

**THE SOCIALLY RESPONSIBLE-MATHS EDUCATION  
PROJECT**

**The Cost of Independence Project**

**Can I afford it?**

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## **Rationale**

This project is aimed at students who are considering employment directly after school. It challenges students to explore the real costs of living independently. Through the unit students will look at a number of different aspects of life that they are likely to need to take into account and the costs associated with them. They will also look at some of the things they can imagine having, or would like to have, once they leave school.

### **Getting started**

The original set of activities worked on an assumption that they would be living alone, not living in a group or shared situation. The activities could be extended to include living with others too.

Each set of activities has its own assessable aspects. Some of the outcomes that can be demonstrated by students completing these tasks have been highlighted. It is up to individual teachers to choose the method of assessment that suits their purposes and/or educational perspectives.

When doing the unit the students may occasionally disassociate themselves from the person in the activity.

### Activity 1: Get A Job!

Students need to make a career choice around their interests. Their choice also needs to be realistic around their capabilities, and something they have a chance of getting. They research the wages of that occupation. Most Year 10's have completed career education courses and will have a number of ideas.

#### Teaching points

#### Student Activities

The Task handout.	Choose a career pathway and select an occupation.
Access to internet.	Research the expectations, wages and conditions for that occupation.
Discuss career pathways.	Print off the details and keep a copy in a file.
Make choices or compromises.	Work out the best age to be for the purposes of this project [Hint 18 or 3 <sup>rd</sup> year Apprentice].

## Activity 2: Pay Me

As students explore the wages for occupations the level of the youth wage is highlighted and the arguments for and against this are worth exploring. The length of the working week is another possible discussion. This activity is based on a 40-hour week, with no overtime. Students can choose to calculate overtime or weekend rates if it is part of the job they choose. They can also explore some work where there are limits to how many hours a week a person can work.

### Teaching Points

### Student Activity

Identify those students in the group who currently have regular part-time work. Invite them to share with the group aspects of how they are paid. Discuss the different mechanisms for payment, the advantages and disadvantages of each, and any issues arising [for example lump sums in the hand may avoid tax, but leave the worker without Occupational Health and Safety support]

Show calculations of adult wages times youth rate. This is the pay rate.

Multiply the pay rate by 40 hours per week for 52 weeks a year.

Do plenty of examples so they can figure out their Gross Wage

Calculate your pay rate and your Gross Wage for the year.

Keep a copy in your file

### Activity 3: The Tax Office

Once an annual income is established and they have calculated their gross wage they then need to calculate the Pay as you Gain tax. Using the latest tax scales students work out how much tax should be deducted from their wage. This is now the figure they have to live off for one year.

#### Teaching Points

#### Student Activities

<p>Show how to use the tax scales to work out different wages.</p> <p>Use an example(s) to illustrate.</p>	<p>Calculate the tax for your wage.</p> <p>Estimate what fraction of your pay is taken in tax. Does this fraction change much if you earn a bit more? A lot more?</p> <p>Work out your Net Wage.</p> <p>Discuss the graduated tax system. Is it fair?</p>
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#### Activity 4: I'm in Love with My Car

Many students enjoy talking about the car they would like to own. This activity sets a limit at \$15000 and 3 years to pay it off. Researching car sites and looking for the best buy is a valuable lesson on its own. Students investigate the costs of personal loans.

The activity can be extended to make comparisons with other forms of transport including discussions about convenience, cost and transport issues.

#### Teaching Point

#### Student Activity

<p>Internet research</p> <p>Students look at currently available options for a loan to pay for a car over three years.</p> <p>Describe the concept of reducible loans [fixed rate of interest, but interest only paid on remaining principal]</p> <p>Identify all loan costs such as interest, establishment costs and early payout fees</p> <p>Look at the loan calculators on several financial institutions' websites and become familiar with using them effectively</p> <p>Compare the original cost of the car to the full cost of a loan.</p> <p>Consider depreciation for new vehicles. Estimate the likely loss over first 3 years.</p> <p>Explore alternatives. Identify and discuss advantages and disadvantages of these.</p>	<p>Find your car close to the value of \$15 000.</p> <p>Print it out</p> <p>Compare with personal loan rates currently available. Use the loan calculators to calculate the cost of your purchase at current rates for 3 years.</p> <p>So do you want your own car? What are the choices? Describe the reasons for your choice. Compare these with other students. After hearing other people's ideas would you do anything different? Why?</p>
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### Activity 5a: I'm Moving Out

So they have money and they have a car, now they have to commit to the concept of living away from home on their own. Students do searches on accommodation. They can see what things cost and what they get for the money (for example unfurnished or furnished accommodation). They start to see how expensive living on your own can be. They can explore different locations to see what difference that might make. Reality might start to set in (in my case there was no suitably priced accommodation for students in our town; they would have to move to another place).

This can be extended to students looking at the costs associated with moving into rented accommodation: bonds, rent in advance, moving your goods, buying furniture ... and the list goes on.

Teaching Point	Student Activity
Internet search activities.	Get the local newspaper and find the advertisements for rental accommodation. What options are available which suit your situation? What other options are available or possible? What are the costs of these options?  Be prepared to look elsewhere, including interstate, and consider the size and locations of the towns you might end up in. Where you decide to live needs to match with your desired and/or chosen employment.

## Activity 5b: Setting up

This is the opportunity to get real, as these discussion points really hit home. For some students they can hit home quite hard. Brainstorm all of the other items that will cost them money. Use your favorite brainstorming activity, but make sure you have a big copy up somewhere so it can be copied. Discuss each category and how to do it cheaply.

Buying crockery from the second hand shop along with pots, pans, knives forks and any furniture is a real money saver. Students may turn their noses up at this idea but it is cheap. Kitchen utensils and electrical goods cost heaps. Explain that if you start now by asking for some of these items as presents and putting them away it can make parents aware that you are growing up and planning ahead. Convincing Mum and Dad to upgrade before it breaks and taking the old ones away is wise. Talking to parents about upgrading the bedding you have now, with a view to taking when you leave home, is part of negotiating, and it lets them know to buy you things that you really do want. That could be three years of clever present buying that will save you a packet!

### Teaching Point

### Student Activity

<p>Use your favorite brainstorming activity to identify things that are needed when setting up a home; get the info up for the whole class to see.</p> <p>Discuss second hand shops, shared resources and other ways to save money when setting up</p>	<p>Identify the things you could take with you from home, and the things you would need to buy. Estimate the costs of the things from the list you are likely to need to buy.</p> <p>Explain how you might plan to cover some of these costs.</p> <p>Get a copy of the main chart and put it in your file.</p>
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### Activity 5c: Doing the shopping

Once accommodated food is the next key issue. This is another interesting social issue. Students may well see this as one way of saving money. For the purposes of the activity - "I can live on Macca's" is not on. This activity requires the students to live on a reasonable, healthy diet.

Get heaps of catalogues from Woollies, Coles or IGA. Get them to grab the dockets from home for a week or two. Big cost items like oil and coffee don't turn up each week. But these big cost items that last a while do need to be purchased at some stage, so including some is important. When they can create a grocery list that totals about \$120, they can survive; if the total is much less look at what is missing on the list. Vegetable and meat proteins are necessary for good health. Alcohol **does not** get included in the groceries!

#### Teaching Point

#### Student Activity

<p>Get plenty of catalogues from the local supermarkets.</p> <p>Request students bring dockets from the weekly shopping but it will be easier if you save a few yourself and bring them in.</p>	<p>Create a list of food and hygiene products used in a week. Identify long-lasting items and things that need replacing regularly [daily/weekly/fortnightly].</p> <p>Choose a few items and compare the shelf prices for brand names and their home brand version. Is the cheaper version better? Discuss.</p> <p>Use Excel or calculate the cost of the week.</p>
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## Activity 6: What's Left Over and how to manage it

Talk about the costs of alcohol and cigarettes, and how these can quickly add up to many thousands of dollars.

Explain how the banks will throw credit cards at you, the interest rates on these, and the consequences of losing control over the way credit cards are used.

Do you think you will use your phone more or less now that you live elsewhere? What are the costs of your expected use?

Driving licence, fuel, tyres, insurance, services, parking and breakdowns are all extras for the car.

Entertainment goes all the way from sitting at home reading a book you borrow from the library through to nightclubbing and parties.

Even more deductions will come out from your wages: superannuation, health insurance, memberships, etc

Some of these things [such as options for health insurance] can create further activity to research properly.

### Teaching Point

### Student Activity

<p>Use your favorite Brainstorming activity, but get the info up for the whole class to see.</p> <p>Put the ideas into categories [such as weekly/monthly, essential/important/luxury] and list out expenses that go with them.</p> <p>Discuss Alcohol, Cigarettes, etc</p> <p>Discuss the car and its fleet of extra costs.</p> <p>Discuss the cost of credit</p>	<p>Estimate the costs of the major items that you are likely to spend from the list.</p> <p>Get a copy of the main brainstorming chart and put it in your file.</p> <p>Write some comments about how you plan to cover some of the costs needed to get the things on the list.</p> <p>What happens when a person has spent more than they can pay back? Discuss the implications of defaulting on car loans, phone plans and credit card debt.</p>
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## Activity 7: Calculating the Savings

All this now brings the finances to the end point. Gross Wage less Tax is the Net Wage. Paying off the car for one year, renting your home, buying the groceries and the cost of having some quality of life needs to come off that wage. What savings do you have left over? Any? Think about this money (if any): is it really worth all the hassle just for a few bucks, or does it make sense to put away some money (even if a little)? After a few years will you need a new car? You will get four weeks annual leave. What will you do with holidays? Might you want to save for buying real estate?

### Teaching Points

### Student Activity

<p>Briefly go through each stage of the project and explain how to finesse the figures.</p> <p>Discuss what cut backs can be made to aid savings or increase income.</p> <p>Set up some formulas on Excel and show the students how to manipulate figures.</p>	<p>Calculate the total costs of your independence and work out what your savings for the year are. Explain how you worked this figure out.</p> <p>Consider that those savings are all that is left over after one year's work. It might help to use Excel for this.</p>
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## Activity 8: The Written Report

Now that the project is through the students can be asked to do a report.

Before (and during) writing remind students of the ideas and issues from the start of the project. Get the students to remember their feelings too as they did the work: low wages, differences between what they want and what they need and so on. Through this summary students realise that they just went for a walk through their own future. Interesting discussions and reflections are likely at this point.

During the project this year one of my students was half way through calculating the cost of living as an apprentice chef, when an opportunity came up and he left school to become one. Now that was the first time I have seen this kid take his homework so seriously.

### Teaching Points

### Student Activity

<p>Get the students to write out a full report for this task.</p> <p>Use the format that is best for your students and most practiced. The English dept have some set ways and Year 11/12 Modelling Maths examples.</p> <p>Discuss issues that were covered like youth wages and fairness.</p> <p>Highlight some of the learning journey they went on to aid their writing.</p>	<p>Write a report.</p> <p>Use the data already collected.</p> <p>Cut and Paste examples of things you have worked through to illustrate the work. Show the car, the Accommodation and the food list.</p> <p>Include the brainstorm and estimations. Show the final savings.</p> <p>Compile the work into a folio for presentation.</p>
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## **In writing the report ...**

Provide evidence for your decisions.

Note what mathematics you have used and learned doing this work.

Describe how mathematics has helped you understand situations/research/solve problems etc. Give examples for each.

## **Finishing the project...**

Create an article based on the class reports for a local newspaper. Talk about how mathematics is important in making decisions in life.