

# MATHS TREATS

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## SUPERANNUATION

The aim of superannuation is to ensure people in Australia save and invest money while working to provide them with income when they retire from work, thus decreasing people's reliance on the Australian Age Pension. In the more common 'defined contribution' scheme, 9.5% of a person's annual wage is placed in a superannuation fund by their employer. The value of this fund rises and falls depending on the amounts contributed, costs, and investment returns. An income stream is paid out of the fund after retirement based on the value of the accumulated amount. Superannuation has certain tax advantages over direct investments to make it an attractive form of saving. You might like to read about the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry to find out more about the returns, risks and costs associated with superannuation.

## INVESTMENT RETURNS



Superannuation can be self-managed or managed by a professional. Both structures have investment, management and compliance costs. Different asset classes generate different investment returns, ranging from lower returns for safer assets such as cash and 'blue-chip' shares and higher returns for riskier shares. Funds can consist of a single asset type or a mix of cash, bonds, property, Australian and international shares.

### ACTIVITY

Investigate investment returns for different asset classes over the last 5, 10 and 30 years. To calculate superannuation, think about: How long will you work? How much will you earn each year? Will it change over time? How much will money be worth when you retire? Will you add personal contributions in addition to the employer contributions? What will your investment returns be? When you retire, will your superannuation be enough?

## VALUE OF MONEY OVER TIME



The value of money and its purchasing power changes over time. The concept of 'time value of money' recognises that a certain amount of money today is worth more than that same sum of money at some point in the future. For example, if I have \$1000 in the bank today (present value) and it earns 5% interest per year, then in two years I will have \$1102.50 (future value). In addition, the costs of products and services generally increase over time. This is known as 'inflation' and impacts on our 'cost of living', the cost to maintain a certain lifestyle.

### ACTIVITY

Think about how living costs change. What life events would change your annual costs? How will inflation impact your living costs? If the inflation rate increases by more than the interest rate, are you any better off? How much income would you like once you retire? How long will your superannuation be able to fund this amount?

## REFERENCES AND FURTHER READING

### ABOUT SUPERANNUATION

ATO Tax, Super + You [www.taxsuperandyou.gov.au](http://www.taxsuperandyou.gov.au)  
Follow the links to Tax 101

[www.ato.gov.au/Individuals/Super](http://www.ato.gov.au/Individuals/Super)

[moneysmart.gov.au/how-super-works](http://moneysmart.gov.au/how-super-works)

[financialservices.royalcommission.gov.au](http://financialservices.royalcommission.gov.au)

### ABOUT TIME VALUE OF MONEY

[www.khanacademy.org/economics-finance-domain/core-finance/interest-tutorial/present-value/v/time-value-of-money](http://www.khanacademy.org/economics-finance-domain/core-finance/interest-tutorial/present-value/v/time-value-of-money)

### THE MATHEMATICS BEHIND SUPERANNUATION

[moneysmart.gov.au/saving/compound-interest](http://moneysmart.gov.au/saving/compound-interest)

[www.khanacademy.org/economics-finance-domain/core-finance/interest-tutorial/compound-interest-tutorial/v/introduction-to-compound-interest](http://www.khanacademy.org/economics-finance-domain/core-finance/interest-tutorial/compound-interest-tutorial/v/introduction-to-compound-interest)

### SEARCH WIKIPEDIA

Superannuation, compound interest, time value of money, cost of living

### IMAGES

Leadbeater possum - Steve Kuitert, other images - Pixabay.