# Levels 9/10 Economics and Business Activity

## The Australian Economy – Performance and international comparisons

### 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: The Australian Economy – Performance and International Comparisons

In this lesson, students develop an understanding of the applied use of economics and business data. Students should complete the activities following the introduction of key concepts and content, including various measurements of economic performance, the positioning of Australia as a trading nation within Asia, and consideration of variation in economic activity. The activities are organised around the themes of domestic economic performance and cross-country performance comparisons.

### Prerequisite/Corequisite Knowledge: Economics and Business

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

* Understand measurements of economic performance, including real Gross Domestic Product (GDP) growth, inflation rate, and unemployment rate
* Employ background information on economic activity in Australia
* Comprehend the geography of Asia and the member countries of the Association of South East Asian Nations (ASEAN)

### 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 these activities. The students will have learnt and should be adept with the required mathematical knowledge and skills to complete the activities. 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 8.

For the two activities, the background mathematical skills and knowledge are:

* Ability to extract and interpret statistical data from graphs/tables
* Ability to order numbers
* Ability to record data in tabular form (with or without technology)
* Ability to prepare bar graphs that include negative and positive values (with or without technology)
* Note: Some students may not have all the needed skills to complete the required tasks in Excel, but they should have the skills to complete such tasks manually.
* Ability to calculate an average (mean) for a set of numbers, including positive and negative numbers (with or without technology)

## Lesson Description

This lesson begins with the teacher introducing the students to the key concepts of GDP, inflation, and unemployment rate. Then, students complete two activities. In the first activity, students explore domestic economic performance, based on the key concepts. In the second activity, students compare Australia’s economic performance with that of five other ASEAN countries.

The International Monetary Fund (IMF) website is the main resource to be utilised in the activities. It is recommended that the teacher becomes familiar with navigating the website in advance of the lesson. Go to <https://www.imf.org/en/Countries>. Select Australia, then Country Data, and then Select an Indicator.

### *Lesson Introduction*

The teacher should begin the lesson by reviewing with students the definitions of GDP, inflation, and unemployment rate based on the class textbook before introducing students to how these measurements are going to be utilised in the lesson.

### Activity 1: Measuring Domestic Economic Performance

Students should work in groups of three or four to complete the following structured activities that involve the IMF website (<https://www.imf.org/en/Countries>). There are three economic measurements for students to examine for Australia in particular: Gross Domestic Product (real GDP growth); Inflation (inflation rate, average consumer prices); and People (unemployment rate). Each group is to be allocated one measurement and accompanying question set from the three sets below. The tables and bar graphs can be either completed manually or with the use of tools such as Excel. The years 2011 to 2021 are used as example dates in the tasks. The teacher can update the listed questions based on new data becoming available.

For real GDP growth:

* Use the IMF website to identify real GDP growth for each year from 2011 to 2021.
* Record in a table the real GDP growth for each year from 2011 to 2021. (Note: Annual data can be obtained by hovering above the point on the graph for each year of interest.)
* Create a bar graph to depict the real GDP growth data. The x-axis should represent the years and the y-axis should represent the real GDP growth. Appropriate scales on the x- and y-axes should be used.
* Calculate the average rate of real GDP growth from 2011 to 2021 and add this value to the bar graph as a horizontal line. Using two different coloured pens, mark the years in which the rate of growth exceeded (one colour) or has fallen below (the other colour) the average. Add a key to the bar graph to explain what the two colours represent.

For the inflation rate:

* Use the IMF website to identify the annual percentage change in consumer prices (the inflation rate) for each year from 2011 to 2021.
* Record in a table the annual percentage change in the inflation rate for each year from 2011 to 2021. (Note: Annual data can be obtained by hovering above the point on the graph for each year of interest.)
* Create a bar graph to depict the inflation rate data. The x-axis should represent the year of interest and the y-axis should represent the inflation rate. Appropriate scales on the x- and y-axes should be selected and used.
* Calculate the average inflation rate from 2011 to 2021 and add this value to the bar graph as a horizontal line. Using two different coloured pens, mark the years in which the inflation rate has exceeded (one colour) and fallen below the average (the other colour). Add a key to the bar graph to explain what the two colours represent.

For the unemployment rate:

* Use the IMF website to identify the annual percentage change in the unemployment rate for each year from 2011 to 2021.
* Record in a table the unemployment rate for each year from 2011 to 2021 (Note: annual data can be obtained by hovering above the point on the graph for each year of interest.)
* Create a bar graph to depict the unemployment rate data. The x-axis should represent the year of interest and the y-axis should represent the inflation rate. Appropriate scales on the x- and y-axes should be selected and used.
* Calculate the average unemployment rate from 2011 to 2021 and add this value to the bar graph as a horizontal line. Using two different coloured pens, mark the years in which the unemployment rate has exceeded (one colour) and fallen below the average (the other colour). Add a key to the bar graph to explain what the two colours represent.

After each group has completed the questions for their allocated economic performance measurement, students should individually use this information to write a summary paragraph about what they have learned about Australia’s economic performance based on the measurement that they have investigated. The teacher should then conduct a brief whole-class discussion, nominating groups for each of the three indicators involved in the activity to report back on their findings, clarifying any points raised in relation to the indicators as required.

### Activity 2: Comparing Australia’s Economic Performance with that of Five Other ASEAN Countries

The teacher should begin this portion of the lesson by informing students that they will be comparing Australia’s economic performance with that of neighbouring countries in South East Asia. It is recommended that the teacher shows students the ASEAN member countries on a world map.

The IMF website is to be utilised again for students to obtain data in order to compare Australia’s economic performance with the performance of five selected ASEAN countries. The teacher should briefly demonstrate to students how to navigate the IMF website (<https://www.imf.org/en/Countries>) prior to proceeding, beginning by selecting a sample country. After a sample country has been selected, start with the example of real GDP growth as the given indicator and then click on IMF DataMapper found in the right-hand corner above the graph. Use the map view, and hover the cursor over selected countries. Note: The data provided on the map view are for the year for which the latest data are available.

Students should remain in the same groups as for Activity 1. In Activity 2, all three economic performance measurements—real GDP growth, inflation rate, and unemployment rate—will be analysed by each group based on the provided questions. The students should begin by analysing real GDP and then analyse the other two measurements. The questions should be completed in exercise books or electronically if it is preferred.

Commencing with real GDP:

* Compare Australia’s most recent real GDP performance with the performance on this measurement by five ASEAN countries. To do this, select five ASEAN countries and record the real GDP measurement for them.
* Complete a table in which you rank Australia and the five selected ASEAN countries in order from highest to lowest real GDP performance.
* Describe Australia’s real GDP performance compared to those of the five countries that you have selected. What conclusions can be drawn from the data?
* Scroll below the map to the trend diagram representing the time period from 1980 to present. Add data for Australia and the five ASEAN countries selected via the tool Add Another Item, found on the right-hand side near the bottom of the trend graph. The historical trends in real GDP over time for all of the countries can then be examined. Describe Australia’s real GDP trend performance compared to the five other selected countries from 1980 to present.

Students should then repeat these four steps for Australia and the same five countries, first for inflation rates and then for unemployment rates. Note: Students will have to return to the IMF Country Information page (<https://www.imf.org/en/Countries>), select Australia, and then change the economic indicator to inflation rate (and then unemployment rate).

Once students have gathered data for all three measurements, they should individually write half a page comparing the economic performance of Australia to that of the other selected countries. Specifically, students should justify which country had the best overall economic performance over time, based on the data analysed. After the individual task has been completed, the teacher should bring the class back together for a short discussion, seeking different responses with regards to which country had the best overall economic performance over time.

## 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
 | Investigate Australia as a trading nation and its place within Asia and the global economy (VCEBR020)Identify and explain the indicators of economic performance and examine how Australia’s economy is performing (VCEBR021)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 (VCEBR022) | The characteristics of the Australian economyIdentifying economic objectives of the Australian economy and explain how these may be used as indicators of economic performanceIdentifying and explaining indicators of economic performance such as economic growth rates, unemployment rates and inflation ratesInvestigating the performance of the Australian economy using key indicators to form a conclusionComparing Australia’s resource base with another economy and exploring how this may influence trading relationships |

## 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
 | In this lesson, students engage with national data on unemployment and other metrics, and draw international comparisons, reflecting a dimension of personal and social life. |
| **Application of Mathematical Knowledge*** Problem Solving
* Estimation
* Concepts
* Skills
 | Students work with mathematical concepts as applied to economics and business-related concepts. Students analyse provided statistics by calculating means and ordering values. |
| **Use of Tools*** Physical
* Representational
* Digital
 | Representational tools (i.e., bar graphs and tables) are analysed and created. A digital tool (i.e., a calculator) may also be utilised for calculating mean values. |
| **Promotion of Positive Dispositions*** Confidence
* Flexibility
* Initiative
* Risk
 | Students become confident in numeracy knowledge and skills as applied to economics and business. In working with IMF data, 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.  |
| **Critical Orientation*** Interpreting Mathematical Results
* Making Evidence-Based Judgements
 | Interpreting the data analysed and calculations made relating to key business and economic metrics is a key feature of the lesson. Extrapolation from the data in the form of drawing conclusions and making judgements relating to these metrics is also involved. |

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