

TAX 101

QLD Senior Curriculum Mathematics

Tax 101 - Activity 1: What is tax and why do we need it?

Essential Mathematics (Year 11)

Unit 1: Number, data and graphs

Topic 1: Number

Sub-topic: Percentages

- calculate a percentage of a given amount
- determine one amount expressed as a percentage of another for same units

Topic 2: Representing data

Sub-topic: Reading and interpreting graphs

- interpret information presented in graphs, such as step graphs, column graphs, pie graphs, picture graphs, conversion graphs of calories ↔ kilojoules, line graphs using units of energy to describe consumption of electricity, including kilowatt hours
- discuss and interpret tables and graphs, including misleading graphs found in the media and in factual texts [complex].

Sub-topic: Drawing graphs

- determine which type of graph is best used to display a dataset
- use spreadsheets to tabulate and graph data [complex]

General Mathematics

Unit 1: Money, measurement and relations

Topic 1: Consumer arithmetic

Sub-topic: Applications of rates, percentages and use of spreadsheets

- review definitions of rates and percentages
- calculate payments based on government allowances and pensions, such as youth allowances, unemployment, disability and study

Unit 2: Applied trigonometry, algebra, matrices and univariate data

Topic 3: Linear equations and their graphs

Sub-topic: Piece-wise linear graphs and step graphs

- interpret piece-wise linear and step graphs used to model practical situations

Tax 101 - Activity 2: Tax: who, what, how and why

Essential Mathematics (Year 11)	Unit 1: Number, data and graphs Fundamental topic: Calculations Sub-topic: Calculations <ul style="list-style-type: none">• solve practical problems requiring basic number operations• ascertain the reasonableness of answers to arithmetic calculations• use a calculator for multi-step calculations Topic 1: Number Sub-topic: Percentages <ul style="list-style-type: none">• calculate a percentage of a given amount• determine one amount expressed as a percentage of another for same units• apply percentage increases and decreases in situations, including mark-ups, discounts and GST [complex] Topic 2: Representing data Sub-topic: Reading and interpreting graphs <ul style="list-style-type: none">• interpret information presented in two-way tables
General Mathematics	Unit 2: Applied trigonometry, algebra, matrices and univariate data Topic 3: Linear equations and their graphs Sub-topic: Piece-wise linear graphs and step graphs <ul style="list-style-type: none">• interpret piece-wise linear and step graphs used to model practical situations

**Tax 101 - Activity 4: The Budget: taxes and spending
Years 11-12 Task**

Essential Mathematics (Year 11)	Unit 1: Number, data and graphs Topic 2: Representing data Sub-topic: Data presentation and interpretation <ul style="list-style-type: none">• display numerical data as frequency distribution tables, dot plots, stem-and-leaf plots and histograms Topic 3: Graphs Sub-topic: Reading and interpreting graphs <ul style="list-style-type: none">• interpret information presented in graphs, such as step graphs, column graphs, pie graphs, picture graphs, conversion graphs of calories ↔ kilojoules, line graphs using units of energy to describe consumption of electricity, including kilowatt hours• discuss and interpret tables and graphs, including misleading graphs found in the media and in factual texts [complex].
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Tax 101 - Interactive: You make the decision

Essential Mathematics (Year 11)	Unit 1: Number, data and graphs Fundamental topic: Calculations Sub-topic: Calculations <ul style="list-style-type: none">• solve practical problems requiring basic number operations• use a calculator for multi-step calculations
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YOUR TAX

QLD Senior Curriculum Mathematics

Your Tax - Activity 1: Income and income tax

**Essential
Mathematics
(Year 11)**

Unit 1: Number, data and graphs

Topic 3: Graphs

Sub-topic: Reading and interpreting graphs

- interpret information presented in two-way tables

Unit 2: Money, travel and data

Topic 1: Managing money

Subtopic: Earning money

- apply the concepts of taxable income, gross income, allowable deductions and levies in simple contexts [complex]

Your Tax - Activity 1: Income and income tax Years 11-12 Task

**Essential
Mathematics
(Year 11)**

Unit 1: Number, data and graphs

Fundamental topic: Calculations

Sub-topic: Calculations

- solve practical problems requiring basic number operations
- use a calculator for multi-step calculations

Topic 1: Number

Sub-topic: Percentages

- calculate a percentage of a given amount
- determine one amount expressed as a percentage of another for same units

**General
Mathematics**

Unit 1: Money, measurement and relations

Topic 1: Consumer arithmetic

Applications of rates, percentages and use of spreadsheets

- calculate the dividend paid on a portfolio of shares, given the percentage dividend or dividend paid per share, for each share; and compare share values by calculating a price-to-earnings ratio

Your Tax - Activity 2: Working and paying tax

Essential Mathematics (Year 11)

Unit 1: Number, data and graphs

Fundamental topic: Calculations

Sub-topic: Calculations

- solve practical problems requiring basic number operations
- use a calculator for multi-step calculations

Topic 1: Number

Sub-topic: Percentages

- calculate a percentage of a given amount

Unit 2: Money, travel and data

Topic 1: Managing money

Subtopic: Earning money

- find earnings, including salary, wages, overtime, piece-work and commission
- interpret entries on a selection of wage or salary pay slips and timesheets
- understand the purpose of taxation and the use of tax file numbers
- use tax tables to determine PAYG tax for periodic (weekly/fortnightly/monthly) earnings [complex]

Your Tax - Activity 3: Completing your tax return

Essential Mathematics (Year 11)

Unit 2: Money, travel and data

Topic 1: Managing money

Subtopic: Earning money

- find earnings, including salary, wages, overtime, piece-work and commission
- use tax tables to determine PAYG tax for periodic (weekly/fortnightly/monthly) earnings
- interpret entries on a simple PAYG summary
- apply the concepts of taxable income, gross income, allowable deductions and levies in simple contexts [complex]

Your Tax - Activity 4: Calculating tax due

Essential Mathematics (Year 11)

Unit 1: Number, data and graphs

Fundamental topic: Calculations

Sub-topic: Calculations

- solve practical problems requiring basic number operations
- use a calculator for multi-step calculations

Topic 1: Number

Sub-topic: Percentages

- calculate a percentage of a given amount

Unit 2: Money, travel and data

Topic 1: Managing money

Subtopic: Earning money

- find earnings, including salary, wages, overtime, piece-work and commission
- use tax tables to determine PAYG tax for periodic (weekly/fortnightly/monthly) earnings [complex]
- apply the concepts of taxable income, gross income, allowable deductions and levies in simple contexts [complex]
- calculate a simple income tax return and net income using current income tax rates [complex].

(continued from previous page) Your Tax - Activity 4: Calculating tax due

General Mathematics	Unit 1: Money, measurement and relations Topic 1: Consumer arithmetic Sub-topic: Applications of rates, percentages and use of spreadsheets <ul style="list-style-type: none">• review definitions of rates and percentages
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Your Tax - Activity 5: What other taxes do I have to pay?
Years 11-12 Task

Essential Mathematics (Year 11)	Unit 1: Number, data and graphs Topic 1: Number Sub-topic: Percentages <ul style="list-style-type: none">• calculate a percentage of a given amount• determine one amount expressed as a percentage of another for same units• apply percentage increases and decreases in situations, including mark-ups, discounts and GST [complex]• calculate simple interest for different rates and time periods [complex]. Unit 2: Money, travel and data Topic 1: Managing money Subtopic: Earning money <ul style="list-style-type: none">• use tax tables to determine PAYG tax for periodic (weekly/fortnightly/monthly) earnings [complex] Unit 3: Measurement, scales and data Topic 3: Summarising and comparing data Sub-topic: Summarising and interpreting data <ul style="list-style-type: none">• calculate measures of central tendency, the mean and the median from a dataset
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General Mathematics	Unit 1: Money, measurement and relations Topic 1: Consumer arithmetic Sub-topic: Applications of rates, percentages and use of spreadsheets <ul style="list-style-type: none">• review definitions of rates and percentages• apply percentage increase or decrease in various contexts, e.g. determining the impact of inflation on costs and wages over time, calculating percentage mark-ups and discounts, calculating GST, calculating profit or loss in absolute and percentage terms, and calculating simple and compound interest
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Your Tax - Activity 6: Fixing a tax problem
Years 11-12 Task

Essential Mathematics (Year 11)	Unit 1: Number, data and graphs Topic 1: Number Sub-topic: Percentages <ul style="list-style-type: none">• calculate simple interest for different rates and time periods [complex].
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BUSINESS TAX

QLD Senior Curriculum
Mathematics

Business Tax - Activity 2: Business structures Years 11-12 Task

**Essential
Mathematics
(Year 11)**

Unit 1: Number, data and graphs

Fundamental topic: Calculations

Sub-topic: Calculations

- solve practical problems requiring basic number operations
- ascertain the reasonableness of answers to arithmetic calculations
- use a calculator for multi-step calculations

Topic 1: Number

Sub-topic: Percentages

- calculate a percentage of a given amount

Unit 2: Money, travel and data

Topic 1: Managing money

Sub-topic: Earning money

- apply the concepts of taxable income, gross income, allowable deductions and levies in simple contexts [complex]

Business Tax - Activity 4: Explaining business taxes

**Essential
Mathematics
(Year 11)**

Unit 1: Number, data and graphs

Topic 1: Number

Sub-topic: Percentages

- determine one amount expressed as a percentage of another for same units
- apply percentage increases and decreases in situations, including mark-ups, discounts and GST [complex]

Topic 3: Graphs

Sub-topic: Reading and interpreting graphs

- interpret information presented in graphs, such as step graphs, column graphs, pie graphs, picture graphs, conversion graphs of calories ↔ kilojoules, line graphs using units of energy to describe consumption of electricity, including kilowatt hours
- interpret information presented in two-way tables

Sub-topic: Drawing graphs

- use spreadsheets to tabulate and graph data [complex]

**General
Mathematics**

Unit 1: Money, measurement and relations

Topic 1: Consumer arithmetic

Sub-topic: Applications of rates, percentages and use of spreadsheets

- review definitions of rates and percentages
- apply percentage increase or decrease in various contexts, e.g. determining the impact of inflation on costs and wages over time, calculating percentage mark-ups and discounts, calculating GST, calculating profit or loss in absolute and percentage terms, and calculating simple and compound interest

Business Tax - Activity 5: The goods and services tax (GST)

Essential Mathematics (Year 11)	Unit 1: Number, data and graphs Fundamental topic: Calculations Sub-topic: Calculations <ul style="list-style-type: none"> • solve practical problems requiring basic number operations • ascertain the reasonableness of answers to arithmetic calculations • use a calculator for multi-step calculations Topic 1: Number Sub-topic: Percentages <ul style="list-style-type: none"> • calculate a percentage of a given amount • determine one amount expressed as a percentage of another for same units • apply percentage increases and decreases in situations, including mark-ups, discounts and GST [complex]
General Mathematics	Unit 1: Money, measurement and relations Topic 1: Consumer arithmetic Sub-topic: Applications of rates, percentages and use of spreadsheets <ul style="list-style-type: none"> • review definitions of rates and percentages • apply percentage increase or decrease in various contexts, e.g. determining the impact of inflation on costs and wages over time, calculating percentage mark-ups and discounts, calculating GST, calculating profit or loss in absolute and percentage terms, and calculating simple and compound interest

Business Tax - Activity 5: The goods and services tax (GST)**Years 11-12 Task**

Essential Mathematics (Year 11)	Unit 1: Number, data and graphs Fundamental topic: Calculations Sub-topic: Calculations <ul style="list-style-type: none"> • solve practical problems requiring basic number operations • ascertain the reasonableness of answers to arithmetic calculations • use a calculator for multi-step calculations Topic 1: Number Sub-topic: Percentages <ul style="list-style-type: none"> • calculate a percentage of a given amount • apply percentage increases and decreases in situations, including mark-ups, discounts and GST [complex] Unit 3: Measurement, scales and data Sub-topic: Area measure In this sub-topic, students will: <ul style="list-style-type: none"> • use formulas to calculate areas of regular shapes, including triangles, squares, rectangles, parallelograms and circles
General Mathematics	Unit 1: Money, measurement and relations Topic 1: Consumer arithmetic Sub-topic: Applications of rates, percentages and use of spreadsheets <ul style="list-style-type: none"> • review definitions of rates and percentages • apply percentage increase or decrease in various contexts, e.g. determining the impact of inflation on costs and wages over time, calculating percentage mark-ups and discounts, calculating GST, calculating profit or loss in absolute and percentage terms, and calculating simple and compound interest

Super - Activity 1: What is superannuation?

<p>Essential Mathematics (Year 11)</p>	<p>Unit 1: Number, data and graphs Topic 3: Graphs Sub-topic: Reading and interpreting graphs</p> <ul style="list-style-type: none"> interpret information presented in graphs, such as step graphs, column graphs, pie graphs, picture graphs, conversion graphs of calories ↔ kilojoules, line graphs using units of energy to describe consumption of electricity, including kilowatt hours interpret information presented in two-way tables <p>Unit 2: Money, travel and data Topic 1: Managing money Subtopic: Earning money</p> <ul style="list-style-type: none"> understand the purpose of superannuation
<p>General Mathematics</p>	<p>Unit 3: Bivariate data, sequences and change, and Earth geometry Topic 2: Time series analysis Sub-topic: Describing and interpreting patterns in time series data</p> <ul style="list-style-type: none"> describe time series plots by identifying features such as trend (long-term direction), seasonality (systematic, calendar-related movements) and irregular fluctuations (unsystematic, short-term fluctuations), and recognise when there are outliers, e.g. one-off unanticipated events.

Super - Activity 2: Where does super money come from?

<p>Essential Mathematics (Year 11)</p>	<p>Unit 1: Number, data and graphs Fundamental topic: Calculations Sub-topic: Calculations</p> <ul style="list-style-type: none"> solve practical problems requiring basic number operations ascertain the reasonableness of answers to arithmetic calculations use a calculator for multi-step calculations <p>Topic 1: Number Sub-topic: Percentages</p> <ul style="list-style-type: none"> calculate a percentage of a given amount <p>Unit 2: Money, travel and data Topic 1: Managing money Subtopic: Earning money</p> <p>In this sub-topic, students will:</p> <ul style="list-style-type: none"> understand the purpose of superannuation
<p>General Mathematics</p>	<p>Unit 1: Money, measurement and relations Topic 1: Consumer arithmetic Sub-topic: Applications of rates, percentages and use of spreadsheets</p> <ul style="list-style-type: none"> calculate weekly or monthly wages from an annual salary, and wages from an hourly rate, including situations involving overtime and other allowances and earnings based on commission or piecework

Super - Activity 3: What do I need to do about super?
Years 11-12 Task

<p>Essential Mathematics (Year 11)</p>	<p>Unit 1: Number, data and graphs Fundamental topic: Calculations Sub-topic: Calculations</p> <ul style="list-style-type: none"> • solve practical problems requiring basic number operations • use a calculator for multi-step calculations <p>Topic 1: Number Sub-topic: Percentages</p> <ul style="list-style-type: none"> • calculate simple interest for different rates and time periods [complex]. <p>Unit 2: Money, travel and data Topic 1: Managing money Subtopic: Earning money</p> <ul style="list-style-type: none"> • understand the purpose of superannuation <p>Unit 4: Graphs, chance and loans Topic 3: Loans and compound interest Sub-topic: Compound interest</p> <ul style="list-style-type: none"> • understand the concept of compound interest as a recurrence relation • use technology (online calculator) to calculate the future value of a compound interest loan or investment and the total interest paid or earned • use technology (online calculator) to investigate the effect of the interest rate and the number of compounding periods on the future value of a loan or investment
<p>General Mathematics</p>	<p>Unit 1: Money, measurement and relations Topic 1: Consumer arithmetic Sub-topic: Applications of rates, percentages and use of spreadsheets</p> <p>In this sub-topic, students will:</p> <ul style="list-style-type: none"> • review definitions of rates and percentages • apply percentage increase or decrease in various contexts, e.g. determining the impact of inflation on costs and wages over time, calculating percentage mark-ups and discounts, calculating GST, calculating profit or loss in absolute and percentage terms, and calculating simple and compound interest <p>Unit 4: Investing and networking Topic 1: Loans, investments and annuities Sub-topic: Compound interest loans and investments</p> <ul style="list-style-type: none"> • use a recurrence relation $A_{n+1} = r A_n$ to model a compound interest loan or investment, and investigate (numerically and graphically) the effect of the interest rate and the number of compounding periods on the future value of the loan or investment, e.g. payday loan

Super - Activity 3: What do I need to do about super?
Years 11-12 Task

<p>Essential Mathematics (Year 11)</p>	<p>Unit 1: Number, data and graphs Fundamental topic: Calculations Sub-topic: Calculations</p> <ul style="list-style-type: none"> • solve practical problems requiring basic number operations <p>Topic 1: Number Sub-topic: Percentages</p> <ul style="list-style-type: none"> • calculate a percentage of a given amount <p>Unit 2: Money, travel and data Topic 1: Managing money Subtopic: Earning money</p> <ul style="list-style-type: none"> • understand the purpose of superannuation
<p>General Mathematics</p>	<p>Unit 1: Money, measurement and relations Topic 1: Consumer arithmetic Sub-topic: Applications of rates, percentages and use of spreadsheets</p> <ul style="list-style-type: none"> • review definitions of rates and percentages • calculate weekly or monthly wages from an annual salary, and wages from an hourly rate, including situations involving overtime and other allowances and earnings based on commission or piecework

Super - Activity 4: How do I choose a super fund?

<p>Essential Mathematics (Year 11)</p>	<p>Unit 1: Number, data and graphs Topic 2: Representing data Sub-topic: Reading and interpreting graphs</p> <ul style="list-style-type: none"> • interpret information presented in two-way tables
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Super - Activity 4: How do I choose a super fund?
Years 11-12 Task

<p>Essential Mathematics (Year 11)</p>	<p>Unit 1: Number, data and graphs Topic 3: Graphs Sub-topic: Reading and interpreting graphs</p> <ul style="list-style-type: none"> • interpret information presented in graphs, such as step graphs, column graphs, pie graphs, picture graphs, conversion graphs of calories ↔ kilojoules, line graphs using units of energy to describe consumption of electricity, including kilowatt hours <p>Sub-topic: Drawing graphs</p> <ul style="list-style-type: none"> • draw a line graph to represent any data that demonstrates a continuous change, such as hourly temperature [complex]. <p>Unit 3: Measurement, scales and data Topic 3: Summarising and comparing data Sub-topic: Summarising and interpreting data</p> <ul style="list-style-type: none"> • calculate measures of central tendency, the mean and the median from a dataset <p>(continued over)</p>
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Super - Activity 4: How do I choose a super fund?
Years 11-12 Task

<p>Essential Mathematics (Year 11) (continued)</p>	<p>Unit 4: Graphs, chance and loans Topic 3: Loans and compound interest Sub-topic: Compound interest</p> <ul style="list-style-type: none"> • understand the concept of compound interest as a recurrence relation • use technology (spreadsheet) to calculate the future value of a compound interest loan or investment and the total interest paid or earned [complex] • use technology (online calculator) to compare, numerically and graphically, the growth of simple interest and compound interest loans and investments • use technology (online calculator) to investigate the effect of the interest rate and the number of compounding periods on the future value of a loan or investment
<p>General Mathematics</p>	<p>Unit 1: Money, measurement and relations Topic 1: Consumer arithmetic Sub-topic: Applications of rates, percentages and use of spreadsheets In this sub-topic, students will:</p> <ul style="list-style-type: none"> • review definitions of rates and percentages • apply percentage increase or decrease in various contexts, e.g. determining the impact of inflation on costs and wages over time, calculating percentage mark-ups and discounts, calculating GST, calculating profit or loss in absolute and percentage terms, and calculating simple and compound interest <p>Unit 3: Bivariate data, sequences and change, and Earth geometry Topic 3: Growth and decay in sequences Sub-topic; The geometric sequence</p> <ul style="list-style-type: none"> • use geometric sequences to model and analyse (numerically or graphically only) practical problems involving geometric growth and decay (logarithmic solutions not required), such as analysing a compound interest loan or investment, the growth of a bacterial population that doubles in size each hour or the decreasing height of the bounce of a ball at each bounce; or calculating the value of office furniture at the end of each year using the declining (reducing) balance method to depreciate. <p>Unit 4: Investing and networking Topic 1: Loans, investments and annuities Sub-topic: Compound interest loans and investments</p> <ul style="list-style-type: none"> • use a recurrence relation $A_{n+1} = rA_n$ to model a compound interest loan or investment, and investigate (numerically and graphically) the effect of the interest rate and the number of compounding periods on the future value of the loan or investment, e.g. payday loan <p>Sub-topic: Annuities and perpetuities (compound interest investments with periodic payments made from the investment)</p> <ul style="list-style-type: none"> • solve problems involving annuities, including perpetuities as a special case, e.g. determining the amount to be invested in an annuity to provide a regular monthly income of a certain amount.
<p>Mathematical Methods</p>	<p>Unit 1: Algebra, statistics and functions Topic 5: Arithmetic and geometric sequences and series Sub-topic: Geometric sequences</p> <ul style="list-style-type: none"> • establish and use the formula $S_n = t1 rn-1/r-1$ for the sum of the first n terms of a geometric sequence in contexts involving geometric growth or decay, including compound interest and annuities.