# Levels 7/8 economics and Business Activity

## understanding how markets work

### Introduction to Numeracy in Economics and Business

In the subject area of Economics and Business, there are many opportunities to extend and enrich students’ numeracy knowledge and skills. According to the Australian Curriculum, Assessment and Reporting Authority (ACARA, n.d.-e), Economics and Business topics with numeracy links include specialised consumer and financial competencies such as personal budgeting, the calculation of tax expenses, and the examination of interest rates and the costs of credit. Indeed, acquiring the ability to make evidence-based judgements and decisions is important for effective societal participation (Capraro et al., 2014). In the learning area rationale, the Victorian Curriculum and Assessment Authority (n.d.-c) states that Economics and Business students “develop the knowledge, understanding and skills that will inform and encourage them to participate in, and contribute to, the economy.” Moreover, in focusing on decision-making processes and consequences, students become able to “contribute to the development of prosperous, sustainable and equitable Australian and global economies, to secure their own financial wellbeing, and to face the future with optimism and confidence” (VCAA, n.d.-b). More broadly, understanding this notion of financial wellbeing is an important component of being an Economics and Business student. Financial behaviours (money management, informed financial decision making, financial goal setting, etc.); financial knowledge (processing financial information, adapting strategies when making financial decisions, etc.); and personal attributes (financial self-efficacy, control of impulse buying, financial motivation to save, etc.) are all underpinned by numeracy skills. A blend of financial behaviours, financial knowledge, and personal attributes results in financial wellbeing.

Alongside the usage and management of money, which is perhaps one of the more readily presumed avenues by which mathematics can be integrated within Economics and Business, numeracy knowledge and skills are utilised within this learning area as part of a sequence of displaying, interpreting, and analysing data, leading to drawing conclusions, making predictions, and/or forecasting outcomes. Working with data can further entail transferable skills in reasoning and critical thinking (ACARA, n.d.-d; Stokes & Wright, 2013) and build lifelong skills in understanding “public issues, such as national debt, health care reform, welfare reform, and human rights, are often presented to individuals through visual representations of the data, statistical projections, and logical data-supported inferences” (Capraro et al., 2014, p. 427). Using data in Economics and Business studies directly connects with several of the elements of the numeracy general capability within the Australian Curriculum (ACARA, n.d.-a). Further specification of numeracy knowledge and skills specific to Economics and Business (e.g., operating with percentages, number patterns, and algebraic thinking) is a component of the National Numeracy Learning Progression documentation (ACARA, n.d.-c). Consequently, additional learning outcomes made achievable by the considered integration of numeracy within Economics and Business include an understanding of economic models and the relationship between various sectors of the economy, as well as the determination of optimal purchases (ACARA, n.d.-b, n.d.-d). The promotion of numeracy skills within Economics and Business is challenging as the students will arrive at the classroom with varying prior knowledge and skill levels in numeracy. It is thus important to provide activities of personal relevance that can be differentiated.

### Developing Numeracy Understanding in Economics and Business

The ongoing use of hypothetical or real-world scenarios of personal relevance helps students to appreciate how numeracy knowledge and skills are used in society (ACARA, n.d.-a; Sawatzki, 2019). Economics and Business educators, across schooling levels, are aware that the learning area content can be focused around the study of contemporary events and issues. Indeed, across the structure of this learning area, “the content is intended to be taught through relevant contexts, which will help students make connections between what they are learning in class and events or issues that are happening in their local area, Australia and the world.” (VCAA, n.d.-d). Economics and Business can “come alive” for students when the focus of the data is on the students own demographic, or is directed towards a business plan of the students’ own choice. Students can select an industry of interest—such as fashion—and research how best to raise start-up funding, market their product, and make a sales pitch.

Given that numeracy is related to an understanding of the principles of financial management and the ability to make reasoned financial and business decisions, the Consumer and Financial Literacy strand represents a clear connection to this capability. For instance, one Levels 7–8 content description encompasses opportunities to estimate and calculate with whole numbers and work with money: “Explain the reasons why and the ways in which individuals and businesses set, prioritise and plan to achieve financial and organisational goals” (VCAA, n.d.-a, VCEBC014). Multiple opportunities for numeracy development can also be identified within, for example, the Economics and Business Knowledge and Understanding strand. For example, the key organising idea of resource allocation and making choices pertains to satisfying society’s increasing needs and wants that cannot all be satisfied. Choices then need to be made, and these decisions involve numeracy capabilities.

At Levels 9–10, the content description “explain the links between economic performance and living standards, including the variations that exist within and between economies, and give reasons for the possible causes of variations” (VCAA, n.d.-c, VCEBR022) contains elaborations that pertain to numeracy. For instance, interpreting statistical information and recognising and using patterns and relationships would all be relevant to build into the learning experiences provided on this topic. Moreover, quantitative data can be incorporated in an inquiry- or project-based learning approach for other relevant content descriptions selected for numeracy-based learning within Economics and Business (ACARA, n.d.-d; Stokes & Wright, 2013). Inquiry-based practices in the classroom develop critical thinking and numeracy skills, as students employ economic reasoning and analyse evidence. Students practise “thinking like an economist” as they explore inquiry questions (e.g., Why should we promote foreign direct investment? Do we always benefit from fair trade agreements?). The power of the inquiry approach in developing numeracy skills in the Economics and Business learning area is in the use of secondary data. Students are encouraged to question evidence using the rhetoric of economics and business, underpinned by numeracy skills and understandings.

## Lesson Plan: Understanding How Markets Work

In this lesson, students develop an understanding of how markets work. Markets for capital, goods, and services are a major component of economies. Students learn how markets function overall and focus on understanding the labour market in depth.

### Prerequisite/Corequisite Knowledge: Business and Economics

Students need to have and/or develop the ability to:

* Understand markets in terms of types, the particular buyers and sellers involved, the ways that prices are determined, and the market system in Australia
* Comprehend the concepts of labour market employment, unemployment, and participation.

### Background Mathematical Skills and Understandings

Teachers of Economics and Business are not expected to teach the mathematical knowledge and skills that students will draw upon when engaging with this activity. The students will have learnt and should be adept with the required mathematical knowledge and skills to complete the activity. According to the Victorian Curriculum: Mathematics, the required mathematical knowledge and skills should have been developed in earlier years of schooling, that is, by the end of Level 6.

For this activity, the background mathematical skills and knowledge are:

Activity 1:

* Knowledge of and ability to compare amounts of money
* Knowledge of large numbers and ability to compare and order such numbers

Activity 2:

* Knowledge of percentage and ability to express one quantity as a percentage of another

However, students may not be familiar with the calculations needed to work out “percentage change” (a skill encountered in Year 8) and may need assistance. They will have the background mathematical skills to be guided through the calculation in steps.

Activity 3:

* Knowledge of concepts of money
* Ability to express one quantity as a percentage of another (with technology)
* Ability to interpret percentages

Activity 4:

* Ability to interpret statistical data from tables and graphs
* Ability to calculate changes in values (subtraction) with or without technology
* Knowledge of percentages
* Ability to express one quantity as a fraction of another (and, with technology, to express this quantity in decimal form)
* Ability to compare and order numbers, including decimal numbers

## Lesson Description

In this lesson, students’ understanding of how markets work is developed. Students collaborate to brainstorm key terminology about markets, problem-solve how the market mechanism works, and concentrate on an example of the labour market, through identifying, calculating, and discussing current statistics.

### Activity 1: Learning about Market Types

The first activity involves students participating in a small-group brainstorm to establish what they already know and understand about markets. The teacher will allocate each group one of the following market types: share market, housing market, retail market, or labour market. Each group should be encouraged to discuss and record their answers, based on their current understanding (i.e., without consulting any resources), to the following questions:

* What is being exchanged?
* Who are the buyers and sellers?
* How many buyers (few or many) could there be?
* How many sellers (few or many) could there be?
* What might be the likely ratio of buyers to sellers?
* Do you think the government would be involved in this market? Why or why not?

If available, students could share their ideas using technologies such as Padlet or Google Docs. Once each group’s responses have been recorded, the teacher will bring the students together for a whole-class discussion in which each group will share their findings. Where necessary, the teacher will supplement the students’ understanding.

### Activity 2: Problem-Solving How Markets Work

This follow-up activity involves students considering how a market might function with regard to the behaviour of buyers and sellers and the effect on product price and quantity.
The task consists of a short hypothetical stimulus and a set of questions. Both of these should be printed as a worksheet for students, working in pairs, to answer. The task is as follows:

Imagine that only two products are available for sale in a city: meat pies and avocado sandwiches. Assume that it is possible for sellers to switch between making these two products and that there are currently 500 meat pie sellers and 50 avocado sandwich sellers. The price of a meat pie is $4.00 and the price of an avocado sandwich is $5.00. On a very popular television show, it is reported that consuming meat pies has negative health consequences. As a result, avocado sandwiches become more popular than meat pies.

*Part 1:*

* What do you think would happen to the price of avocado sandwiches in this scenario? Will it rise or fall? Why?
* If the starting price of avocado sandwiches is $5.00, nominate a new sandwich price after a price change. What is the difference (in dollars/cents) between your new nominated price and the original price?
* Write this number as a fraction of the original price.
* Express this fraction as a percentage.

*Part 2:*

* What do you think might happen to the number of avocado sellers in this scenario?
* If there were originally 50 avocado sellers, nominate a new number of avocado sellers. What is the difference between the new number of avocado sellers and the original number of avocado sellers?
* Write this number as a fraction of the original quantity.
* Express this fraction as a percentage.

After students answer the questions, the teacher should lead a whole-class discussion about the students’ responses. The teacher should explain the effects on price and quantity if a product becomes more popular (or less popular) with buyers, if the students have not reached this conclusion. In addition, the teacher should clarify why the number of avocado sellers would change, if the students have not reached this conclusion independently.

### Activity 3: Introducing the National Labour Market

In this task, students will visit the Reserve Bank of Australia and the Australian Bureau of Statistics websites to find information on terminology relevant to the labour market. Students need to understand this terminology before they begin the next task, which involves working with national labour market statistics.

Working in pairs, students should complete the following tasks and record their answers in their notes.

* Visit the Reserve Bank of Australia’s website (<https://www.rba.gov.au/education/resources/explainers/unemployment-its-measurement-and-types.html>) to find out what is meant by the term *unemployment* and how the unemployment rate is calculated. Additionally, find out what is meant by the terms *underemployment* and *the participation rate.*
* Visit the Australian Bureau of Statistics website (<https://www.abs.gov.au>) to identify Australia’s most recent unemployment rate.

### Activity 4: Working with National Labour Market Statistics

To further develop an understanding of labour markets using statistics, students are required to access and interpret labour market data using the Australian Bureau of Statistics database (<https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia>). On the website, current and recent estimates of employment, unemployment, underemployment, participation, and monthly hours worked in all jobs are presented in a table. On the left-hand side of the page, headings are shown for these same indicators, which can be clicked on, leading to further graphical information.

Students should be organised into five groups according to the following labour market measurements: unemployment, employment, hours worked, participation, and underemployment. Students are required, in their groups, to compile responses to the following questions:

* What was the value of the statistic in the most recent time period available?
* How much was it 10 years ago?
* Analyse the graph for this statistic in the 10-year time period. Does the statistic increase or decrease over the 10 years? Is it a constant increase or decrease, or is there fluctuation? Is there a pattern?
* Calculate how much the statistic has changed, in percentage terms, from the first year to the last year. Hint: Calculate the difference between the new value and the old value, write this number as a fraction of the old value, and then express this fraction as a percentage.
* Based on what you can see for your statistic in this 10-year time period, what would you predict about its future trend?
* What conclusions can you draw about the statistic that you have been analysing?

Once the students have completed the questions, each group can present an overview of their labour market measurement and conclusions to the class. The teacher can clarify interpretations of the statistics as appropriate.

## Table 1: Links to the Victorian Curriculum – Economics and Business

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| Strand and Sub-Strand (if applicable) | Content Description (Code) | Elaboration(s) |
| * Resource Allocation and Making Choices
 | Examine the ways consumers and producers respond to and influence each other in the market, particularly through price mechanism (VCEBR011)Identify why and how markets may be influenced by government (VCEBR012) | Investigating how consumers rely on businesses to meet their needs and wantsIdentifying and creating a list of who is involved in the market system in AustraliaExplaining the influence of buyers and sellers on prices and how markets enable the distribution and allocation of resourcesIdentifying different types of markets that operate in Australia such as labour markets |
| * Work and Work Futures
 | Describe the nature and investigate the influences on the work environment (VCEBW017) | Identifying changes to the workforce over time, such as the jobs available |
| * Economic and Business Reasoning and Interpretation
 | Identify relationships and trends, and generate a range of alternatives for an economic or business issue or event, evaluating the potential costs and benefits of each alternative and the consequences of proposed actions (VCEBE019) | Interpreting tables, charts and graphs containing economic or business data to identify trends and using the data to make predictions about future trends |

## Table 2: Links to the 21st Century Numeracy Model (Goos et al., 2014)

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| Aspect of the Model |  How This Aspect is Addressed by the Lesson |
| **Attention to Real-Life Contexts*** Citizenship
* Work
* Personal and Social Life
 | Students learn about a central feature of their current and future livelihoods in the form of the labour market at the national level. Market structures, which are relevant to the context of work, are explored with respect to competition. |
| **Application of Mathematical Knowledge*** Problem Solving
* Estimation
* Concepts
* Skills
 | In this lesson, students explore mathematical as well as economics and business-related concepts. Quantitative data, presented in the form of tables and graphs, are analysed. Students undertake calculations involving basic operations, percentages, ratios, and fractions. |
| **Use of Tools*** Physical
* Representational
* Digital
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| **Promotion of Positive Dispositions*** Confidence
* Flexibility
* Initiative
* Risk
 | The representational tools of graphs and tables are used in this lesson. A digital tool, a calculator, is also utilised. |
| **Critical Orientation*** Interpreting Mathematical Results
* Making Evidence-Based Judgements
 | Students become confident in their numeracy knowledge and skills as they apply them to explore the topic of markets. In working with the Australian Bureau of Statistics and the Reserve Bank of Australia websites, students may be encouraged to take the initiative to further investigate such sources as part of a formal future related studies or on an informal basis such as general interest.  |

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