someone else's or the bank's money or the amount that you earn by lending someone else or the bank your money.
  - Yes, Oscar is right.  $24\% \text{ per year} \div 12 \text{ months} = 2\% \text{ per month}$  (as long as the 24% per annum is calculated monthly, as in this case, not daily or just at the end

of the year, because then the effects of compound interest would make the amount of interest slightly different in each case.)

- 34 months, with the final payment being \$50. ( $\$5,000 \div \$150$ )
- \$100. (For example, for 24% per annum,  $\$5,000 \times 0.24 \div 12 = \$100$ ; there are various ways to work out 2% per month.)
- \$4,950. ( $\$5,000$  original loan + \$100 interest – \$150 minimum payment; so they'd have paid only \$50 off the loan.)

- The Murphys would owe \$4,684.60 after 6 months (based on spreadsheet calculations).

	A	B	C	D	E
1	Date	Balance owed	Monthly interest at 24% per annum	Amount paid	New balance
2	April	\$5,000.00	\$100.00	\$150.00	\$4,950.00
3	May	\$4,950.00	\$99.00	\$150.00	\$4,899.00
4	June	\$4,899.00	\$97.98	\$150.00	\$4,846.98
5	July	\$4,846.98	\$96.94	\$150.00	\$4,793.92
6	August	\$4,793.92	\$95.88	\$150.00	\$4,739.80
7	September	\$4,739.80	\$94.80	\$150.00	\$4,684.60
8	Totals		\$584.60	\$900.00	

- b. \$315.40. (The remaining \$584.60 would be interest:  $\$900 - \$584.60 = \$315.40$ )
3. a. \$1,800. ( $12 \times \$150 = \$1,800$ )
- b. Based on a computer spreadsheet:
- i. \$670.60 (a calculator would give an answer of \$670.59).  
( $\$5,000 - \$4,329.40 = \$670.60$ )
- ii. \$1,129.40. ( $\$1,800 - \$670.60 = \$1,129.40$ ; a spreadsheet sum formula would add all the interest amounts together to get \$1,129.40)
4. a. Answers will vary. Ideas could include:  
*Advantages:* they would be able to have their holiday without having to save for it beforehand, so they could go sooner if they wanted to; they could still earn and save money for the holiday, but they could then do extra or more expensive activities during the holiday.  
*Disadvantages:* they would end up having to pay a lot more for their holiday because they would have to pay interest on their loan; it would be hard to remain motivated to work hard to earn money and cut costs to pay back the loan once they'd already been on the holiday and didn't have it to look forward to; the credit card might entice them to spend more than they could afford because the credit card money would be readily available.
- b. Answers will vary. The main problem would be the disadvantages listed in question 4a.

### Reflective questions

- Answers will vary. It may seem “easy money” at first, but once it is spent and the maximum limit reached, it often becomes a huge debt that people never manage to get on top of, especially if most of the repayments are interest. Some people pay off the minimum due every month (which is mostly interest) and then spend that amount or more using the card, so the loan balance never goes down or slowly creeps up to the maximum limit.
- Credit cards can provide a way out in an emergency. You can also organise with the bank to pay your full balance automatically at the end of every month. In most cases, this

means that no interest is charged. It also means that you think twice before you use the card because you need to have the money in the bank to cover the monthly balance. (If not, you end up paying penalties as well as interest.) Used in this way, you can take advantage of the points offers that go with most credit cards but not let the debt become more than you can handle in a given month.

## Pages 12-13: The Great Trade-off Game

### Game

A game evaluating trade-offs when making financial decisions

### Reflective questions

- Answers may vary. Very few people have the money to always buy anything they want. Some people don't have enough money to buy everything they need and go hungry at times. Most people have to go without things they would like to have in order to buy the things they need. Things that might stop you from having everything you want all the time are limited money, limited time, limited energy, parents' decisions, and so on.
- People who rely on “luck” (such as gambling) generally find that they spend more than they ever win. You wouldn't want to rely on luck if the consequences were going to be too uncomfortable for you if you weren't lucky (for example, spending all your money in the hope of winning a big raffle prize). Having some “luck” should be a pleasant bonus if it happens, rather than something you depend on, because you can't count on being lucky.

**Activity**

1. a. \$30. (6 weeks × \$5)  
 b. \$65. (26 × \$2.50)  
 c. \$48. (12 weeks × [2 sessions a week × \$2] = 12 × \$4 = \$48)  
 d. \$60. (12 hours × \$5)  
 e. \$203. (\$30 + \$65 + \$48 + \$60)
2. Answers will vary. Ideas may include loss of time to do other activities, such as playing with his friends.
3. a. \$78. (52 weeks × \$1.50)  
 b. Answers will vary. For example, he wouldn’t have that \$1.50 to save towards going to the movies sometime or to buy a snack.

4. a.

What I might earn by the end of a year	
Doing the four odd jobs	\$203
Saving half of my pocket money	\$78
Total	\$281

- b. No, he is still \$79 short. (\$360 – \$281 = \$79)
  - c. Suggestions will vary, for example, finding extra odd jobs to do, selling toys he has grown out of, or saving a bit more of his pocket money.
5. a. \$416. (\$281 + \$135)  
 b. \$56. (\$416 – \$360)  
 c. Answers will vary. Ideas may include: practise swimming when he goes to the pool with his family, ask his dad or another relative to teach him, practise harder during school swimming lessons, or ask Auntie Alison if he can use her pool to practise.

**Reflective question**

People have different ideas about the balance between work and leisure time. Oscar has to decide whether it is worth spending time and effort during the year earning money to go on a special holiday and have some extra spending money then. He needs to weigh up the consequences of his decisions and decide what will work for him.

**Activity**

1. a. \$32.30. (\$36.90 earnings on 23 March – \$4.60 bus fare)  
 b. \$7.70. (\$12.30 earnings on 7 April – \$4.60 bus fare)  
 c. \$11.60. (Caitlyn has already paid back \$63.40, so she only has to pay \$11.60 to fully repay the \$75: \$23.40 + \$32.30 + \$7.70 = \$63.40)
2. a. \$103.00. (Note that Auntie Helen’s loan is not earnings; \$28 + \$36.90 + \$12.30 + \$25.80 = \$103.00)  
 b. \$88.80. (\$5.40 + \$10.00 + \$55.00 + [\$4.60 × 4]). This includes the cost of the mat, which she now owns.)  
 c. \$14.20. (\$25.80 – \$11.60. She will need to use some of this for bus fares the next time she busks.)  
 d. A profit (\$14.20). (Auntie Helen’s \$75 + \$103 = \$178. Outgoings, including repaying the \$75 from Auntie Helen, come to \$163.80. \$178 – \$163.80 = \$14.20)
3. a. Answers will vary. Ideas may include: On the Saturday when she earned only \$12.30, it might have been raining and there weren’t many people around to watch her or perhaps there were lots of other buskers at the market that weekend. Perhaps the other weekend when she earned a lot more was a holiday weekend and there were lots of people at the market, or perhaps an unexpected tour bus of generous tourists saw her that day.  
 b. \$25.75. (\$103 ÷ 4)
4. a. \$42.30. ([2 × \$25.75] – [2 × \$4.60])  
 b. \$7.05. (\$42.30 ÷ 6 or \$21.15 ÷ 3)  
 c. \$437.20. (\$14.20 from March–April and 6 hours at \$7.05 for the other 10 months is \$14.20 + [6 × \$7.05 × 10] = \$437.20)
5. a. \$183.40. (\$14.20 from March–April and \$42.30 for each of the other 4 months is \$14.20 + [4 × \$42.30] = \$14.20 + \$169.20 = \$183.40)

- b. i. Answers will vary. For example, *positive consequences*: free time for herself and for Auntie Helen every Saturday for the second 6 months; not so much effort required. *Negative consequences*: loses the opportunity to make approximately \$252 more money.
- ii. *Positive consequences*: saving \$150 towards the holiday without having to work for it. *Negative consequences*: misses out on a term's gymnastic lessons; perhaps gets behind or misses training for an important competition or exam; perhaps loses flexibility and muscle tone from not doing regular lessons.
6. \$130. (52 weeks × \$2.50)
7. a. \$463.40. ( $\$183.40 + \$150 + \$130$ )
- b. \$13.40. ( $\$463.40 - \$450$  to family fund)
- c. \$13.20 is not much for spending money, so Caitlyn will need to think of some more ways to earn money. Suggestions will vary, but she could busk for another month or two, earn money another way, perhaps by doing odd jobs for relatives, or she could save more of her pocket money.

### Reflective question

Answers may vary. The main risks are that Caitlyn might not earn enough money to pay Auntie Helen back or to cover the bus fares. A further risk, if she did succeed in paying back the loan, is that she might make no profit from her work. (She spent nearly 2 months busking before she started to make a profit, so if she had stopped at that point because she was finding it too hard or for any other reason, all that time and work would have had no financial gain.)

## Pages 19-21: Alana, the Online Entrepreneur

### Game

A game involving online auctions and profit and loss

### Activity

- Answers will vary each time this game is played.
- \$228. (See page in students' book for various methods of working out 5%.  $\$240 - \$12 [5\%] = \$228$ )
- Answers will vary. One way to calculate whether you have made a profit or a loss is to compare the money you paid Alana to the money you were paid after you spun the spinner. Remember to deduct the \$10 "do up" costs from your profit if you decided to do up the item before selling it.
  - Wording will vary. Profit: the amount of income you have left after deducting all your costs. Loss: the amount by which your costs are higher than your income.
  - Answers will vary. Ideas might include: *benefits*: you might make more profit because people might be willing to pay a higher price, which might be more than it cost you to do up the item; *risks*: you might not get back what it cost you to buy and do the item up, and you've spent more money on it, so your loss would be greater.
  - Answers will vary.

### Reflective question

Answers will vary. Entrepreneurs can make a lot of money, but they can also lose a lot of money if their ideas don't work, someone else starts selling a similar product before they're ready to sell theirs, or people lose interest in the activity the entrepreneur has invested a lot of money in.

## Pages 22–25: Savings Ups and Downs

### Game

A game exploring financial decisions

### Activity

1. **a.–b.** Answers will vary each time you play the game.
2. **a.** Answers will vary.
  - b.** Answers will vary. You might feel sad, bad, or mad about it; the person who made the decision might feel they need to make it up to their family somehow.
3. **a.** Answers will vary. How you use “Chance” could affect the outcomes.
  - b.** Discussion will vary.
4. Answers will vary. Ideas to think about: decisions about what to spend your pocket money on, which clothing items to buy if your parents give you a set amount to spend, what to save up for, how you might earn some extra income, or whether you might give some of your money away to a good cause. For example, using the jeans example in the illustration:

### Reflective question

Answers will vary. No one can be absolutely sure that financial decisions will work out because this depends on the amount of risk involved and other aspects out of our control. However, careful planning and thinking about consequences will help in decision making.

Buy cheaper jeans with money from Mum		Earn extra money to buy label jeans	
Positive consequences	Negative consequences	Positive consequences	Negative consequences
I would have a new pair of jeans now, with no extra effort or time needed.	I might not like any of the cheaper jeans.  My friends might not think I'm cool in the cheaper jeans.	I would have a really nice pair of jeans that I like and that my friends would think are cool.	I would have to spend lots of time earning the extra money to pay for them.  I wouldn't have that money to spend on other things, like a new top.  I'd have to put up with wearing my old jeans in the meantime.

### Activity

1. Fruit + Fibre Bars are the cheapest:  
 $\$4.16 \div 8 \text{ bars} = \$0.52 \text{ a bar}$ . Muesli Munchers:  
 $\$3.24 \div 6 \text{ bars} = \$0.54 \text{ a bar}$
2. Answers will vary. Ideas may include:
  - a. *Advantages:* it costs less money.  
*Disadvantages:* it may be an inferior product that doesn't work as well, last as long, or taste as good; it may be made using dubious practices such as unfair wages for the people that made it (sweatshop labour); it may not have the "cool" factor of a more expensive brand.
  - b. *Advantages:* it may be a more reliable or superior product, with better after-sales back-up if something goes wrong with it; it may make you look cool to your friends.  
*Disadvantages:* it may cost more than a similar, unbranded product that is just as or even more healthy or efficient.
  - c. *Advantages:* you know that the people who are making the product are being paid a fair wage for what they do instead of perhaps working in bad conditions for very little money.  
*Disadvantages:* the product may cost more to buy; it may be harder to find; there may be a smaller range.
  - d. *Advantages:* the package catches your eye and makes you take a look at the product when it's in the shop, so you might find products you didn't know about before; it looks nice in your home, and you get something free.  
*Disadvantages:* you probably pay more for the cost of the packaging; the price may in fact cover the cost of the "free" extras; the extra packaging may not be environmentally friendly.
  - e. *Advantages:* bulk products are often cheaper; you can stock up on items when they are on special; you have less packaging, which is environmentally friendly; you won't run out of things as often.  
*Disadvantages:* you might only have enough money to buy what you need for that week rather than buying ahead, so you have to go without something else; you might not have enough room to store large amounts; you might not use it before it expires or goes bad; it might be difficult to use, for example, a huge catering tin of tomato paste; or it might encourage you to use more than you normally would because you have a lot in your cupboard.
  - f. *Advantages:* they are usually cheaper, and it is environmentally friendly to recycle and reuse.  
*Disadvantages:* you wouldn't get the latest design or technology; the item might not work as well or might break down; you probably won't have a warranty as you would with a new product.
  - g. *Advantages:* you can shop from the comfort of your home at any time of day; you may save time (especially if you live in a rural area or a long way from shops); you could compare prices at a range of shops easily; it may be easier to stick to your budget this way if you aren't distracted by the sight of lots of other products around you.  
*Disadvantages:* sometimes it's hard to work out whether you want a product or not if you can't see it and touch it in person; you might not find out about new products that you would see displayed in a shop; it might be harder for you to stick to a budget online, especially in online auctions when you are bidding; you might get caught out with people not sending you the things you have paid for.
  - h. *Advantages:* the products won't have as much negative impact on our world and its resources, for example, by not using toxic chemicals or non-biodegradable packaging that fills up landfills or by using renewable resources such as specially planted pine trees instead of native rainforest timber.  
*Disadvantages:* they may cost more; there may be less of a range to choose from; they may not work as effectively.
  - i. *Advantages:* food that is labelled as organic has to conform to certain standards and rules regarding the sorts of fertilisers and pesticides that can be used; if a product

is certified as being organic, you know that it has met these standards and you can be sure about what you are eating; some people believe that organic food is healthier and tastes better.

*Disadvantages:* it may cost more; there may be less of a range to choose from; there may be more imperfections in organic fruit and vegetables (because they haven't been sprayed with chemicals).

### **Reflective question**

Answers will vary. "Shopping around" means not buying an object from the first place you see it advertised or available. It means comparing prices, quality, warranties or guarantees, availability of replacement parts, and so on. There are consumer websites that help you to do these comparisons.

*Advantages:* you can choose the best deal, product, or price out of those you have compared; you can get an overview of the product range available so that you can choose the one that is best for your needs; sometimes you can use information that you find out to get a better deal somewhere else if you ask them to match a competitor's price; you can compare and weigh up other factors that are important to you, like the product being organic or made using fair-trade principles.

*Disadvantages:* shopping around is time-consuming and takes a lot more effort than just buying the first one that you see (which might turn out to be the best value and quality after all that searching around!); you might take so long doing it that you miss out on a special deal or sale; the product might be sold out when you go back to buy it.

## **Pages 27-28: Spending Splurge**

### **Game**

A game focusing on needs and wants

### **Activity**

1. Answers will vary, depending on the game.
2. Opinions will vary.
3.
  - a. Needs should include passport, tickets, departure tax. Note: Although travel insurance is not included in this game, it is usually considered a "need" for overseas travel. Wants include items like brand-label shoes and snacks. You could argue either way for some items, for example, new shoes could be a need if you don't have any that are suitable to take or a want if you already own several pairs that would be fine.
  - b. Choices and reasons will vary.
4.
  - a.-b. Answers will vary.

### **Reflective question**

You can, for example, if you use a credit card, but you have to pay it back with interest. And if you don't have the spare money to cover that interest, there are other consequences to take into account, such as getting further into debt or not having the money for basic requirements, such as food.

**Figure It Out**  
**Financial Literacy**  
*Saving for a Holiday*  
**Teachers' Notes**

**Overview: Level 3**

<b>Title</b>	<b>Key Financial Ideas</b>	<b>Page in students' book</b>	<b>Page in teachers' book</b>
An Invitation	<ul style="list-style-type: none"> <li>• Many people set personal financial goals.</li> <li>• Creating financial plans (budgets) can help to achieve financial goals.</li> </ul>	1–2	17
Challenging Choices	<ul style="list-style-type: none"> <li>• Sometimes you may need to explore a range of choices, including the financial cost of each choice.</li> <li>• Decision making means deciding on the best choice for you.</li> </ul>	3	18
Holiday Plans and Budgets	<ul style="list-style-type: none"> <li>• You need to explore your options and their costs.</li> <li>• You may have the same options as someone else, but your decision may not be the same as theirs.</li> </ul>	4–6	19
Living Expenses	<ul style="list-style-type: none"> <li>• Financial records can help you keep track of your spending.</li> <li>• Financial information helps people explore new ideas and plan ahead.</li> </ul>	7–9	22
The Cost of Credit	<ul style="list-style-type: none"> <li>• People who lend you money (give you credit) usually charge you interest.</li> <li>• Borrowing money has financial consequences (positive or negative).</li> <li>• Credit cards can be an expensive way to borrow money.</li> </ul>	10–11	24
The Great Trade-off Game	<ul style="list-style-type: none"> <li>• You have choices about how you spend or save your income.</li> <li>• Most people have limited income and often make “trade-offs”.</li> </ul>	12–13	29
Oscar’s Odd Jobs	<ul style="list-style-type: none"> <li>• You need to take responsibility for the financial decisions that you make.</li> <li>• The more you earn, the more you can save.</li> </ul>	14–15	30
Caitlyn’s Busking Business	<ul style="list-style-type: none"> <li>• Earning income involves taking on responsibilities.</li> <li>• Keeping financial records reduces risks.</li> </ul>	16–18	32
Alana, the Online Entrepreneur	<ul style="list-style-type: none"> <li>• Profit or loss equals selling price minus cost price and any other expenses.</li> <li>• Entrepreneurs need to have many skills and be prepared to take risks.</li> </ul>	19–21	34
Savings Ups and Downs	<ul style="list-style-type: none"> <li>• Financial plans should make allowances for unforeseen risks.</li> <li>• Your financial decisions can have negative and positive consequences.</li> </ul>	22–25	37
Bargain Hunters	<ul style="list-style-type: none"> <li>• What you decide to spend your money on today has consequences now and in the future.</li> </ul>	26	38
Spending Splurge	<ul style="list-style-type: none"> <li>• Even on holiday, there is a difference between needs and wants.</li> <li>• Budget or pay for needs first and then decide which wants you can afford.</li> </ul>	27–28	40

## Introduction to the Notes for Saving for a Holiday

### Use of headings

The notes that follow for the various activities, games, and investigations in the level 3 Figure It Out *Financial Literacy* book have headings and sub-headings such as Financial Language, Financial Understanding, and Mathematics and Statistics. These are designed to help you focus on the parts of the notes that are most useful to you as you help your students work through the students' book. Where appropriate, extra investigations and tasks are suggested.

### Context for financial understanding in *Saving for a Holiday*

Many New Zealand households struggle to find the money for a holiday. Staying with extended family or friends elsewhere in New Zealand or in Australia is a common scenario that can make a holiday feasible. (You may need to discuss with your students the fact that having someone to stay or staying with someone does incur costs for the host, such as power, food, and possibly transport costs, and in many cases, the guests help pay their way, which also needs to be accounted for in the holiday budget.)

The characters in this level 3 book demonstrate sound financial thinking as they explore the cost of saving for a holiday. The students using the book are also challenged about financial thinking. Creating budgets to record expected costs is a skill that students will practise a number of times as they work through the book.

The characters also demonstrate enterprising attributes that support their decision making. Collecting, organising, and analysing information in the process of making a decision is one attribute that students will see in action and practise themselves in this book. Students will also experience the integration of mathematics, social sciences, English, and other learning areas as they work through the book.

### The mathematics and statistics in *Saving for a Holiday*

The mathematics and statistics in this book target level 3. However, the topic of the book lends itself to an inquiry learning approach, so it is possible to engage the students in your class who are above and below level 3.

Numeracy links are provided for students at stages 4–7 on the Number Framework. All the students in your class should be involved in the financial literacy, social sciences, and other learning area discussions and tasks. If you have any stage 7 students in your groups, expect them to move quickly on to any additional investigations and tasks provided in these notes.

The financial literacy focus of these activities means that your involvement as the teacher is essential, particularly before you set any of the tasks to be completed independently. Prior teaching and discussion will enable your students to complete the work with understanding.

As in all numeracy work, students benefit greatly from sharing and discussing their ideas. This discussion is important in supporting their conceptual understanding.

### **Mathematics and Statistics Achievement Objectives**

Not relevant for this activity

### **Number Framework Links**

Not relevant for this activity

### ***Financial Language***

(See the full glossary at the end of these teachers' notes.)

Financial goals, financial plans, money, expenses, income, spending, saving, choices, decision, trade-off, budget, wants, needs, goods, services, consumer, profit, interest, loan

### **Setting the Scene**

#### ***Financial understanding***

This section introduces the scenario of a family saving to go on holiday in Australia. The Financial Fours game that follows introduces some financial literacy vocabulary that students will encounter and use as they work through the other activities in the book.

You could use page 1 as an opportunity for shared reading, perhaps with different students role-playing the family members.

To brainstorm the items the Murphy family might need to pay for (see the discussion question on page 2), you could put the students into groups of 3–4 and give each group a pile of sticky notes or similar-sized pieces of paper and felt pens. Group members each write their own ideas down, one idea on each piece of paper, say it aloud, and then put it down in the middle. The others can “hitch-hike” by using the idea to generate related ideas. When the brainstorming time is up, the group looks back through all the idea papers and classifies them as groups onto a larger piece of paper. You can send students on a “spying mission” to look at other groups’ brainstorms. Challenge them to come back with two different ideas each to add on to their list or get students to go on a “walk, look, talk” with a classmate to compare other groups’ brainstorms with their own.

### **Game**

#### ***Financial understanding***

The **Financial Fours** game exposes students to financial literacy vocabulary.

As the students play the game together, they will discuss their ideas and understandings with their classmates. If they have a difference of opinion, the students will need to negotiate and influence to achieve a resolution.

Students may find many of the financial literacy terms unfamiliar and difficult to match with their definitions. It’s worthwhile giving lots of input here and encouraging the students to become familiar with the terms because they introduce some key financial concepts that will be built on in later activities. It’s easier to have meaningful discussions about these concepts later if you have built a shared understanding of the words that can be used to describe the ideas.

Before playing the game, you could use it as a puzzle so that the students can see all the terms and their definitions together. Photocopy the game board and get pairs of students to cut up the squares and to match them up with the definition cards. Then give them the definitions answers sheet (see copymaster) to see how many they have paired up correctly and which ones they need to change.

You could play the game the first time as a whole class in two teams, in game-show style. Photocopy the game board onto an overhead transparency or enlarge it to A3 size; get the teams to decide co-operatively which term each definition matches as you draw it from a box and read it aloud as an excited game-show host would. Use transparent counters to cover the words on the OHP.

Another way to use this material is to photocopy and enlarge each term and its definition to create a reference word wall that students can look back at during later activities. Try to use the words yourself as often as possible in discussions.

### Mathematics and Statistics Achievement Objective

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals and percentages (Number and Algebra, level 3)

### Number Framework Links

Students could use stage 6 strategies to work out the cost of the flights. Students at lower stages will need access to a calculator.

### Financial Language

Choices, financial cost, decision making, economical, tax, cost, cheapest

### Activity

#### Financial understanding

In this activity, students use advertisements to work out the cost of flying the family to Brisbane and back and compare the choices available. They will need to read and understand a range of information presented in a variety of forms.

Before the students start, familiarise them with the activity by asking questions such as:

*What do travel companies mean when they use the words “one way”, “single”, or “return”?*

*What do you think some of the charges outlined in the ad might be for?* (People to scan you and your luggage to make sure that you're not taking anything dangerous onto the plane, airport facilities including car parks, lounges, toilets, and baggage carousels)

*How old do you think a person should be before they are called an adult?*

*Do you think it's fair that airlines charge 12-year-olds the full adult fare?* (Answers may include yes, because they take up the same seat and luggage room on the plane, or no, because they don't have an adult's earning capacity, so they shouldn't have to pay as much, and they may be lighter than most adults.)

After the activity, encourage your students to look for travel or product advertisements in newspapers, magazines, or on the Internet. They may find ones that seek to “hook” the reader by offering what looks like a really good deal on first glance but that have terms and conditions that are less attractive on further investigation (which the advertisers are hoping the reader won't do!). For example, an advertised child's fare may be much closer to the full adult fare by the time small-print surcharges and taxes are included. Give the students the opportunity to share their examples with the class.

Students with Internet access will find lots of examples if they enter “misleading advertising” into a search engine.

### Social Sciences Links

Achievement objectives:

- Understand how people make choices to meet their needs and wants (Social Studies, level 2)  
Students could discuss:
  - What is impacting on choices the family have to make?
  - Where have they got the information from?
  - What other things may impact on the choices they will make?
- Understand how people make decisions about access to and use of resources (Social Studies, level 3)

### Other Cross-curricular Links

English achievement objectives:

- Purposes and audiences: Show a developing understanding of how texts are shaped for different purposes and audiences (Listening, Reading, and Viewing, level 3)
- Language features: Use language features appropriately, showing a developing understanding of their effects (Speaking, Writing, and Presenting, level 3)

Students could explore the language used in advertisements that aim to persuade you to buy something and make a collage or list of examples they find.

They could write their own advertisement to persuade their relatives to buy a good or service that they can produce, such as dog walking, dishwasher loading, computer game tutoring, or baby-brother minding.

## Pages 4-6: Holiday Plans and Budgets

### Mathematics and Statistics Achievement Objectives

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)
- 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
  - communicating findings, using data displays (Statistics, level 3)

### Number Framework Links

This activity involves the addition of money, entering financial data in a table, and converting currencies.

Students could use stage 6 strategies to add up the cost of the holiday plans, but the calculations could get long and repetitive and the students may lose interest in the financial literacy aspect. Students will be more willing to change and adapt their plans if they have calculators readily available. They could also use a spreadsheet, with appropriate formulae. (See page 24 of these notes.)

Students working at stage 7 should be able to understand the concepts involved in converting the costs to New Zealand dollars in question 3. To prepare them for the concepts involved in comparing ratios and proportions in currency conversions, see the table of NDP material on page 4.

### Financial Language

Budgets, choices, cost, decisions, options, price, money, exchange rate, cheapest, afford

### Activity

#### Mathematics and statistics

In this activity, students work out how much it might cost the family for 9 days on holiday (excluding airfares), depending on which options are chosen out of a range of choices.

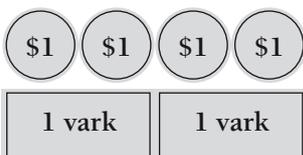
Some students may be put off by the amount of reading in this activity. If so, you could have all the students look at the choices available on page 5, skim-read them, and then either share one they'd like to do if they went to Brisbane or find one that they think looks interesting that no one else might have noticed. If anyone has visited Brisbane, get them to share their favourite memories. They could also do some Internet research on what places such as the Queensland Museum offer (for example, their Dinosaur Garden).

Then show the students the blank holiday plans form (see copymaster, page 46) and talk through what they will need to record for plan A and plan B.

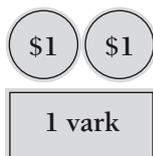
Encourage the students to use "reverse estimation" when they use a calculator, that is, to look at their calculator answer and decide whether or not it is sensible. Use of a calculator doesn't guarantee a correct answer; pressing the wrong keys or using an incorrect equation can happen at any time!

For question 3, a mathematical skill that the students may have difficulty with is converting the cost of the holiday plans from Australian dollars to New Zealand dollars. The students may not be aware that different countries use different currencies and that one of our dollars is not necessarily worth the same as another country's dollar or whatever is the base denomination, for example, pound (United Kingdom), ringgit (Malaysia), shilling (Kenya), and rand (South Africa). The exchange rate is the mathematical calculation that matches up the currencies of any two countries. Simplify the problem for students with the following scenario:

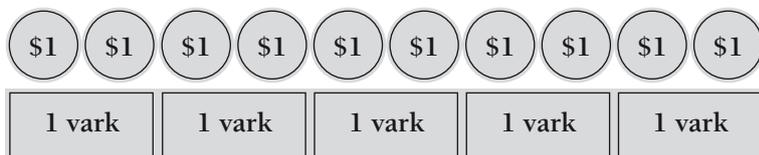
Imagine we are going to the land of Vanark, where you buy things using varks. If you give the Bank of Vanark four of our dollars, they will give you two varks in exchange so that you can buy things in the Vanark shops.



How much would you need to give the Bank of Vanark if you wanted to buy just one vark? ( $\$4 \div 2 = \$2$ )



How many dollars would you need to give the Bank of Vanark if you wanted to buy five varks? (5 lots of  $\$2 = \$10$ )



Use a ratio table to predict how much of our money you'd need to buy these varks:

<b>Varks</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>12</b>
<b>NZ dollars</b>	<b>2</b>	<b>4</b>	<b>10</b>	<b>20</b>	<b>24</b>

Using the information that one vark is worth \$2, what would you do to work out how many dollars you need to buy 1 000 varks? (If 1 vark : 2 dollars, then 1 000 varks :  $2 \times 1\ 000$  dollars = 1 000 varks : 2 000 dollars)

How much New Zealand money would you need to buy one Australian dollar? (The rate varies from day to day, so do an Internet search on "currency exchange" + Australia + New Zealand to find a currency converter or use the newspaper to find the rate.)

Can you use this information to work out how much New Zealand money you would need to buy 20 Australian dollars?

If  $A\$1 : NZ\$1.20$ , then,  $A\$20 : NZ\$ \square$ ? What did you do to work it out? (If each Australian dollar costs \$1.20 in New Zealand dollars to buy, you would need 20 lots of NZ\$1.20 to buy 20 Australian dollars.  
 $20 \times \$1.20 = \$24.00$ )

If your holiday plan costs \$4,350 Australian, what would you do to work out how many New Zealand dollars it would take to buy \$4,350 Australian? (4 350 lots of NZ\$1.20, which is  $4\ 350 \times 1.20 = NZ\$5,220$ )

What would happen if the New Zealand dollar went down in value compared to the Australian dollar between now and the time the holiday is planned for? How might this affect the cost of the holiday? (It would then cost more New Zealand dollars to buy each Australian dollar, so the cost of the holiday would increase.)

### Financial understanding

The information that the students collect, organise, and analyse will be essential for making the best decision for themselves. As students brainstorm lists of possible travel ideas, they are generating, identifying, and assessing opportunities.

After the students have made their plans, get them to work out the difference in cost between their expensive options and their cheapest options. Ask:

*What are the positive consequences of spending this extra money on doing all your favourite activities?* (You will have fun experiences together as a family, create great memories, learn about new things, and so on.)

*What are the negative consequences?* (You won't have that extra money available to use when you get home, – which might affect your ability to pay bills on time; if you borrowed that extra money, you still have to pay it back later; the activities may not be as enjoyable as you had hoped, but the money will be gone, and so on.)

*Do you think it's worth the extra money to do your favourite activities?* (This is a good opportunity to point out the key financial idea at the top of the students' page that people differ in their decisions even though the options [or choices] may be the same.)

For question 4, get the students to brainstorm their lists in small groups and to then use a highlighter to classify which items they would define as wants (desirables) and which ones would be needs (essentials for the holiday to happen). Ask: *What is an example of an item that one group might have classified as a need while another group classified it as a want? Can both be justified?* (One example might be an item of clothing, such as shoes – it would be a need if you didn't have any but a want if you already owned several suitable pairs and just wanted a newer pair to take.)

## Investigations

### Financial understanding

You could invite a travel agent to visit your class for the students to interview about issues involved in planning a New Zealand or overseas holiday.

As further investigations, the students could find out about the currency of another country apart from Australia and share what they find out with the class. Ask *What is the standard unit of that currency and how many of them could you buy with one New Zealand dollar?* Some students may be able to bring in samples of notes and coins from other currencies left over from their family's travels.

Have the students track how the New Zealand dollar is valued compared to another currency of their choice for a week or two and investigate possible reasons the dollar might go up or down against this currency.

Students could extend their exploration of currency exchange by investigating *The Economist's* "Big Mac index", which compares how much it costs to buy a standard item in various countries around the world (available on the Internet, updated yearly; search under "big mac index"). Ask *Why might it cost so much more or less in different countries to buy the same item?* (Labour and resource costs might differ; for example, in some Pacific islands, they have to import the lettuce for burgers, so it costs a lot more; or in some countries they might pay their workers less; there may be scarcity of the item, which drives the price up; the currency might be over- or under-valued.

### Social Sciences Links

Achievement objectives:

- Understand how people view and use places differently (Social Studies, level 3)  
Have the students explore current issues being debated in the media, for example, use of waterfront land or green-belt development, and debate these issues.  
The students could look at an "issue" in school, in the newspaper, on television, on the Internet, and so on, where different perspectives on a place have caused the issue.
- Understand how people make decisions about access to and use of resources (Social Studies, level 3)  
The students could discuss:
  - why the family might have different perspectives about where they want to go and what they want to do on their holiday
  - how these different perspectives could be respected and satisfied
  - how these decisions could be made.

### Other Cross-curricular Links

English achievement objective:

- Processes and strategies: Integrate sources of information, processes, and strategies with developing confidence to identify, form, and express ideas (Speaking, Writing, and Presenting, level 3)  
Activity for students: If you had a family of visitors staying with you for a week, what activity choices would they have in your local area or within convenient travelling distance? Make a brochure that lists some family activities and their cost (you could download pictures from your local information centre or cut up brochures to create your brochure). If you were choosing 3 days' worth of activities from your brochure, what decisions would you make? Which activities would be good for your class to visit on a school or camp trip?

### Mathematics and Statistics Achievement Objectives

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)
- Equations and expressions: Record and interpret additive and simple multiplicative strategies, using words, diagrams, and symbols, with an understanding of equality (Number and Algebra, level 3)
- Statistical literacy: Evaluate the effectiveness of different displays in representing the findings of a statistical investigation or probability activity undertaken by others (Statistics, level 3)

### Number Framework Links

The activities involve interpreting and entering financial information in a table and the addition, subtraction, and multiplication of money amounts.

In **Activity One**, students could use stage 6 strategies to work out the balance and to calculate how much has been spent in various categories, but the calculations are repetitive and using a calculator or a spreadsheet would help them to generate the information quickly so that they can then concentrate on analysing it.

Students working at stage 6 should be able to complete **Activity Two** using numeracy strategies.

### Financial Language

Financial records, spending, afford, bank statement, income, expenditure, withdrawal, running balance, deposit, transaction, balance, closing balance, payments, expenses, savings account

### Activity One

#### *Financial understanding / Mathematics and statistics*

In this activity, students learn that financial records tell a story and help people keep track of their spending. By analysing their patterns of spending and income, people can make more informed decisions.

The students are required to collect, organise, and analyse information from the family's bank statement for the last fortnight. This is important for good decision making. The students need this information to help them find ways for the family to make informed decisions about their spending and develop a plan for saving. It may be more motivating for the students to complete this activity co-operatively rather than as an individual or paired written exercise. There will be opportunities for you to lead guided group discussion after each question.

You may need to remind the students that there are 26 fortnights (and one or two extra days) in a year. The students may be daunted by all the information in the bank statement and may need to be guided in decoding it. Spend some time making sure that they understand any unfamiliar vocabulary, such as:

*transaction*: a commercial deal or process, for example, you might agree to pay a shop \$20 in exchange for them giving you a T-shirt, or someone might agree to pay you \$5 if you clean their car

*withdrawal*: money taken out of a bank account

*deposit*: money put into a bank account

*balance*: the amount of money left in a bank account after some has been taken out or put in

*income*: money that is earned or that is coming into the household through government grants, such as benefits or Working for Families payments.

Ask: *How much time does this bank statement cover?* (14 days, from 6 to 20 February)

*How could the little pictures (icons) help you to find information quickly?* (You could use them to identify groups of transactions that are similar, for example, all the times the family spent money on the car.)

*Which transactions on the bank account statement would be similar to ones on your family's statement?* (You would probably expect to see payments to supermarkets and petrol stations, but you might not necessarily see a payment to an aquatic centre unless you were taking swimming classes.)

Before the students answer question 2, draw a table like the one below on the whiteboard. Ask them to rank the items they think the family would spend the most on and the ones they should spend the least on. *Which type of expense do you think will be the greatest? ... the least? Why did you choose that one?*

Type of expense	Cost over a fortnight
Food and groceries	
Household running costs	
Transport	
Entertainment and leisure	
Clothing	
Hire purchase and loan payments	

Now allocate pairs of students responsibility for one of the different aspects. Each pair is to work out the cost (using the bank statement) and to write it up in the table so that the costs of the various categories can then be compared in discussion. Ask: *Were your predictions accurate about which types of expenses would be greatest and least? What surprised you?*

Students could discuss question 3 in small groups. It should prompt discussion about how money in one's wallet or purse seems to "disappear" if no record is kept of what it is spent on.

For question 4, ask *What things might the family use the money in the emergency savings account for?* (Unexpected bills, such as medical emergencies, travelling to a funeral, replacing or repairing an essential item like a washing machine that breaks down, and so on.)

Questions 5 and 6 are important for helping the students understand what the overall financial picture is for the Murphy family. Ask: *Can you find the "Balance carried forward"?* *How much is it? What does it mean?* (It's on the top of the Balance column and is \$325.45. That's how much money was in the account at the end of the previous statement on the 6th of February.)

*What kind of operation do you need to do in your calculation if there is a deposit into the account?* (Addition)

*What about for a withdrawal?* (Subtraction)

*How could we find out whether the Murphy family is spending more than they earn over 2 weeks or whether they saved some money over the fortnight?* (Compare the balance carried forward with the closing balance. If the closing balance is bigger, then they have saved that amount.)

Help the students to realise that the Murphys actually spent slightly more than they earned over this fortnight because they started the fortnight with \$325.45 in their account and ended it with only \$32.46. It may be that Mr Murphy knew they would have no more monthly expenses in the next fortnight and would be able to increase the balance for the start of the next month.

## Activity Two

### Financial understanding

In this activity, Dad challenges Alana, Caitlyn, and Oscar to contribute money to the holiday fund. By doing this, they are accepting some of the financial responsibility for meeting the costs of the holiday. Dad has also given them an incentive to earn extra money because they can keep any extra funds for their own spending money.

The students will be generating, identifying, and assessing opportunities when they think up new ideas to earn money to fund their portion of a holiday.

### Mathematics and statistics

Encourage the students who are working at stage 7 to solve these problems mentally and to share their strategies. Possible strategies include using:

- place value partitioning:  $8 \times \$45 = (8 \times \$40) + (8 \times \$5) = \$320 + \$40 = \$360$
- halving and doubling (making proportional adjustments):  $12 \times \$45 = 6 \times \$90 = \$540$
- using a known fact and compensating:  $8 \times 45$ : if I know that  $10 \times 45$  is 450, then  $8 \times 45$  is 2 lots of 45 less than that; or  $\$450 - (2 \times \$45) = \$450 - \$90 = \$360$ . *Book 6: Teaching Multiplication and Division: Revised Edition 2007: Draft*, Multiplication Smorgasbord, page 52, shows how to introduce these different strategies.

### Related teaching ideas

Get your students to design a financial record-keeping template that they could use for their personal financial records. It could be a ruled-up notebook or a table or spreadsheet they've designed on the computer. Encourage the students to take their personal record-keeping design home and use it; make an opportunity a couple of weeks later for them to share their record keeping.

This is a good opportunity to teach the "sum" function on a spreadsheet program to work out the balance column automatically. A formula will take the previous balance, subtract any withdrawals or add any deposits, and give the new balance. The formula for one line might be something like  $=\text{SUM}(E3-C4+D4)$ , instructions that tell the computer to take the balance in the cell E3, subtract any number that might be in cell C4, and add on any number that might be in cell D4.

	A	B	C	D	E
1	Summary for account 065745-054321-00				
2	Date	Transaction	Withdrawals	Deposits	Balance
3	6 Feb	Balance carried forward			\$325.45
4	7 Feb	LEO SERVICE STATION petrol	\$55.35		\$270.10
5		SHOE BARN sports shoes	\$39.95		\$230.15
6	8 Feb	PRESLEY SYSTEMS LTD 2 weeks' salary		\$1,895.55	\$2,125.70
7		AFTER-SCHOOL CARE (10 days)	\$360.00		\$1,765.00
8		AUTOMATIC PAYMENT to emergency fund (fortnightly)	\$50.00		\$1,715.70
9		LOAN PAYMENT to 065745-054321-10	\$120.34		\$1,595.36
10	9 Feb	BURGER BONANZA takeaways	\$34.95		\$1,560.41
11		FRESHWORLD groceries	\$245.67		\$1,314.74
12		FABULOUS FILMS – DVD hire	\$12.00		\$1,302.74
13					

#### Social Sciences Links

Achievement objective:

- Understand how people make decisions about access to and use of resources (Social Studies, level 3)  
Students could do a social inquiry into spending at their school and the decisions that the principal, the board of trustees, and so on have to make in running the school. For example, they could look at decisions about access to and use of different resources, such as balls and books.

## Pages 10–11: The Cost of Credit

#### Mathematics and Statistics Achievement Objectives

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)
- Patterns and relationships: Generalise the properties of addition and subtraction with whole numbers (Number and Algebra, level 3)
- Equations and expressions: Record and interpret additive and simple multiplicative strategies, using words, diagrams, and symbols, with an understanding of equality (Number and Algebra, level 3)
- Statistical literacy: Evaluate the effectiveness of different displays in representing the findings of a statistical investigation or probability activity undertaken by others (Statistics, level 3)

#### Number Framework Links

This activity involves addition, subtraction, multiplication, and division calculations using money amounts, calculating 2 percent interest, and interpreting and entering financial information in a table.

Students need to be using stage 6 strategies in order to work out the interest charges in this activity. (See the table of NDP material on page 4.)

## **Financial Language**

Credit, interest, financial consequences, saving, per annum, loan limit, balance owed, minimum payments, principal, borrow, debt

### **Activity**

#### **Financial understanding**

In this activity, the students explore the use of credit cards as a way of borrowing money and the cost to a borrower of using someone else's money. This extra money paid to the lender is called interest. This activity will help students to understand that every financial decision we make has consequences, and those consequences can be positive or negative.

Understanding borrowing through credit cards engages students in thinking about being fair and responsible because their actions impact not only on themselves but also on others. Being fair and responsible is about taking responsibility for decisions made.

In the activity, students explore what it would cost to borrow \$5,000 on a high-interest credit card and how long it might take to pay that amount off (providing that none of the money paid off is reborrowed). The activity highlights the need to look carefully at the cost of various choices so that an informed decision can be made.

Although the credit card deal looks attractive in this scenario, it would take 56 months or 4 years and 8 months to pay off the \$5,000, by which time the family would have paid a total of \$8,322.08 to the credit card company, with \$3,322.08 of that being interest payments. This information comes as quite a shock to students when they work it out! Ask them to work out how old they would be by the time the Murphys paid off their 9-day holiday.

Many students will find the concepts and calculations in this activity difficult and will benefit from working co-operatively through the questions as part of a teaching group. There are many opportunities for teacher input and discussion as they go through each question.

#### **Mathematics and statistics / Financial understanding**

Before you look at the activity together, it is worth introducing the concept of interest and compound interest to the students. The following information may be of help.

Interest can be looked at in two ways: the amount that you pay to be allowed to use someone else's money or the amount that you earn by lending someone else (like the bank) your money.

You could introduce the idea of interest by saying: *Let's imagine that (student's name, for example, Jim) lends me \$100, which I have to repay at the end of the year. At the end of the year, I give him back the \$100. Is that fair?* Expect a variety of responses, for example: yes, because that's what you owed him and you've paid it back, or no, because Jim didn't have the use of the money for the year, so you should pay him some extra money because he has allowed you to use his money.

*How might Jim feel about me having his money for most of the year and then giving him back the same amount?* Expect a variety of responses, for example: He might feel OK about that, or he might wish he had some compensation for not being able to use his money himself for that time.

*What does Jim miss out on by not having the use of his \$100 for the rest of the year?* He can't spend it if he wants to; he can't use it to invest and earn interest from someone else.

*What does Jim get out of the deal?* Perhaps he feels good about having helped you out by lending you the money, but he doesn't get any financial gain. He might worry about whether he'll get his \$100 back at all.

*What about if I paid him some extra money to make it worth his while financially? How much extra money do you think I should pay him?* Take a class survey by getting the class to put their hands up or write the amount down when they agree with it. *Who thinks \$1 extra would be fair? \$5? \$10? \$20? \$50? \$75? \$100? More?*

You can demonstrate visually how interest is added on to the amount of the loan (the principal) by giving each student a strip of paper about 10 centimetres long. (You should probably tell them that the interest rate you are using is higher than usual, to make the mathematics easier, and that usually the borrower would be paying back some of the principal each year.)

This strip of paper represents the amount of your loan.

loan amount

You are charged 25 percent interest on your loan at the end of 1 year. Fold your strip of paper to find out how long 25 percent or one-quarter of your loan is.

Get another piece of paper, cut an amount that is the same as 25 percent of your loan, and tape it alongside. This whole strip is how much you owe the bank now after the first year.

loan amount

interest  
year 1

← amount owed to the bank →

You can demonstrate the effect of compound interest by continuing the same process:

Now another year goes past, and the bank charges you another 25 percent interest on the whole amount that you owe them. Find out how long 25 percent or 1 quarter of your amount owing is now. Cut a piece of paper to show the second year's interest, and tape that on.

interest  
year 2

loan amount

interest  
year 1

← amount owed to the bank →

Why is the interest in the second year more than the interest in the first year? (Because it's one-quarter of the loan plus the previous year's interest, not just one-quarter of the loan amount. This is called compound interest.) What would happen to the amount you owe after 3 more years if you didn't repay any of the money? (It would get bigger and bigger!) Some students may be interested to continue to show this visually with their strips of paper. They could explore the fact that if you lend money, the converse applies.

Introduce the scenario on the page: *How long do you guess it might take the Murphy family to pay back their loan?* Record the guesses so that you can refer back to them later during a reflective discussion.

For questions **1d** and **e**, one way to bring the scenario to life would be to "act it out". Give one student a sign with InstantBuys Credit on it and \$5,000 of tens money. Another student represents the Murphy family. Give a running commentary for the students to act out: *Here's the InstantBuys credit card company saying "Yoo-hoo! Come and borrow \$5,000!" So the Murphy family say, "That's handy", and they borrow \$5,000 (credit-company student gives them the \$5,000) and go flying off to Australia on holiday (Murphy-family student flies around room). They have a wonderful time, doing lots of exciting activities. Now they're back from holiday, it's the end of the month, and the credit card company says, "Hey, you have to start repaying your loan now. We'll just work out how much you still owe us ... hmm ... you borrowed \$5,000, and we're charging you 24 percent interest per annum, calculated monthly, that's 2 percent a month ..."*

How much money do the Murphys owe InstantBuys right now? Write on the board: 2% of \$5,000 =  $\square$

Get the students to solve this problem in small thinking groups of 3–4, and then get them to share their solutions and strategies for solving it with the whole group. Make calculators available if needed.

Expect responses such as:

Using a known fact and building from there: "I know that 2 percent of \$100 is \$2, so 2 percent of \$1,000 must be \$20, and 2 percent of 5 000 must be 5 times that.  $5 \times \$20$  is \$100."

Finding 1 percent and doubling it to get 2 percent: "I know that 1 percent of \$5,000 is \$50 because one-hundredth of 5 000 is 50. I have to double that to get 2 percent of \$5,000:  $2 \times \$50 = \$100$ ."

Using a calculator and multiplying by 0.02, which is equivalent to 2 percent: " $0.02 \times 5\ 000 = 100$ ."

Continue the scenario:

Now the Murphys say, "But we only have to repay \$150 a month, so here it is." InstantBuys credit says, "Thank you very much for that; we'll send you a statement saying how much you still owe us and how much of that \$150 you just paid us was interest and how much was principal (the original \$5,000 loan)."

Get the students to return to their thinking groups to work out the InstantBuys credit card monthly statement (draw a blank table on the board). Then get them to share their solutions and strategies for solving it with the whole group. Students at stage 7 should be able to do this using strategies in mental or written form, but others may need the support of tens materials or calculators.

InstantBuys Credit Card Monthly Statement	
Amount borrowed (principal)	
Amount owed after 1 month	
Amount repaid	
Amount still owed after first repayment	

Expect responses such as:

Amount borrowed (principal): \$5,000

Amount owed after 1 month: \$5,100 (\$5,000 principal + \$100 interest = \$5,100)

Amount repaid: \$150 (\$100 of this is interest, \$50 is principal)

Amount still owed after first repayment: \$4,950 (\$5,100 – \$150 repayment = \$4,950).

Question 2 is where the reality of paying back only the minimum amount required starts to hit home for the students as they work out the amount the Murphys would still owe after 6 months.

For this question, the students need to be able to work out 2 percent of numbers that are not as tidy as the initial \$5,000, for example, 2 percent of \$4,846.98. Brainstorm the range of strategies that the students could use for finding 2 percent of numbers, such as:

- finding 1 percent (by dividing by 100) and doubling it
- dividing by 50 (because  $[\square \div 100] \times 2$  is the same as  $\square \div 50$ )
- finding 1 tenth and dividing that by 5, or multiplying by 0.02 on the calculator (because 0.02 is equivalent to 2 percent, so 2 percent  $\times \square$  is the same as  $0.02 \times \square$ ).

Encourage the students to make links between the different strategies by listing them all on the board and talking about how some are easier to do mentally and some are more efficient for a calculator.

A computer spreadsheet for question 3 is given below. (Note that if the table figures were calculated using a calculator, there would be some minor differences because the computer spreadsheet works with the entire unrounded numbers even though only two decimal places are shown. The cells are formatted for currency, which involves rounding to two decimal places.) You could show it to the group on OHP or enlarged to A3, revealing it line by line to maximise the shock value of how little of the principal of the loan is paid off compared to the amount of interest paid month by month.

	A	B	C	D	E
1	Date	Balance owed	Monthly interest at 24% per annum	Amount paid	New balance
2	April	\$5,000.00	\$100.00	\$150.00	\$4,950.00
3	May	\$4,950.00	\$99.00	\$150.00	\$4,899.00
4	June	\$4,899.00	\$97.98	\$150.00	\$4,846.98
5	July	\$4,846.98	\$96.94	\$150.00	\$4,793.92
6	August	\$4,793.92	\$95.88	\$150.00	\$4,739.80
7	September	\$4,739.80	\$94.80	\$150.00	\$4,684.59
8	October	\$4,684.59	\$93.69	\$150.00	\$4,628.29
9	November	\$4,628.29	\$92.57	\$150.00	\$4,570.85
10	December	\$4,570.85	\$91.42	\$150.00	\$4,512.27
11	January	\$4,512.27	\$90.25	\$150.00	\$4,452.51
12	February	\$4,452.51	\$89.05	\$150.00	\$4,391.56
13	March	\$4,391.56	\$87.83	\$150.00	\$4,329.40
14	Totals		\$1,129.40	\$1,800.00	

Although the Murphys have paid \$1,800 over the year, \$1,129.40 of this has been interest payments and they still owe \$4,329.40. The interest payments will get lower each year because the balance will be lower, but this is conditional on the Murphys not borrowing against the card until they have paid it all off. You could discuss with the students how they think the Murphys would cope with this. After all, they borrowed the money in the first place because they didn't have the money they needed for the holiday. Now they've had the holiday, but they have to find \$150 a month to pay off the cost of that holiday. Where is this \$150 going to come from? (You might go back to the bank statement on page 8 of the students' book, which shows that the Murphys usually used up most of their income.)

The students could create a spreadsheet to calculate how long it would take the Murphys to repay the whole loan if they continued to repay only the \$150 a month. They will need to use the “product” function to work out the interest charged each month, for example: “=PRODUCT(B2,0.02)”.

Use the “sum” function to work out the new balance owed on each line by creating a formula in cell E2 such as “=SUM(B2,C2,-D2)”. This formula tells the computer to take the amount owing in cell B2, add on the interest charge in cell C2, and deduct the repayment of \$150 in cell D2 to work out the new balance.

The computer data for months 54–56 will look like this (spreadsheet works on unfounded numbers):

	A	B	C	D	E
1	Date	Balance owed	Monthly interest at 24% per annum	Amount paid	New balance
2	September	\$359.16	\$7.18	\$150.00	\$216.35
3	October	\$216.35	\$4.33	\$150.00	\$70.67
4	November	\$70.67	\$1.41	\$72.09	0.00
5	Totals			\$8,322.09	

So the loan of \$5,000 would cost the Murphys an extra \$3,322.09 and take them 56 months (over 4½ years!) to pay off – and during that time, they would have \$150 a month less to spend on other things than they had before their holiday.

### Extension

#### Financial understanding

As an extension, you could work through the following with your more able students:

*When you have a mortgage from the bank (a really big loan that many people get so that they can buy a house or business), the interest is usually calculated daily rather than monthly, like the InstantBuys credit card. If the InstantBuys Credit Card Company decided to calculate their interest daily instead of monthly, would the Murphys end up repaying more or less?*

(More, because the interest would keep compounding, and interest would be charged on interest more often.)

*The interest charged on a mortgage might be 7.75 percent, while that on a credit card might be 19.65 percent. (The students could research actual amounts.) Why do you think there is such a difference in the interest charged?*

(Answers will vary but may include the fact that a mortgage is for an actual building or property, which can be sold by the bank to recoup their money if necessary, whereas a credit card could be used for any purchases, including holiday expenses – there may be nothing to sell if the person hasn’t the money to pay the amount owing.)

Some students, particularly proportional thinkers working at stage 7, might be ready to explore the concept of compound interest and the effects of inflation on prices. *Book 8: Teaching Number Sense and Algebraic Thinking*, Inflation, page 45, introduces the compounding effect of inflation on prices.

There are online loan calculators that work out compound interest for mortgage loans, for example, at [www.sorted.org.nz](http://www.sorted.org.nz) and at [www.consumeronline.org.nz](http://www.consumeronline.org.nz). Get the students to explore the impact on the length of the loan and the total amount of interest paid if higher repayments are made or if one-off repayments of \$1,000 are made each year. For example, say: *The Consumer’s Institute of New Zealand advise that “Giving up a \$3 treat (like a cappuccino) a week can save you thousands on your mortgage.” What would happen if the Murphys were able to repay just \$12 extra a month on their loan?*

*The Retirement Commission asks questions such as “What would you do if you got an unexpected \$1,000 given to you?” What would happen if the Murphys put that \$1,000 into paying off some of their loan?*

### Social Sciences Links

Achievement objective:

- Understand how people make decisions about access to and use of resources (Social Studies, level 3)  
Students could interview a budgeting adviser from the local Community Advice Bureau about ideas for managing their own pocket money effectively and what they can do now that will help them to avoid getting into difficulties when they get older and have access to more money.  
They could do a social inquiry with the school principal and board of trustees about costs at school or special projects such as building a school hall or a gymnasium.

## Other Cross-curricular Links

English achievement objectives:

- Purposes and audiences: Show a developing understanding of how to shape texts for different purposes and audiences (Speaking, Writing, and Presenting, level 3)

Students could pretend to be Nana and Grandad in Brisbane and write to the Murphys to persuade them to use/not to use the InstantBuys credit card to fund the holiday.

- Processes and strategies: Integrate sources of information, processes, and strategies with developing confidence to identify, form, and express ideas (Speaking, Writing, and Presenting, level 3)

Students could collect examples of advertisements for easy finance and analyse which features of the advertisements are designed to “hook” the reader or viewer. How many of the advertisements make the financial impact of the loan really clear? Get the students to re-present one of the advertisements in the same style but making the financial consequences of the loan the main aspect that stands out instead. For example, “No-fuss, no-hassle electronic equipment loans! With us, you can still be paying off your stereo long after the technology is out of date! 3 years interest free, but after that, you have to pay monthly for another 5 years, and no! you can’t pay your loan off early with a lump sum because we want the compound interest and compulsory insurance you’re going to have to pay!” [www.consumeronline.org.nz](http://www.consumeronline.org.nz) has useful reference articles about the consequences of using in-store credit deals.

## Pages 12–13: The Great Trade-off Game

### Mathematics and Statistics Achievement Objectives

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)
- Number knowledge: Know basic multiplication and division facts (Number and Algebra, level 3)
- 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 (Statistics, level 3)

### Number Framework Links

The mathematics aspects of this activity are adding and subtracting 1-digit numbers from a game-score total (2-digit numbers). Students working at stage 4 and above will be able to cope easily.

### Financial Language

Choices, income, trade-off, decisions, goal

## Game

### Financial understanding

In this game, the students learn that when they make a decision to save, spend, or invest their savings, there is usually a “trade-off”: something they have to give up, sacrifice, or be willing to let go of in order to get what they want or need. Trade-offs are not necessarily financial. In this game, in which the students have to collect a specified number of money, fun, and free-time tokens, they may have to give up some of their fun or free-time tokens in order to earn some money, or they may have to spend some money to gain some fun tokens. They are presented with choices, which they can opt for or not, depending on whether it will help them to reach their goal.

Students will experience being flexible and dealing with change when they have to trade off their money, fun, and free time in order to meet their goal in the game.

### Setting the scene

Write the definition of trade-off on the board: *A trade-off is what we give up in order to get something else (opportunity cost).* Talk about the vocabulary and then ask the students:

*If you decided to do swimming lessons next term, what would you gain from that?* (New skills, fitness, fun, ...)

*What would you have to give up in exchange for those gains?* (Money, time, maybe an alternative pastime that you could have been doing at the swimming lesson time, such as watching television or playing with a friend, and so on.)

The things that you have to give up are the trade-offs. Talk with a classmate about what some of the trade-offs involved in doing the following would be:

- getting a weekly paper round
- going to the movies this Saturday night
- going cycling with your friends.

#### *After the game*

Ask: What strategies did you use to help you achieve your goal in this game? How did having a specific goal affect your decisions? People differ in their decisions, even though their choices might be the same. Why might this be?

Give an example of a sports star who appeals to your students. What trade-offs do you think \_\_\_\_\_ has had to make in order to be successful at \_\_\_\_\_ ?

What trade-offs have you had to make in order to meet a goal or to do or buy something you really wanted? Tell us about your goal and trade-offs.

What trade-offs will the Murphy family have to make if they decide to go on holiday? (The time and effort they put into earning and saving for the holiday could have been used doing other things. They might have to trade-off doing some fun activities that cost money during the year while they are saving, in order to have fun in Brisbane.)

Challenge the students to make a goal for something they'd like to do or buy. Get them to make a list of the trade-offs they'd have to give up in order to do or buy it. For example, getting better at knowing their basic facts, buying a new computer game, earning some money, joining a new sport, reading a long book, and so on.

#### *Homework activity*

The students could ask someone they know, who has done something they admire or wish they could do, what trade-offs the person had to make to achieve their goal (examples could be: being a sports representative or a leader at school, having an interesting job, travelling, owning a dog or a nice car).

### **Social Sciences Links**

Achievement objective:

- Understand how people make decisions about access to and use of resources (Social Studies, level 3)  
Students could explore the positive effects and the trade-offs involved for a school "issue" such as a proposal to do more physical activity during the school day.

### **Other Cross-curricular Links**

English achievement objective:

- Ideas: Select, form, and communicate ideas on a range of topics (Speaking, Writing, and Presenting, level 3)  
Students could debate dilemmas such as:  
Does money make you happy? Is it possible to be unhappy if you have lots of money? Is it possible to be happy with not much money? Would you rather have lots of fun or lots of money?

## **Pages 14–15: Oscar's Odd Jobs**

### **Mathematics and Statistics Achievement Objective**

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)

### **Number Framework Links**

This activity involves addition, subtraction, and multiplication of 1- to 3-digit numbers. Students working at stage 6 should be able to solve all the problems in this activity mentally or in paper form. Those who are at stage 5 may need materials such as tens money or a calculator to enable them to complete the activity.

### **Financial Language**

Financial decision, earn, save, savings account, spending, income, trade-off

## Activity

### Mathematics and statistics

For this activity, the students will need to know that there are about 52 weeks in a year and about 26 fortnights. Encourage your students to think of the problems in question 1 multiplicatively by asking them for a number sentence that describes each one, for example, earning \$5 a week sweeping leaves for 6 weeks can be written as 6 lots of \$5 is □ or symbolically as  $6 \times \$5 = \square$ .

Students could design a record-keeping notebook or spreadsheet or graph that Oscar (or they) could use to keep track of their income and progress towards their savings goal.

### Financial understanding

In this activity, Oscar realises that he has to put in a great deal of effort if he is going to meet his financial goal (Dad's challenge). This hard work will have many benefits and also some opportunity costs (trade-offs). Students will realise that personal goals influence financial success or otherwise.

Oscar matches his personal goals and capabilities to his small "odd-jobs" business in order to raise money for the family holiday. This enterprising attribute is very important if people are to manage themselves and reach their potential.

In this activity, students calculate what Oscar could earn if he does odd jobs and they compare what he earns with his savings goal. They also gain an understanding of the importance of planning for personal and financial success.

Question 2 involves trade-offs (also called opportunity costs), that is, what we give up in order to get something else. This concept was developed in The Great Trade-off Game on pages 12–13 of the students' book.

For question 3, talk about why Oscar has to do some unpaid chores because he's a part of the family and what those chores might be. Ask: *Do you have jobs that you're expected to do, that you don't get paid for, but which you do to help make your household function because you're a member of the family? What are they? Why are those jobs sometimes described as "chores"?*

Students may be interested in creating their own odd-jobs business. They could design a flier for their extended family and friends advertising their services. As a class, have them brainstorm a list of the sorts of things students at their age level could do to earn money.

### Social Sciences Links

Achievement objective:

- Understanding how people make decisions about access to and use of resources (Social Studies, level 3)

The students could discuss:

- how Oscar will decide if the jobs are worth the effort
- what he will have to know or organise before he makes a decision to take on a particular job (for example, will Uncle Rob provide the car wash equipment?)
- what the different costs and trade-offs are that Oscar must think about (for example, work versus play, work versus homework).

### Other Cross-curricular Links

Technology achievement objective:

- Outcome development and evaluation: Investigate a context to develop ideas for potential outcomes. Trial and evaluate these against key attributes to select and develop an outcome to address the need or opportunity. Evaluate this outcome against the key attributes and how it addresses the need or opportunity (Technological Practice, level 3)

Students could develop a local odd-jobs business for themselves by exploring what jobs they could offer to do and whether there would be a market for them.

### **Mathematics and Statistics Achievement Objectives**

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)
- Equations and expressions: Record and interpret additive and simple multiplicative strategies using words, diagrams, and symbols, with an understanding of equality (Number and Algebra, level 3)
- Statistical literacy: Evaluate the effectiveness of different displays in representing the findings of a statistical investigation or probability activity undertaken by others (Statistics, level 3)

### **Number Framework Links**

The mathematics calculations in this activity involve interpreting and using financial information in a table, addition, subtraction, multiplication, and division of money amounts, and finding the average or mean of a group of numbers.

Students need to be capable of stage 6 thinking, but doing all the calculations mentally could make the activity very long and tedious and distract them from understanding what the financial record shows overall. Encourage the students to look at each problem and to decide for themselves whether using a calculator would be more efficient in each case rather than simply reaching for it by default (remind them that sometimes it can take longer to key in the problem than to solve it mentally). Encourage them to use “reverse estimation” when they use a calculator, that is, to look at their calculator answer and decide whether or not it is sensible. Just because a calculator is used does not guarantee a correct answer; pressing the wrong keys or using an incorrect equation can happen at any time!

### **Financial Language**

Business, earnings, income, financial records, risk, money received, money paid, balance, loan repayment, expenses, profit, loss, projected profit, hourly rate, savings

### **Activity**

#### **Financial understanding**

In this activity, Caitlyn learns that keeping financial records and a close eye on her busking business transactions reduces the risk of not having enough money for her holiday. This type of planning is important for personal and business financial success.

Caitlyn monitors and evaluates her financial records as she works towards her business and personal goals. She will be keen to identify any potential problems and solve them before they become a negative for her enterprise.

This activity requires students to decode the information in the financial records of a busking business and to use that information to predict future earnings and whether or not Caitlyn will meet her savings goal.

To set the scene, ask the students if they or anybody they know has busked and get them to share their experiences and to talk about any costs they had or profit they made. Ask:

*If you wanted to busk for money, what might you have to pay for in order to be able to perform? What might your costs be?* (Equipment, council permit [some councils require this], transport to get there and back, you might have to pay your older brother or sister to supervise you ...)

*What factors might affect the amount of money you make?* (How good you are, how busy it is where you are busking, the weather, how long you do it for, whether people have seen you busking before or you are new to them, and so on.)

#### **Mathematics and statistics**

In questions 1 and 2, Caitlyn's financial records can be daunting for students to decipher, and they will need lots of teacher input to help them to decode them. One idea could be to photocopy them onto OHP or to blow them up to A3 size and reveal them horizontally line by line, talking about what each column header means and what has happened to the balance in each row. Some students may benefit from acting out the transactions with play money.

Get the students to work out the new balances after each lot of money has been received or paid out and also the answers to questions 1 and 2 when the relevant part of the cash book is reached. They could do this co-operatively in thinking groups of 3–4 and then share their solution and strategy with the whole group.

Ask: *What kind of calculation do I need to do if money has been received?* (You need to add it on to the balance.)  
*What kind of calculation do I need to do if money has been paid out?* (You need to subtract it from the balance.)

For question **1c**, the students need to be aware that the earlier repayment to Auntie Helen of \$23.40 (March 9) means that Caitlyn will have reached the \$75 pay-back figure from her 21 April earnings, excluding bus fares, and will, in fact, have some over. (This is the beginning of her making a profit.)

Check that the students know definitions for profit and loss to use in question **2d**.

Students need to know how to find the average of four numbers to complete question **3**. The average, or mean, of a group of numbers is found by dividing the total by the number of numbers in the group. You could draw a strip diagram to represent the varying amounts of earnings. It doesn't matter if your proportions aren't exact, but if your strip is about 50 centimetres long, each dollar would be about half a centimetre, so \$27.60 would be about 14 centimetres long.

Say: *These are the different amounts of money that Caitlyn earned the four times that she busked in June and July:*

\$28.00	\$36.90	\$12.30	\$25.80
---------	---------	---------	---------

*You can see that some weeks she received a lot of money and some weeks she didn't get much. If Caitlyn was to share out the whole amount of money she got so that each week she got the same amount instead of some small amounts and some big ones, how could she work out how much she'd have each week?*

Make another line underneath your strip diagram and divide it up into four even portions. *How much money would be in each of these four even parts? What would you have to do to work it out?*

\$28.00	\$36.90	\$12.30	\$25.80
?	?	?	?

Get the students to talk about their strategies in small groups and to then share back with the whole group. Expect responses such as: "We know that the length of the whole strip would be \$103.00 because we added up all the four amounts of money ( $\$28.00 + \$36.90 + \$12.30 + \$25.80 = \$103.00$ ). If you share \$103.00 evenly into four sections, there would be \$25.75 in each part because  $\$103.00 \div 4 = \$25.75$ ."

\$28.00	\$36.90	\$12.30	\$25.80
\$25.75	\$25.75	\$25.75	\$25.75

Tell the students that what they have just worked out is the average or mean of those four different amounts of money, a single number that represents all four amounts.

For question **4**, you could use the same sort of strip diagrams to help the students visualise that to work out Caitlyn's hourly rate, they need to take her whole profit and divide it by the number of hours she busks for:

\$42.30 projected profit for the whole 6 hours (over two Saturdays)					
\$□ profit for 1 hour?					

For question **6**, the students will need to know that there are about 52 weeks in a year.

### Extension

#### Financial understanding

As extension questions after question **7**, ask: *Dad pays for Caitlyn's gymnastics classes. Do you think that Caitlyn should have the money that would have been spent on fees to go towards her savings goal if she drops them for a term? Does it make a difference to your answer if she was to drop the classes for a whole year? What about if she used the money for something else?*

What's the most Caitlyn could expect to save if she busked once a fortnight for 12 months and saved all her gymnastics fees and all her pocket money? ( $\$437.20$  busking +  $[4 \times \$150]$  gym fees] +  $[52 \times \$5]$  pocket money] =  $\$1,297.20$ )  
If she did this, what would the trade-offs be? (Having no spending money during the year, using all her free time every second Saturday morning for a year to busk, and having no gymnastics classes for a year, which may mean she finds it hard to get back into serious gymnastics after such a long break)  
Do you think that it would be worth it for Caitlyn to save all this money for the holiday? What would you do if you were Caitlyn? What do you think a good balance would be?

Reflecting back on the Key Financial Ideas would be useful at this point. Ask:

What responsibilities did Caitlyn have to take on?

How do you think keeping financial records reduces risks?

As a follow-up, the students could play the Lemonade Stand Game (do an Internet search on "lemonade stand game" to choose from a variety of them) where they have to buy sugar, lemons, cups, and ice and vary the lemonade recipe and the price depending on the weather forecast to try and make a profit.

Afterwards, discuss the risks that had to be taken in the game and whether or not those risks paid off financially.

### Social Sciences Links

Achievement objective:

- Understand how people make decisions about access to and use of resources (Social Studies, level 3)  
Students could interview their peers to see what skills and/or talents they have that they could use to set up their own "busking business". They could discuss why or why not they might do this. The students could also think about this in terms of their own skills and/or talents.  
Students could do a social inquiry into the trade-offs involved in an actual "busking business" or use Caitlyn's as the basis for their investigation.

### Other Cross-curricular Links

English achievement objective:

- Purposes and audiences: Show a developing understanding of how to shape texts for different purposes and audiences (Speaking, Writing, and Presenting, level 3)  
Students could create a poster to advertise Caitlyn's busking act or their own fund-raising stall. Different groups could be assigned particular audiences, such as general public, school children, teenagers, parents, and teachers, and asked to use text and visual features on their poster that would appeal to that particular group.

## Pages 19–21: Alana, the Online Entrepreneur

### Mathematics Achievement Objectives

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)
- 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 (Statistics, level 3)

### Number Framework Links

These pages involve adding and subtracting 2-digit whole numbers and finding 5 percent of an amount.

Students working at stage 6 should be able to do the mathematical calculations in the game mentally.

Students working at stages 4 and 5 should also be able to do the calculations but may need the support of materials such as tens money.

Students at stage 7 should be able to do question 2 in the activity using mental strategies. (See the table of NDP material on page 4.)

### Financial Language

Profit, loss, selling, selling price, cost price, expenses, entrepreneur, risks, buying, auction, bid, benefits

## Game

### *Financial understanding*

This game simulates earning profits in auctions by buying and reselling items and enables the students to explore what it means to be an entrepreneur. (An entrepreneurial person has a skill set that sets them apart. These skills are not just financial; they include all the enterprising processes and attributes.) However, the students will also quickly learn that along with the benefits of this behaviour, there are a number of risks. Risk needs to be considered before making a financial decision.

Successful people identify risks before embarking on a project or making a decision. Students will engage in identifying, assessing, and managing risks during the game as they weigh up the value of an item and determine whether they can make a profit from it.

If the students use two packs of playing cards instead of tens money in the game, the picture cards are worth \$10, the ace \$1, and the number cards are worth their face value. Each player gets \$55 to start with, made up of ace, 2, 3, 4, ... 10 in a single suit. The rest of the cards go in the kitty. If you don't have 10-sided dice, normal 6-sided ones are fine, although the students may end up with slightly lower starting prices.

Introduce the game by asking if any students have been to an auction or if their family has bought items in an online auction. Ask them to describe what happens. Then ask:

*Why might people choose to auction off something instead of just setting a price themselves?* (They may not be sure of how much to ask, so they want to “let the market speak”, or they may think that they can get a higher price in an auction because people will compete against each other to buy the item.)

*Why might some people pay more in an auction than they would if there was just a price tag on the item?* (The excitement and competitive nature of the bidding process might make them bid more than they had planned to because they might think, “If I just bid another \$2, I might win!”)

You could demonstrate the first round of the game with the whole class so that they get the idea of the procedure. If you do this, you could summarise the process on the board:

1. Throw the dice to find the starting price.
2. Bid and see who wins the auction; the winner pays Alana.
3. Decide if you will resell the item “as is” or if you will pay \$10 to do it up.
4. Spin and get the money you are owed from the kitty.

Encourage everyone in the group to work out the amount owed to the player, to “make sure they are correct”, so that they are all involved in the mathematical thinking for each round.

## Activity

### *Financial understanding*

In this post-game activity, the students define profit and loss and learn how to calculate figures to get a financial result. The activity emphasises that a profit is a desirable outcome from any business transaction. People need to be accountable for their financial decisions, and having a sound understanding of the financial concepts is an important part of that and of accepting the need to be financially responsible.

### *Mathematics and statistics*

In question 2, students at stage 6 or below may need support to work out 5 percent of an amount. To use the strategies suggested in Alana's hint box, students need to understand that:

1. You can find a benchmark that's easy to calculate mentally, like 10 percent or 50 percent of the amount, and manipulate that to work out 5 percent of the amount. For example, for 5 percent of \$45 = □: 10 percent of \$45 is \$4.50 ( $\$45 \div 10 = \$4.50$ ); 5 percent is half as much as 10 percent, so to work out 5 percent of \$45, we can halve \$4.50.  $\$4.50 \div 2 = \$2.25$

or:

50 percent of \$45 is \$22.50 ( $\$45 \div 2 = \$22.50$ ); 5 percent is 1 tenth of 50 percent, so to work out 5 percent of \$45, we can divide \$22.50 by 10.  $\$22.50 \div 10 = \$2.25$ .

2. If you know that 5 percent and one-twentieth are equivalent, you can work out one-twentieth of \$45 instead. You may have to make some proportional adjustments to make the calculation easier. So, for  $\$45 \div 20 = \square$ : halving both makes the calculation easier in this case, but gives the same answer:  $\$22.50 \div 10 = \$2.25$ .
3. If you are using a calculator to work out 5 percent of \$45, you can use the % button and key in “45 x 5%”, or if you know that 5 percent is equivalent to the decimal fraction 0.05, you can key in “0.05 x 45 =”.

### Extension

#### Financial understanding

As a follow-up, you could discuss:

*Which enterprising processes and attributes did Alana show?*

*What risks did you have to take when playing this game? Did they pay off financially for you?*

*What have you learned from playing this game that might be useful if you ever use a real online auction to buy and sell?*

#### Social Sciences Links

Achievement objectives:

- Understand how groups make and implement rules and laws (Social Studies, level 3)
- Understand how people make decisions about access to and use of resources (Social Studies, level 3)

Students could examine the difference between wholesale and retail and the role of the “middle person”. They could investigate and perhaps visit real auctions, for example, the wholesale flower markets, cattle markets, or property auctions, or investigate online auctions. They could interview an auctioneer using questions they have generated themselves.

An interesting side exploration could be into the art of haggling, where each buyer negotiates their own price with the seller. Ask: *What is haggling? How does it work? What are the advantages and disadvantages of haggling compared to having a fixed price tag?* Travel guides to countries that use haggling in everyday transactions are useful sources of information (for example, many Middle Eastern countries).

Another side exploration could be into bartering, when goods or services are exchanged without using money. Students could investigate the “green dollar”.

Get the students to interview a local entrepreneur, for example, a small business owner, and ask them to talk about how they have demonstrated some of the enterprising attributes, such as generating, identifying, and assessing opportunities, or identifying, solving, and preventing problems.

#### Other Cross-curricular Links

Technology achievement objective:

- Outcome development and evaluation: Investigate a context to develop ideas for potential outcomes. Trial and evaluate these against key attributes to select and develop an outcome to address the need or opportunity. Evaluate this outcome against the key attributes and how it addresses the need or opportunity (Technological Practice, level 3)

Students could become entrepreneurs themselves by identifying a need and developing a technological outcome that could be marketed. You could hold your own class auction with goods that the students have made (food items, jewellery, craft items, cards, and so on) or services that they can provide each other (being a desk tidier, doing someone else’s monitor jobs for a day, teaching a soccer skill, giving someone batting practice, and so on). Invent a class currency that they can earn during the week and then use for the auction on Friday.

### Mathematics and Statistics Achievement Objectives

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)
- Equations and expressions: Record and interpret additive and simple multiplicative strategies, using words, diagrams, and symbols, with an understanding of equality (Number and Algebra, level 3)
- 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 (Statistics, level 3)

### Number Framework Links

These pages involve adding and subtracting 2- and 3-digit whole numbers and recording and interpreting financial information in a table.

The mathematical calculations should be able to be done mentally by students working at stage 6. Students at stage 5 should also be able to do these calculations, but they may need the support of materials such as money.

### Financial Language

Financial plans, risks, financial decisions, transaction record, savings, savings target, savings account, deposits, withdrawals, balance

### Game

#### Financial understanding

In this game, the students learn that there are consequences, both positive and negative, for every financial decision they make. A good financial decision is likely to bring more benefits than a bad one. Although you can't always prepare for every eventuality, making allowances for unforeseen circumstances helps minimise the risks.

The students will be keen to identify, assess, and manage the risks of the “Chance” squares in the board game. This is good thinking!

In this simulation game, the players try to reach a savings target as a team by earning and saving income; at the same time, they are hampered by unforeseen circumstances that decrease their bank balance. The players record the deposits and withdrawals on a banking transactions record sheet that they later reflect on and analyse.

Some students will need assistance with interpreting the transactions record sheet, especially if they have not done the activity Living Expenses, on pages 7–9, which has a similar table. Look at the sample transactions record on page 23 together and talk about the meanings of words such as transaction, withdrawals, deposits, and balance. Ask *What information can you find out from looking at this table?*

### Activity

#### Financial understanding

The students may discuss the questions in more depth if you facilitate a discussion together as a larger group rather than the students just discussing them with the people with whom they played the game.

Question 3 asks the students to reflect on how they might play the game differently in order to save more. This game does rely on chance to a certain extent, so you can't guarantee you could save more if you decided to work longer hours or to shop around for cheaper items like new tyres as you could in real life. However, the students may decide to minimise the risk of losing money by not gambling their “family's savings” on the “Chance” option because, although they could make big financial gains at this point, they could also make big losses.

Some additional reflective questions are:

*Why are clear, accurate, financial transaction records useful?* (They give accurate information about what has happened to your money that you can then use for future planning rather than just guessing.)

*What did you learn from playing this game that you could use in your own money management?*

*When might you have to spend money unexpectedly and make your savings balance decrease?*

Some people are savers, and some people are spenders (either sensibly or impulsively or a mixture of both). Is it better to be one type rather than the other? Which do you think you are? What can you learn from the attitudes and habits of the opposite type from you? (Neither type is better or worse than the other, but there are times when it is useful and appropriate to use the attributes of one or the other type.)

Students could design their own transactions record to keep track of their spending and saving, perhaps using a spreadsheet.

Invite a budgeting or banking expert into your classroom to share ideas about financial planning and keeping track of one's money. Ask them to talk about how to avoid some of the common financial problems and where people can go and what they can do if they get into financial difficulties.

### Social Sciences Links

Achievement objectives:

- Understand how groups make and implement rules and laws (Social Studies, level 3)
- Understand how people make decisions about access to and use of resources (Social Studies, level 3)

Students could investigate the issues involved in philanthropy and giving money away. What kinds of things or organisations do people give money to? What would the students themselves personally support if they had \$1,000 to give away benevolently? Students could pose questions to ask a visitor from a not-for-profit organisation.

## Page 26: Bargain Hunters

### Mathematics and Statistics Achievement Objectives

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)
- 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 (Statistics, level 3)

### Number Framework Links

This activity involves finding unit prices and finding the price of one item, given the price of the box.

Students who are working at stage 7 should be able to use mental strategies to calculate the problems in question 1. (See the table of NDP material on page 4.)

### Financial Language

Unit price, online buying, second-hand, "shopping around"

### Activity

#### Financial understanding

In this activity, the students are learning that how they spend their money today has consequences for how "well off" they will be now and in the future.

The Murphy family will all have different preferences and therefore may have different ideas on which are the best deals at the supermarket.

In this activity, students work out the unit price of a muesli bar to see which packet is the best value for money and discuss other factors besides price that may influence which products consumers buy. In the process, the students learn that how they spend their money today has consequences for how "well off" they will be now and in the future. Supermarkets offer many choices to customers, who therefore need to make decisions as to how they will spend their money. Having clear criteria helps shoppers not to get distracted by "freebies", bulk discounts, advertising, and so on.

The students will negotiate with and influence others when they discuss and put forward their ideas on the benefits and risks of the various supermarket “deals”.

**Mathematics and statistics**

For question 1, you could use diagrams such as those on the next page to help the students visualise which calculations they need to do to work out the cost of one muesli bar (the unit price). Encourage the students at stage 7 to solve the problems using mental strategies. Those at stage 6 may need the support of place value materials, such as sticks bundled into groups of ten, beans and canisters, or money.

<b>The whole packet costs \$3.24</b>					
1 muesli bar costs \$□?					

<b>The whole packet costs \$4.16</b>							
1 muesli bar costs \$□?							

From these diagrams, expect responses such as “I need to divide the cost of the whole packet by the number of bars in the packet.” Using partitioning: “I partitioned the \$3.24 into \$3 and 24 cents. I divided \$3 by 6 and then 24 cents by 6.  $3 \div 6$  is 50 cents each, and  $24 \text{ cents} \div 6$  is 4 cents each. So each Muesli Munchers bar must cost  $50 + 4$  cents, which is 54 cents.” Making proportional adjustments: “I halved and halved again.  $4.16 \div 8$  gives the same answer as  $2.08 \div 4$ , which can be halved again to  $1.04 \div 2$ , which I know is 52 cents.”

**Financial understanding**

In question 2, the students would benefit from canvassing a wider range of opinions and information for these discussion points than can be generated from their classmates alone. It’s worthwhile to start by discussing it in your class but then to give them the opportunity to research the topics more widely and to share those extra ideas at a later time.

To familiarise the students with the vocabulary used in the questions, give each pair or small group a term from the list below and challenge them to write a definition for it in their own words that the rest of the class can easily understand and, if relevant, to give an example. Display the terms and definitions as a reference.

Terms: brand-name product, fair-trade products, bulk buying, second-hand items, online shopping, environmentally friendly products, organic products.

Get the students to work through the list in discussion groups of 3–4, thinking of their own pros and cons first. They could then choose one aspect that they would like to explore further and interview other people about their opinions and ideas. Encourage the students to find people who would be knowledgeable about the aspect they are researching, for example, the person who does the grocery shopping for their family, an organic greengrocer or farmer, or a fair-trade shop worker. If they choose to look on the Internet for ideas, talk about the sorts of key words they could put into a search engine to help them find relevant sites, for example, “fair trade”.

**Mathematics and statistics**

As a follow-up, you could offer the students a bargain-hunting challenge: Next time they are going to the supermarket with their families, get them to take a calculator to work out the unit prices. Some shops put the unit price in small writing on the bottom of the price label on the shelf. Their challenge is to find three items that are good bargains compared to other, similar items on the shelf and to report back to the class.

Students could pose survey questions based on the issues in question 2 to generate information to display graphically, for example: “How much cheaper would a product have to be to convince you to buy it if it was ... a muesli bar that you didn’t like as much? ... a packet of muesli bars in plain packaging?”

The students could conduct an investigation based on a question generated from question 2, probing the reasons why people choose particular items when they are shopping.

For example: “Do you think that it is better to buy a brand-name product that you know is popular or a generic label that is cheaper when you are buying ... cornflakes? ... a pair of shoes? ... a car or bike? Do factors like age and gender make a difference to the results?”

## Social Sciences Links

Achievement objective:

- Understand how people make decisions about access to and use of resources (Social Studies, level 3)  
The students could investigate what decisions need to be made at school about products the school is thinking about buying. Who makes these decisions? How are they made? What impact do these decisions have on students?

## Other Cross-curricular Links

English achievement objective:

- Ideas: Select, form, and communicate ideas on a range of topics (Speaking, Writing, and Presenting, level 3)  
Students could write a speech or a letter to the editor persuading people to consider their point of view on one of the issues in question 2. The students could debate a couple of more contentious issues about which the class is split in its opinions. You could challenge them to argue for the opposite side to that they really agree with.

## Pages 27–28: Spending Splurge

### Mathematics and Statistics Achievement Objectives

- Number strategies: Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages (Number and Algebra, level 3)
- Equations and expressions: Record and interpret additive and simple multiplicative strategies, using words, diagrams, and symbols, with an understanding of equality (Number and Algebra, level 3)
- 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 (Statistics, level 3)

### Number Framework Links

These pages involve adding and subtracting 2- and 3-digit whole numbers, dividing an amount by 9, and recording financial information in a table.

Students working at stage 6 should be able to do the mathematical calculations mentally. Those at stage 5 should also be able to do them but may need the support of materials such as tens money.

### Financial Language

Needs, wants, budget, buy, purchases, debit, withdrawal, balance, spending decisions.

## Game

### Financial understanding

This game reinforces for the students that people's financial decisions differ because they all have different preferences. "Needs" ought to be budgeted and paid for first. "Wants" vary between people; in this game, they should be purchased last during the students' "spending splurge".

The students will be identifying and managing financial resources during the game in order to buy the essential items they need and to spend their funds on items they want.

In this simulation game, students have to buy items for a holiday, making sure that they buy all the essentials, such as plane tickets and passport, as well as budgeting enough for holiday spending money.

Introduce the game by revisiting the definitions of needs (essentials, things that would stop you going on holiday if you didn't have them) and wants (desirables, things that are optional but that you would like to have or do if you could). These ideas were touched on in Holiday Plans and Budgets, pages 4–6 of the students' book.

Before they look at the list of essentials on page 27, ask the students to make a list of the things they think would be defined as needs if they were going on holiday to Australia. The distinction between needs and wants is a difficult one for many students to grasp and can bring up some interesting reasoning during discussion.

Some may feel that it is essential that they look trendy, so items that help them to do this are classified as needs! Help them to clarify the difference according to the financial definitions of wants and needs by using the question “Would you still be able to go on holiday if you didn’t have that?” Help the students to recognise that individuals will differ in their reasons for desiring to purchase a “want”. They will vary in the degree to which that want is important to them and how much they’re willing to trade off to buy it, but “wanting” it desperately doesn’t make it become a “need”!

Check that students are able to use the recording sheet by discussing the terms at the tops of the columns (Item purchased, Debit [withdrawal], Balance). Ask *What calculation is needed to work out the next line of the balance column each time?* (subtraction of the cost of the item from the previous balance)

## Activity

### *Financial understanding*

The discussion in the after-game activity should encourage the students to accept that by making priorities for their spending, they will be “better off” (financially and socially) and more likely to be happy with their purchases. The financial decisions that people make determine how “well off” they are now and in the future.

The students may realise that someone who purchases lots of “wants” may be very happy with the items now but not so happy about the consequences later, for example, no money left for food and entertainment. There is a consequence for each financial decision that a person makes; good financial decisions bring benefits.

The students are communicating and receiving ideas and information when they discuss and justify the decisions they made with their classmates.

## Social Sciences Links

Achievement objective:

- Understand how people make decisions about access to and use of resources (Social Studies, level 3)  
The students could work through the Spending Splurge scenario in relation to their own classroom. What are the needs and wants of the classroom? How are these decided? How are these funded? Who makes the decisions? How are the students in the class affected?

## Discussion finale

### *Financial understanding*

If you have been using this book as a unit, you may like to have a discussion to reflect back over the whole theme. Get the students to flick back through the students’ book to remind them of the different activities. They could answer some of the following questions in small groups and then report back to the whole class.

*Which activities did you find most interesting?*

*What are some financial words that you have learned to use?*

*Did you find anything out during this unit that surprised you or changed your ideas about something?*

*Look back through the key financial ideas in the book. Choose three that you think are important for you to remember.*

*Why did you choose those ones?*

*How could you use what you have learned by doing these activities in your own financial dealings?*

*Do you have any questions about financial matters that weren’t answered while you were doing this unit?*

Students could create a poster or a computer slideshow to summarise and explain some of the key financial ideas that they learned.

## Social Sciences Links

Achievement objective:

- Understand how people make decisions about access to and use of resources (Social Studies, level 3)  
The students could discuss or write about these questions:
  - What have you learned about resources, needs, and wants?
  - Who makes these decisions in your life?
  - How do you or they make these decisions?
  - How are decisions about school or student resources, needs, or wants made at your school?

### **Other Cross-curricular Links**

English achievement objective:

- Ideas: Select, form, and communicate ideas on a range of topics (Speaking, Writing, and Presenting, level 3)  
Students could write letters, emails, or postcards, in role as one of the Murphys on holiday, to their friends back home or afterwards as a thank you letter or email to their grandparents. Get them to include what the Murphys might have learned from the experience of saving for a holiday.

costs	income	spending	savings
choices	decision	trade-off	budget
wants	needs	goods	services
consumer	profit	interest	loan

## Copymaster: Financial Fours game

### Definition cards

<p>What you'd like to have but don't need</p>	<p>Items made or produced for sale</p>	<p>The person who buys goods and services</p>	<p>A plan showing where your income will come from and how you will use it</p>
<p>Money you earn from work or other sources</p>	<p>Expenses involved in setting up or running a business or enterprise</p>	<p>Money that you borrow and have to pay back</p>	<p>Selecting a choice</p>
<p>Paying for goods or services</p>	<p>Options you have before making a decision</p>	<p>Financial gain, such as the money you make from sales after you have paid for all your costs</p>	<p>Money you put away (for example, in the bank) for use at a later time</p>
<p>What you are prepared to give up to get what you want</p>	<p>Items you must have</p>	<p>Money you earn from saving or investing or the extra money you pay for borrowing money</p>	<p>Work done for a person, group, or community</p>

## Copymaster: Definition Answers Sheet

<b>Costs</b>	Expenses involved in setting up or running a business or enterprise
<b>Income</b>	Money you earn from work or other sources
<b>Spending</b>	Paying for goods or services
<b>Savings</b>	Money you put away (for example, in the bank) for use at a later time
<b>Choices</b>	Options you have before making a decision
<b>Decision</b>	Selecting a choice
<b>Trade-off</b>	What you are prepared to give up to get what you want
<b>Budget</b>	A plan showing where your income will come from and how you will use it
<b>Wants</b>	What you'd like to have but don't need
<b>Needs</b>	Items you must have
<b>Goods</b>	Items made or produced for sale
<b>Services</b>	Work done for a person, group, or community
<b>Consumer</b>	The person who buys goods and services
<b>Profit</b>	Financial gain, such as the money you make from sales after you have paid for all your costs
<b>Interest</b>	Money you earn from saving or investing or the extra money you pay for borrowing money
<b>Loan</b>	Money that you borrow and have to pay back

Holiday plans for Brisbane and the Gold Coast			
Tick the option for this budget:    expensive option <input type="radio"/> cheapest option <input type="radio"/>			
Day		Proposed plan	Total cost (\$)
Saturday	Activity	Flying to Brisbane	Already paid
	Transport	From airport to Nana and Grandad's	
	Food	Tea at Nana and Grandad's	
Sunday	One or more activities		
	Transport		
	Food		
Monday	One or more activities		
	Transport		
	Food		
Tuesday	One or more activities		
	Transport		
	Food		
Wednesday	One or more activities		
	Transport		
	Food		
Thursday	One or more activities		
	Transport		
	Food		
Friday	One or more activities		
	Transport		
	Food		
Saturday	One or more activities		
	Transport		
	Food		
Sunday	Transport	From Nana and Grandad's to airport	
	Activity	Flying home to New Zealand	Already paid
		Total cost (Australian dollars)	

<b>Date</b>	<b>Balance owed</b>	<b>Monthly interest at 24% per annum</b>	<b>Amount paid</b>	<b>New balance</b>
April	\$5,000.00	\$100.00	\$150.00	\$4,950.00
May	\$4,950.00	\$99.00	\$150.00	\$4,899.00
June	\$4,899.00	\$97.98	\$150.00	\$4,846.98
July	\$4,846.98			
August				
September				
October				
November				
December				
January				
February				
March				





## Glossary of Financial Terms for Level 3: Saving for a Holiday

<b>Affordability</b>	Having enough money to pay for the goods or services you decide to buy
<b>ATM</b>	Automated teller machine
<b>Auction</b>	A public sale in which goods are sold to the highest bidder
<b>Balance</b>	The difference between money in and money out at a particular point in time
<b>Bank statement</b>	A printed bank record of transactions in and out and the balance
<b>Benefits</b>	An advantage gained or profit made from something
<b>Bid</b>	Price offered for something, especially at an auction
<b>Borrowing</b>	Using someone else's money with an agreement to repay it (usually with interest)
<b>Budget</b>	A plan showing where your income will come from and how you will use it
<b>Business</b>	A commercial activity for profit
<b>Cash</b>	Money in coins or notes
<b>Choices</b>	A range of options from which to choose
<b>Closing balance</b>	The amount of money owing or available that a person has (for example, in the bank) at the end of a particular period of time
<b>Compound interest</b>	Interest paid or charged (for example, yearly) on interest already earned or charged on a loan
<b>Consequences</b>	What happens because of a decision you make
<b>Consumer</b>	The person who buys goods and services
<b>Cost</b>	The purchase price of goods or services
<b>Cost price</b>	The price at which goods are bought by a retailer for resale
<b>Costs</b>	The money that needs to be spent for setting up or running a business or enterprise
<b>Credit</b>	The supply of goods or services under an arrangement to pay later
<b>Credit card</b>	A card issued by a business, such as a bank, to allow the holder to make purchases and pay later
<b>Debit</b>	A record of a payment made or owed
<b>Debt</b>	What you owe other people or organisations
<b>Decision</b>	Selection from a range of choices
<b>Deposit</b>	Money put into an account, for example, at the bank or electronically
<b>Donation</b>	Money or goods given free to a person or organisation
<b>Earn</b>	Obtain income in exchange for labour or services or else as interest or profit
<b>Earnings</b>	Income earned
<b>Economical</b>	Cost-effective
<b>Enterprise</b>	A project or undertaking, especially a bold one; a business or company
<b>Entrepreneur</b>	A person who sets up a business, taking on greater than normal financial risks in order to do so
<b>Exchange rate</b>	The value of one currency for the purpose of being converted to another currency
<b>Expenditure</b>	Money spent
<b>Expenses</b>	The costs of doing a job or task
<b>Fair trade</b>	Trade in which fair prices are paid to producers in developing countries

## Glossary of Financial Terms for Level 3: Saving for a Holiday

<b>Financial plan</b>	A plan of future income and spending, based on money you expect to earn
<b>Financial records</b>	Records of income and expenditure to help you keep track of your savings and spending
<b>Goal</b>	What you set out to achieve
<b>Goods</b>	Items made or produced for sale
<b>GST</b>	Goods and services tax: a government levy added to the cost of some goods, services, and transactions
<b>Hire purchase</b>	Buying something by making regular payments for it while you use it
<b>Income</b>	Money you earn from work or get from other sources
<b>Interest</b>	Money that you earn from saving or investing, or the extra money that you pay for borrowing money
<b>Loan</b>	Money that you borrow and have to pay back
<b>Loan repayments</b>	Paying back money that you have borrowed (and interest if charged)
<b>Loss</b>	The amount by which your costs are higher than your income
<b>Minimum payment</b>	The lowest amount that you must pay when repaying a debt
<b>Money</b>	A system used for buying and selling, based on coins, banknotes, and bank transfers
<b>Monthly payments</b>	An amount of money paid every month, for example, to repay a debt or a loan
<b>Mortgage</b>	Money lent to a property's owner on the basis of the value of that property
<b>Needs</b>	Items you must have
<b>Online buying</b>	Making purchases through the Internet
<b>Options</b>	Choices
<b>Outgoings</b>	Expenditure paid out of income
<b>Overspending</b>	Paying out more money than you earn or have available, for example, by putting items on an account or credit card that you have to pay for later
<b>Per annum (p.a.)</b>	For each year
<b>Pocket money</b>	A small amount of money given, usually regularly, to children by their parents or caregivers
<b>Principal</b>	The original amount loaned or borrowed
<b>Profit</b>	Financial gain from a business or an enterprise, such as the income you have left after you have paid for all your costs
<b>Projected profit</b>	The surplus you anticipate getting after you have paid for all your costs
<b>Purchases</b>	Things bought
<b>Risk</b>	The chance of losing income or even making a loss
<b>Running balance</b>	The amount of money recorded on a bank statement or money record after money has been taken off or entered
<b>Salary</b>	A yearly sum (less tax), paid fortnightly or monthly, that an employer pays to an employee for work done
<b>Saving</b>	Money not spent, due to buying items on special or second-hand
<b>Savings</b>	Money put away (for example, in the bank) for use at a later time
<b>Second-hand</b>	Owned by someone before and therefore not new
<b>Selling price</b>	The amount of money set as the purchase price for customers

## Glossary of Financial Terms for Level 3: Saving for a Holiday

<b>Services</b>	Work done for a person, group, or community
<b>Spending</b>	Paying for goods or services
<b>Spending money</b>	Money set aside for entertainment or day-to-day expenditure
<b>Start-up money</b>	Money needed to begin a business or enterprise
<b>Tax</b>	An amount of money deducted from personal income or business profit and paid to the government, or an amount added to the cost of some goods, services, and transactions
<b>Trade-off</b>	What you are prepared to give up to get what you want (opportunity cost)
<b>Transaction</b>	An exchange between buyer and seller, usually of money for what is purchased
<b>Unit price</b>	The cost charged for one of something
<b>Wages</b>	Money that an employer pays an employee at an hourly rate (less tax) for work done
<b>Wants</b>	What you'd like to have but don't really need
<b>Withdrawal</b>	Money you take out of an account, for example, at the bank or at an ATM

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