VCE Vocational Major

**Unit 3 Respectful and Ethical Entreperneurs**

Numeracy Curriculum

Support Material

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# **Numeracy activities**

# **Numeracy Task 1-Big and small numbers**

Numeracy Context: Health (d)

Area of Study (AoS): 1 Number

|  |
| --- |
| Key knowledge and key skills |
| **AoS 1 KS 1** Fluently read very large and very small numbers  **AoS 1 KS 4** Solve problems involving powers and square roots |

|  |
| --- |
| Task Checklist |
| Students will complete the following for Numeracy Context: Health (d)  Task 1- Activity 1.1 What is a big number?  Task 1- Activity 1.2 What is a small number?  Task 1- Activity 1.3 Power and square roots  Task 1- Activity 1.4 Partner challenge  Task 1- Activity 1.5 Number confidence reflection  Task 1- Activity 1.6 Numbers related to health  Task 1- Activity 1.7 Challenge task |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generated In this task, you will need will fluently read and identify very large and very small numbers in a number of health scenarios. This task is based on numbers you will or may see in regards to your own health, Australia’s health and global health.

## Task 1- Big and small numbers Activity 1.1 What is a big number?

A purple icon with check marks

Description automatically generatedA black background with a black square

Description automatically generated with medium confidence **Part 1: Small business focus**- Read and then write what the number are in the table below. You will need to find, caluculate or research the following. Then record your answers in the table.

|  |  |  |
| --- | --- | --- |
| **Item** | **Number** | **In words** |
| Weights total |  |  |
| Membership Fees |  |  |
| Exercise Industry Employees |  |  |
| **Australian numbers** | | |
| What is the [current Australian population?](https://www.abs.gov.au/statistics/people/population/national-state-and-territory-population/latest-release) |  |  |
| [How many Australians in 2021 were living with diabetes?](https://www.aihw.gov.au/reports-data/health-conditions-disability-deaths/diabetes/overview) |  |  |
| [How many road fatalities were there in 2023 in Australia?](https://roads.org.au/1266-road-fatalities-recorded-in-2023/#:~:text=1%2C266%20people%20tragically%20lost%20their,year%2Don%2Dyear%20increase.) |  |  |
| [What is Australia’s current ‘Total Confirmed Cases’ of Covid cases?](https://covidlive.com.au/) |  |  |

## Task 1- Big and small numbers Activity 1.2 What is a small?

A purple icon with check marks

Description automatically generatedA black background with a black square

Description automatically generated with medium confidence **Part 1: Small business focus-** Read and then write what the number are in the table below. You will need to find, caluculate or research the following. Then record your answers in the table.

|  |  |  |
| --- | --- | --- |
| **Item** | **Number** | **Write your answer in words as a fraction.** |
| Blood alcohol concentration | 0.1% |  |
| Average hair thickness | 0.05mm |  |
| [**Conversion calculator link**](https://www.calculator.net/conversion-calculator.html) | | |
| 1 Micrometre to mm |  |  |
| 1 Nanometer to mm |  |  |

## Task 1- Big and small numbers Activity 1.3 Power and square roots

A purple icon with check marks

Description automatically generated **Part 1:** Identify the number and write the number in the tables below.

|  |  |  |
| --- | --- | --- |
| **Item** | **Number** | **Written form** |
| **Example:** 102 | 100 | One hundred |
| 52 |  |  |
| 92 |  |  |
| 23 |  |  |
| 43 |  |  |
| 53 |  |  |
| 103 |  |  |

|  |  |  |
| --- | --- | --- |
| **Item** | **Number** | **Written form** |
| **Example:** √4 | 2 | Two |
| √25 |  |  |
| √64 |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Fraction** | **Decimal** | **Written form** |
| **Example:** 10-1 |  | 0.1 | One tenth |
| 10-2 |  |  |  |
| 10-3 |  |  |  |

## Task 1- Big and small numbers Activity 1.4 Partner challenge

A purple icon with check marks

Description automatically generated **Part 1: Large and Small Number fluency -** write and record 3 large/small numbers to test your partner on and get your partner to read the numbers out loud! Then switch roles (Up to 1 Billion).

|  |
| --- |
| A purple icon with check marks  Description automatically generated  My Testing Numbers  1 -  2 -  3 - |

|  |
| --- |
| A purple icon with check marks  Description automatically generated  My Partner’s Numbers (for me)  1 -  2 -  3 - |

## Task 1- Big and small numbers Activity 1.5 Numbers confidence reflection

A purple icon with check marks

Description automatically generated **Part 1:** In the number areas of money, workplace and measurement, how confident do you feel using the following? Give yourself a score out of 1-5 in the right hand column in the table below (1- Not confident at all to 5-Very confident)

|  |  |
| --- | --- |
| One to 1000 | A purple icon with check marks  Description automatically generated Add your rating out of 1-5 is this colum. |
| 1000-100000 |  |
| 100000-1000000 |  |
| Beyond 1 million |  |
| Tenths, hundredths and thousanths |  |

## Task 1- Big and small numbers Activity 1.6 Numbers related to health

A purple icon with check marks

Description automatically generated **Part 1:** List some numbers, large and small that relate to your health.

**Hint-** you could think about the following, height, weight, hours of rest, total steps per day, heart rate, blood pressure, energy consumed/needed per day etc.

|  |  |
| --- | --- |
| **Number example** | **Context** |
| Example- 371 kj | Energy in a banana. |
|  |  |
|  |  |
|  |  |

## Task 1- Big and small numbers Activity 1.7 Large and small number problem

A purple icon with check marks

Description automatically generated **Part 1:** The distance between the earth and the moon is 384,400km, and the thickness of a piece of paper is approximately 0.001cm. How many times would this paper have to be folded to reach the moon?

|  |  |
| --- | --- |
| My guess that the number of times the paper will need to be folded is… | |
| 1 fold | 0.002 cm |
| 2 folds | 0.004 cm |
| 3 folds | 0.008 cm |
| 10 folds |  |

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Description automatically generated with medium confidence **Answe**r - [Watch here for the problem solution](https://www.youtube.com/watch?v=AmFMJC45f1Q)

## Task 1 Big and small numbers– Peer feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 1.1** | What’s a big number? | Choose an item. |
| **Activity 1.2** | What’s a small number? | Choose an item. |
| **Activity 1.3** | Power and square roots | Choose an item. |
| **Activity 1.4** | Partner challenge | Choose an item. |
| **Activity 1.5** | Number confidence reflection | Choose an item. |
| **Activity 1.6** | Numbers related to health | Choose an item. |
| **Activity 1.7** | Challenge task | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 1 KS 1 Fluently read very large and very small numbers  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning:** You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can fluently read large and small numbers. | **Consolidating** You have shown a basic ability to fluently read large and small numbers. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to fluently read very large and very small numbers numbers. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high ability to fluently read large and small numbers within a range of different contexts. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 1 KS 4 Solve problems involving powers and square roots  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning:** You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can solve problems involving powers and square roots. | **Consolidating:** You have shown a basic understanding of solving problems involving powers and square roots. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an understanding of solving problems involving powers and square roots. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of solving problems involving powers and square roots. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

# **Numeracy Task 2-Decimals, percentages and ratios**

Numeracy Context: Health (d)

Area of Study (AoS): 1 Number

|  |
| --- |
| Key knowledge and key skills |
| **AoS 1 KS 2** Solve a range of practical calculations including positive and negative numbers, including rounding whole numbers and decimals up to three places.  **AoS 1 KS 3** Solve problems involving fractions, decimals, percentages, including calculating percentage increase and decrease.  **AoS 1 KS 5** Solve simple problems with ratios and proportions. |

|  |
| --- |
| Task Checklist |
| Students will complete the following for Numeracy Context: Vocational (e)  Task 2- Activity 2.1 Finding equivalent decimals, fractions and percentages  Task 2- Activity 2.2 Heart rate  Task 2- Activity 2.3 Working out of percentages of amounts  Task 2- Activity 2.4 Ratios and simplifying  Task 2- Activity 2.5 Proportion  Task 2- Activity 2.6 Proportion and ratio |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated In this task you will need to solve health-related problems using ratio and proportions calculations. At the end of this task students will be able to use ratios and proportions to solve health-related problems and make predictions.

## Task 2- Decimals, percentages and ratios Activity 2.1 Findings equivalent decimals, fractions and percentages.

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Description automatically generated **Part 1:** Fill in the table below by providing the equivalent decimal, fraction, and percentage for each row.

|  |  |  |
| --- | --- | --- |
| **Fraction** | **Decimal-** Round to 2 decimal places.  Hint- numerator divided by denominator. | **Percentage**- Round to the nearest whole number.  Hint- Decimal multipled by 100. |
| **Example:**  70/100  Simplified 7/10 | 0.70 | 70% |
| 2/3 |  |  |
|  |  | 85% |
|  | 0.55 |  |
| 70/80  Simplified=7/8 |  |  |

## Task 2- Decimals, percentages and ratios Activity 2.2 Heart rate

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Description automatically generated **Part 1: Resting heart rate (HR)-** You need to record your resting heart rate measured as beats per minute (BPM).

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Description automatically generated with medium confidence Hint- you can do this in a number of ways including - a smartwatch, taking your radial pulse or carotid pulse. use the following [website](https://www.mayoclinic.org/how-to-take-pulse/art-20482581) that explains these techniques.

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add your response here. |

A purple icon with check marks

Description automatically generated **Part 2: Active heart rate-** Complete the following:

* Run, jump or skip for 1 minute.
* Directly after the minute, record your heart rate using the same method you used above. Record your heart rate below.

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add your response here. |

A purple icon with check marks

Description automatically generated **Part 3:** Find the percentage increase.

**Worked example**

|  |
| --- |
| Finding out percentage increase example:  Rod had a resting heart rate of 80 beats per minute. Rod completed 1 minute of high-intensity exercise. After 1 minute, Rod’s heart rate was 130 beats per minute (active heart rate). Calculate the percentage increase of Rod’s heart rate as a percentage.     * 1. **Find the difference:**   (Active heart rate) - (Resting heart rate)  130 - 80 = 50 bpm difference.  **2. Divide the difference by the initial value:**  (Difference between active and resting HR) / (resting HR)  50 / 80 = 0.625  **3. Multiply by 100:**  0.625 x 100  62.5% increase |

In the space below, calculate the percentage increase in your heart rate from resting to active.

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add your response here. |

A purple icon with check marks

Description automatically generated **Part 4:** Find your maximum heart rate.To find out your approximate maximum heart rate, use the formula below.

Maximum heart rate = 220 -  your age.

**Worked example**

|  |
| --- |
| Rod is 50 years old.  Maximum heart rate = 220 - 50  Maximum heart rate = 170 beats per minute |

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add your response here. |

## Task 2- Decimals, percentages and ratios Activity 2.3 Working out percentage amounts

A group of people in a room

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Description automatically generated You are following a training program that requires you to monitor the intensity of your workouts. Use the table below to determine the heart rate needed to maintain different intensity levels.

|  |  |  |
| --- | --- | --- |
| **Zone** | **Intensity** | **Percentage of maximum heart rate %** |
| Zone 1 | Very light | 50-60% |
| Zone 2 | Light | 61-70% |
| Zone 3 | Moderate | 71-80% |
| Zone 4 | Hard | 81-90% |
| Zone 5 | Maximum | 91-100% |

**Worked example**

|  |
| --- |
| Rod's coach has advised that one of his 60-minute training sessions per week should be at a 'moderate' intensity. Based on the table above, calculate the heart rate range Rod should maintain during this session.  **Given:**   * Rod’s maximum heart rate (HR) = 170 bpm * Moderate intensity heart rate range = 71% - 80% of maximum heart rate   Calculating the Heart Rate Range  **Lowest:**   * Determine 71% of the maximum heart rate. * Convert the percentage to a decimal: 71/100=0.71 * Multiply by the maximum heart rate: 0.71×170=121   **Highest:**   * Determine 80% of the maximum heart rate. * Convert the percentage to a decimal: 80/100=0.80 * Multiply by the maximum heart rate: 0.80×170=136   **Conclusion:**  To train at a 'moderate' intensity, Rod should maintain his heart rate between 121 and 136 bpm. |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** During your Tuesday afternoon fitness session, you aim to exercise at a moderate intensity. Based on the information from the previous questions and the table, what heart rate range should you maintain to achieve this level of intensity?

|  |
| --- |
| **Your heart rate:**  **Moderate intensity heart rate range (refer to table):**  **Lowest:**  **Highest:**  **Conclusion:** |

A purple icon with check marks

Description automatically generated **Part 2:** During your workout, you want to spend 10 minutes exercising at a 'hard intensity'. Using the information from the previous questions and the table, determine the heart rate range you should maintain to reach this intensity level.

|  |
| --- |
| **Your max heart rate:**  **Moderate intensity heart range (refer to table):**  **Lowest:**  **Highest:**  **Conclusion:** |

## Task 2- Decimals, percentages and ratios Activity 2.4 Ratios and simplifying

**How to simplify a ratio**

**Worked example**

|  |
| --- |
| To simplify ratios, divide all the numbers in the ratio by the same amount.  **30:10**  **3:1**  Divide both sides  by 10 |

|  |
| --- |
| You are planning a 40-minute workout session that includes 30 minutes at a 'moderate intensity' and 10 minutes at a 'hard intensity'. Write a ratio that represents the time spent at each intensity level.  **Ratio**:  30:10  **Simplified Ratio:** 3:1 |

A purple icon with check marks

Description automatically generated **Part 1:** You are completing a 60-minute session, with 45 minutes at a 'light' intensity and 15 minutes at a 'moderate' intensity. Write the original ratio and then simplify it to reflect this distribution.

|  |
| --- |
| **Initial ratio:**  **Simplified ratio:** |

A purple icon with check marks

Description automatically generated **Part 2:** As part of your circuit training, you perform 45 seconds of work followed by 15 seconds of rest. Write this work-to-rest ratio and then simplify it.

|  |
| --- |
| **Initial ratio:**  **Simplified ratio:** |

## Task 2- Decimals, percentages and ratios Activity 2.5 Proportion

**Worked example**

|  |
| --- |
| Jo is a consistent runner and keeps his pace stable. He runs 6 km in 36 minutes. How far does he run in 96 minutes?  Speed = Distance ÷ time  First, convert the time into hours 36 ÷ 60 = 0.6 hours  Speed = 6 ÷ 0.6 = 10 km/h  Convert 96 minutes to hours 96 ÷ 60 = 1.6  Distance = speed x time  Distance = 10 x 1.6 = 16 km |

A purple icon with check marks

Description automatically generated **Part 1:** Review the worked example above and respond to the questions below.

1. In a relay walk, Team A have 3 walkers who walk 120 km over the whole distance. If they each walk equal distances how far does each walker do?

|  |
| --- |
| A purple icon with check marks  Description automatically generated  Working: |

1. Team B has 5 walkers doing the same distance. If they each walk equal distances how far does each walker do?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

1. Team B has a walker injured and they can no longer do their part in the relay. How much do the other walkers have to do now?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

## Task 2- Decimals, percentages and ratios Activity 2.6 Proportion and ratio

**Worked example**

|  |
| --- |
| Lachie’s workout is in the moderate and hard zone at a ratio of 2 : 3. If he works out for 30 minutes, how much time is he working out in each of the zones?  Moderate : hard               2 : 3  Add the ratio 2 + 3 = 5  Then 30 minutes ÷ 5 =  6 minutes  Moderate : hard               2 : 3         2 x 6 : 3 x 6             12 : 18  12 minutes in the moderate zone and 18 minutes in the hard zone |

A purple icon with check marks

Description automatically generated **Part 1:** All of the following students did a 3:1 ratio of their workout in the hard and maximum range. They each worked out for different times. Calculate how much time they each spent in hard and maximum zone. Complete the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Student** | **Overall workout time in minutes** | **Hard** | **Maximum** |
| Roisin | 40 |  |  |
| Sanjeev | 56 |  |  |
| Rehana | 72 |  |  |
| A purple icon with check marks  Description automatically generated  Workings: | | | |

## Task 2 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 2.1** | Finding equivalent decimals, fractions and percentages | Choose an item. |
| **Activity 2.2** | Heart rate | Choose an item. |
| **Activity 2.3** | Working out percentages of amounts | Choose an item. |
| **Activity 2.4** | Ratios and simplifying | Choose an item. |
| **Activity 2.5** | Proportion | Choose an item. |
| **Activity 2.6** | Proportion and ratio | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 1 KS 2 Solve a range of practical calculations including positive and negative numbers, including rounding whole numbers and decimals up to three places.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can solve calculations and round whole numbers and decimal places | **Consolidating:** You have shown a basic understanding of solving problems including rounding numbers and decimals. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an understanding of solving problems including accurately rounding numbers and decimals. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of solving problems involving accurately rounding numbers and decimals. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 1 KS 3 Solve problems involving fractions, decimals, percentages, including calculating percentage increase and decrease.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can solve problems involving fractions, decimals and percentages. | **Consolidating:** You have shown a basic understanding of solving problems involving fractions, decimals and percentages, including percentage increase and decrease. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an understanding of solving problems involving fractions, decimals and percentages, including percentage increase and decrease. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of solving problems involving fractions, decimals and percentages, including percentage increase and decrease. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 1 KS 5 Solve simple problems with ratios and proportions.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can solve simple problems with ratios and proportions. | **Consolidating:** You have shown a basic understanding of solving problems with ratios and proportions. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown a basic understanding of solving problems with ratios and proportions. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Excelling:** You have shown a high level of understanding of solving problems with ratios and proportions. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

# **Numeracy Task 3 – Profit and loss**

Numeracy Context: Vocational (e)

Area of Study (AoS): 1 Number

|  |
| --- |
| Key knowledge and key skills |
| **AoS 1 KS 2** Solve a range of practical calculations including positive and negative numbers, including rounding whole numbers and decimals up to three places.  **AoS 1 KS 3** Solve problems involving fractions, decimals, percentages, including calculating percentage increase and decrease. |

|  |
| --- |
| Task Checklist |
| Students will complete the following for Numeracy Context: Vocational (e)  Task 3- Activity 3.1 Stop watch challenge  Task 3- Activity 3.2 Ordering numbers  Task 3- Activity 3.3 Rounding to decimal places  Task 3- Activity 3.4 Fractions, decimals and percentages |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generated In this task, you will solve a range of number problems, round whole numbers and decimals and calculate percentage increase and decrease. You will solve problems involving positive and negative numbers, round to 3 decimal places and increase/decrease percentages. You will need to use a stopwatch. You will be given a range of data and apply the key mathematical concepts to the provided data.

## Task 3- Profit and loss 3.1 Stop watch challenge

A purple icon with check marks

Description automatically generated **Part 1:** The aim is to stop the stopwatch at exactly 1 second = 1.00

|  |  |
| --- | --- |
| **Attempt** | **Result** |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |

A purple icon with check marks

Description automatically generated **Part 2:** Ordering Numbers - Using the measurements you have just collected in part 1 order them from nearest to furthest to 1.00

|  |  |
| --- | --- |
|  | **1.00** |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |

## Task 3- Profit and loss 3.2 Ordering numbers

A group of people in a room

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Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1: Ordering Numbers-** These businesses worked at the 2023 student run Vfestival. Using the profit and loss statements, order from most profitable to least profitable business.

|  |  |  |
| --- | --- | --- |
| **Business** | **Profit/Loss statements** | **Ordered from most to least profitable** |
| **Butters Burgers** | + $17.20 |  |
| **Coffee Van** | + $124.50 |  |
| **Vegan Ventures** | -$56 |  |
| **Retro Fashion** | + $60.20 |  |
| **Recycled Art** | -$45 |  |
| **Busking** | +$17.15 |  |
| **Tarot Readings** | +$30 |  |
| **Bead Bus** | -$18 |  |

A group of people in a room

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2: Show me the Money-** The aim is to look at some of the biggest net revenues made in business in 2023.

**Worked example**

|  |  |  |
| --- | --- | --- |
| **Name** | **Profit/loss** | **Placing** |
| Butters Burgers | $17.20 | 2nd |
| Coffee Van | $124.50 | 3rd |
| Commonwealth Bank | $10.2 billion | 1st |

Fill out the placings for the table below.

|  |  |  |
| --- | --- | --- |
| **Name** | **Net income ($)** | **Placing** |
| Shell | 29 billion |  |
| Apple | 94.76 billion |  |
| Alphabet (Google) | 60.95 billion |  |
| Microsoft | 72.36 billion |  |

## Task 3- Profit and loss 3.3 Rounding decimal places

A group of people in a room

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Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1: Rounding to 3 decimal places-**  Percentage profit returns for these successful businesses were incredibly tight. Complete the table below to round profit returns to the necessary 3 decimal places.

|  |  |  |
| --- | --- | --- |
| **Business name** | **Initial return**  **(4 decimal places)** | **Offical dividend return**  **(3 decimal places)** |
| Butters Burgers | 9.5765 % |  |
| Coffee Van | 9.6831 % |  |
| Retro Fashion | 9.7349 % |  |
| Tarot Readings | 9.7657 % |  |
| Busking | 9.7684 % |  |

A green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2: Rounding to 3 decimal places-** Some of the businesses at the festival made a loss. Complete the table below to round the loss to 3 decimal places.

|  |  |  |  |
| --- | --- | --- | --- |
| **Business name** | **Initial loss**  **(4 decimal places)** | **Offical dividend loss**  **(3 decimal places)** | **Placing** |
| Vegan Ventures | -11.8734 % |  |  |
| Recycled Fashuon | -5.4987 % |  |  |
| Bead Bus | -8.2969 % |  |  |

A green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 3: Butters v Coffee Van -** Looking at the above figures, what exactly was the difference between Butters Burgers and the Coffee Van in % return?

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add answer and workings out here. |

A green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 4:** Compare the figures from the tables above. Calculate the difference for the following business names below.

|  |
| --- |
| **Butters Burgers and Busking**  **Tarot Readings and Recycle Fashion**  **Coffee Van and Bead Bus**  **Vegan Ventures and Recycled Fashion** |

## Task 3- Profit and loss 3.4 Fractions, decmals and percentages

**Worked example**

|  |
| --- |
| Attendance at a VCE-VM excursion - 20 Total  Year 11’s - 12 students  Year 12’s - 8 students |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** The aim is to see what our VFest attendance breakdown was. Usining the attendance numbers complete the table below.

**Festival 2024 Total Attendance**- 80

**Year 11’s** - 25

**Year 12’s** - 50

**Staff – 5**

|  |  |  |
| --- | --- | --- |
| **Fraction** | **Decimal** | **Percentage** |
| **Year 11-** |  |  |
| **Year 12-** |  |  |
| **Staff-** |  |  |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2: Percentage increase and decrease-** Review the worked example and then complete the table below.

**Worked example**

|  |
| --- |
| **Excursion Participation -  Percentage increase and decrease.**  Total Y12 participants - 8  **I want to increase this participation by 50%** (work out what 50% of 8 is and then add this to the original amount)  **Working out:** 8 x 0.50 (50%) = 4  original amount + increase = new total                 8 + 4 = 12  **I want to decrease this participation by 25%** (work out what 25% of 8  is and subtract this from the original amount)  **Working out**: 8 x 0.25 (25%) = 2  Original amount - decrease = new total                 8 - 2 = 6 |

|  |
| --- |
| A purple icon with check marks  Description automatically generated **Festival 2025 Participation Percentage increase and decrease.**  Total Y12 Participants =   * **Increase your Y12 participation numbers by 30%**   Working out-   * **Decrease your Y12 participation numbers by 5%**   Working out-   * **Try these using ‘total attendance’ -** * **Increase Participants by 75%**   Working out-   * **Decrease Participants by 25%**   Working out- |

## Task 3 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 3.1** | Stop watch challenge | Choose an item. |
| **Activity 3.2** | Ordering numbers | Choose an item. |
| **Activity 3.3** | Rounding decimal places | Choose an item. |
| **Activity 3.4** | Fractions, decimals and percentages | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 1 KS 2 Solve a range of practical calculations including positive and negative numbers, including rounding whole numbers and decimals up to three places.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can solve calculations and round whole numbers and decimal places. | **Consolidating:** You have shown a basic understanding of solving problems including rounding numbers and decimals. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an understanding of solving problems including accurately rounding numbers and decimals. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of solving problems involving accurately rounding numbers and decimals. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 1 KS 3 Solve problems involving fractions, decimals, percentages, including calculating percentage increase and decrease.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning:** You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can solve problems involving fractions, decimals and percentages. | **Consolidating:** You have shown a basic understanding of solving problems involving fractions, decimals and percentages, including percentage increase and decrease. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an understanding of solving problems involving fractions, decimals and percentages, including percentage increase and decrease. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of solving problems involving fractions, decimals and percentages, including percentage increase and decrease. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

# **Numeracy Task 4 – Shape properties**

Numeracy Context: Recreational (f)

Area of Study (AoS): 2 Shape

|  |
| --- |
| Key knowledge and key skills |
| **AoS 2 KS 2** Determine reflectional and rotational symmetry and use these to manipulate shapes.  **AoS 2 KS 3** Understand common angle properties in relation to two-dimensional shapes. |

|  |
| --- |
| Task Checklist |
| Students will complete the following for Numeracy Context: Recreational (f)  Task 4- Activity 4.1 2D shape matching  Task 4- Activity 4.2 Rotational symmetry  Task 4- Activity 4.3 Reflection symmetry  Task 4- Activity 4.4 Design task |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated In this task, you will be able to identify that 2D shapes have their own patterns and properties depending on many factors, such as angle, sides, length, height, width, area, volume, etc. You will need to manipulate 2D shapes to identify their various properties and patterns.

## Task 4- Shape properties Activity 4.1 2D Shape matching

A purple icon with check marks

Description automatically generatedA green outline of a person with a computer

Description automatically generated **Part 1:** 2D shapes and 3D shapes are explained widely to make you understand the different types of objects you come across in real life. These shapes have their own pattern and properties. The shapes can vary depending on many factors, such as angle, sides, length, height, width, area, volume, etc. Match the correct properties below with the correct 2D shape.

|  |  |  |
| --- | --- | --- |
| 4 equal sides.  4 equal angles (90˚).  The total angle of a circle is equal to 360˚ .  It can have no, 2 or 3 equal sides.  5 sides (can be equal or unequal).  6 sides  (can be equal or unequal).  8 sides  (can be equal or unequal).  2 sets of 2 equal angles.  All sides the same length.  2 sets of 2 equal angles.  6 sides (can be equal or unequal).  5 sides  (can be equal or unequal).  It can have no, 2 or 3 equal sides.  2 sets of 2 equal sides.  Four equal angles (90˚).  2 equal sides, 1 unequal.  No equal angles.  At least 2 parallel sides. | | |
| **2D Shapes** | **Sides** | **Angles** |
| Rectangle  A purple icon with check marks  Description automatically generated Add a picture of the correct shape here. | 2 sets of 2 equal angles. |  |
| Equilateral triangle |  |  |
| Isosceles triangle |  | 2 sets of 2 equal angles. |
| Scalene Triangle | 3 unequal sides. |  |
| Circle | **Circumference= π x diameter** |  |
| Pentagon |  |  |
| Hexagon |  |  |
| Octagon |  | 8 angles (can be equal or unequal) |
| Parallelogram |  |  |
| Rhombus |  |  |
| Trapezium |  | Can have pairs of equal angles. |

## Task 4- Shape properties Activity 4.2 Rotational symmetry

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generated Rotational symmetry of a shape means that when an object is rotated on its centre axis, the shape of the object can look exactly like how it looked before it was rotated. Many geometrical shapes appear to be symmetrical when they are rotated 180 degrees or with some angles, clockwise or anticlockwise.

**Worked example**

|  |
| --- |
| H has rotational symmetry. When you turn it 180° it looks exactly like it did originally. It has a rotational symmetry of 2 (180° and 360°).   **No rotational symmetry:** If a shape only has a rotational symmetry of 1(360°) we say it DOES NOT have rotational symmetry. (The hard thing to get your head around is that when a shape has more than just 360° rotational symmetry we count the 360° as being one of its rotational symmetries, but when a shape only has 360° symmetry we do not count that as being 1.)  A kite is an example of a shape with no rotational symmetry. A shape with no rotational symmetry only fits into its original outline once (360°). We can see that the only time that the kite matches its outline is when it has not been rotated. |

A purple icon with check marks

Description automatically generatedA green outline of a person with a computer

Description automatically generated **Part 1:** Complete the table below.

|  |  |  |
| --- | --- | --- |
| **Shape** | **Does this shape have rotational symmetry? Yes/ No** | **Number of rotational symmetry** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

## Task 4- Shape properties Activity 4.3 Reflection symmetry

**Worked example**

|  |
| --- |
| Any image is said to have reflectional symmetry if there is one or more than one line that could be drawn on the shape which would mean both sides of the line matched each other.  **These letters have reflection symmetry.**    = 1 line of symmetry  **A rectangle has reflection symmetry.**  **A grid with blue lines  Description automatically generated**= 2 lines of symmetry  A black square with blue lines  Description automatically generated**A square has reflection symmetry.**  = 4 lines of symmetry |

A purple icon with check marks

Description automatically generatedA green outline of a person with a computer

Description automatically generated **Part 1:** Add the lines of symmetry to the following images and shapes.

|  |  |  |
| --- | --- | --- |
|  |  |  |
| **Lines of reflectional symmetry** | **Lines of reflectional symmetry** | **Lines of reflectional symmetry** |
| A purple icon with check marks  Description automatically generated Add number of lines here. |  |  |
|  |  |  |
| **Lines of reflectional symmetry** | **Lines of reflectional symmetry** | **Lines of reflectional symmetry** |
| A purple icon with check marks  Description automatically generated Add number of lines here. |  |  |
|  |  |  |
| **Lines of reflectional symmetry** | **Lines of reflectional symmetry** | **Lines of reflectional symmetry** |
| A purple icon with check marks  Description automatically generated Add number of lines here. |  |  |

## Task 4- Shape properties Activity 4.4 Design task

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** A new gym is opening up across the road from the school. They want local students to come up with designs for their new logo. The design brief is to create 3 different designs with the following criteria:

1. Logo 1 needs to have horizontal or vertical symmetry

2. Logo 2 should only be made up of simple 2 dimensional shapes

3. Logo 3 needs to have rotational symmetry

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add your designs here. |

## Task 4 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 4.1** | 2D Shape matching | Choose an item. |
| **Activity 4.2** | Rotational symmetry | Choose an item. |
| **Activity 4.3** | Reflection symmetry | Choose an item. |
| **Activity 4.4** | Design task | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 2 Determine reflectional and rotational symmetry and use these to manipulate shapes.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can determine reflectional and rotational symmetry and use these to manipulate shapes. | **Consolidating:** You have shown a basic ability to determine reflectional and rotational symmetry and use these to manipulate shapes. To bump it up, check over your answers to see if they are correct and make sure all parts of each question are answered. | **Achieving:** You have shown an ability to determine reflectional and rotational symmetry and use these to manipulate shapes. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high ability to determine reflectional and rotational symmetry and use these to manipulate shapes. You have included great detail in your answers and all answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 3 Understand common angle properties in relation to two-dimensional shapes.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you understand common angle properties in relation to 2D shapes. | **Consolidating:** You have shown a basic understanding of common angle properties in relation to 2D shapes. To bump it up, check over your answers to see if they are correct and make sure all parts of each question are answered. | **Achieving:** You have shown an ability to understand angle properties in relation to 2D shapes. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of angle properties in relation to 2D shapes. You have included great detail in your answers and all answers are correct. Great work! |
| Teacher Comment: | | | | |

# **Numeracy Task 5- Shapes in recreational settings**

Numeracy Context: Recreational (f)

Area of Study (AoS): 2 Shape

|  |
| --- |
| Key knowledge and key skills |
| **AoS 2 KS 1** Describe and classify a range of different two-dimensional shapes and three-dimensional objects  **AoS KS 4**  Use ideas of congruence and self-similarity  **AoS 2 KS 6** Determine, name and describe patterns according to different properties of shapes such as those found in engineering, architecture and design, for example, bridges, buildings, and sculptures. |

|  |
| --- |
| Task Checklist |
| Task 5- Activity 5.1 Identifying shapes in recreational settings  Task 5- Activity 5.2 Identifying shapes in architecture |

## Task 5- Shapes in recreational settings 5.1 Identifying shapes in recreational settings

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated Shapes are in buildings and structures all around. You need to identify and name a range of 2D and 3D shapes that make up a space. Often the space will dictate the type of shapes you will see.

**Congruent** shapes are exactly the same shape and size, corresponding sides and angles are the same.

**Similar** shapes are the same shape but are a different size, corresponding sides are in the same ratio (not same length) and angles will be the same

**Worked example**

|  |
| --- |
| * Screen - Rectangle * Roof Support- Triangle * Centre Circle - Circle * Centre square - Square   **Congruent Shapes -** Triangle roof support structures.  **Similar Shapes -** Rectangular scoreboard and rectangular field advertisement. |

A group of people in a room

Description automatically generated**Teacher advice-** you can add in specific recreational settings that you want your students to analyse here.

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Name and circle a minimum of 10 objects in each setting which are 2D and 3D shapes. Then identify and label examples of congruent and similar shapes.

|  |
| --- |
| **Recreational** (Board games eg chess, sports courts, community recreational areas, gyms.)  A purple icon with check marks  Description automatically generated Add image of your recreational setting here. |
| List the shapes you can see in the photo that you have taken (2D and 3D shapes).             Identify and label examples of congruent and similar shapes: |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2: Scenario:** ‘You are about to redesign your living room. Before starting, you gather inspiration by researching and exploring various living room designs. You are focussed particularly on the different shapes and how each element fits within the space.’

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add image of your living room image here. |
| List the shapes you can see in the photo that you have taken (2D and 3D shapes).             Identify and label examples of congruent and similar shapes: |

## Task 5- Shapes in recreational settings 5.2 Identifying shapes in architecture

A black background with a black square

Description automatically generated with medium confidenceA group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Many shapes make up structural elements in buildings and architecture. Research some of the most common shapes that occur in structural elements. Select and find an example of one in your everyday life. **Example-** The Geelong Regional Library is a dome with an outer shell made of hexagons.

|  |
| --- |
| **Structural element:**      A purple icon with check marks  Description automatically generated Add image here.    Is this shape congruent or similar? Explain. |

A purple icon with check marks

Description automatically generated **Part 2:** Self-similarity can be found in architecture and nature where small pieces of the shape replicate the whole shape. Research and give examples found in nature of self similarity.

|  |
| --- |
| **Natural element:**      A purple icon with check marks  Description automatically generated Add image here.    Why do you consider this to be an example of self-similarity? Explain. |

## Task 5 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 5.1** | Identifying shapes in recreational settings. | Choose an item. |
| **Activity 5.2** | Identifying shapes in architectural settings | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 1 Describe and classify a range of different two-dimensional shapes and three-dimensional objects.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can describe and classify a range of 2D and 3D shapes and objects. | **Consolidating:** You have shown a basic understanding of classifying and describing 2D and 3D shapes and objects. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an understanding of classifying and describing 2D and 3D shapes and objects. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of describing and classifying a range of 2D and 3D shapes and objects. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 4 Use ideas of congruence and self-similarity.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you understand the ideas of congruence and self-similarity. | **Consolidating:** You have shown a basic understanding of congruence and self-similarity. To bump it up, check over your answers to see if they are correct. | **Achieving:** You have shown an understanding of congruence and self-similarity. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of congruence and self-similarity. All your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 6 Determine, name and describe patterns according to different properties of shapes such as those found in engineering, architecture and design, for example, bridges, buildings, and sculptures.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can determine, name and describe patterns according to different properties of shape. | **Consolidating:** You have shown a basic ability to determine, name and describe patterns according to different properties of shape. To bump it up, check over your answers to see if they are correct. | **Achieving:** You have shown an ability to determine, name and describe patterns according to different properties of shape. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of ability to determine, name and describe patterns according to different properties of shape.  All your answers are correct. Great work! |
| Teacher Comment: | | | | |

# **Numeracy Task 6 Shapes and area planning**

Numeracy Context: Recreational (f)

Area of Study (AoS): 2 Shape and 3 Quantity and measures

|  |
| --- |
| Key knowledge and key skills |
| **AoS 2 KS 2** undertake calculations and determine measurements of distance, perimeter, area, volume and capacity for routine, more complex two-dimensional shapes and three-dimensional objects including compound shapes, for example the use of pi in circular measurements.  **AoS 2 KS 4** use ideas of congruence and self-similarity.  **AoS 2 KS 5** Create compound two-dimensional shapes and three-dimensional objects and describe the relationship between these, including through the use of technology.  **AoS 3 KS 2** Undertake calculations and determine measurements of distance, perimeter, area, volume and capacity for routine, more complex two-dimensional shapes and three-dimensional objects including compound shapes, for example the use of pi in circular measurements. |

|  |
| --- |
| Task Checklist |
| Students will complete the following for Numeracy Context: Recreational (f)  Task 6- Activity 6.1 Outdoor festival space  Task 6- Activity 6.2 Sports and athletics hub  Task 6- Activity 6.3 Manipulating space |

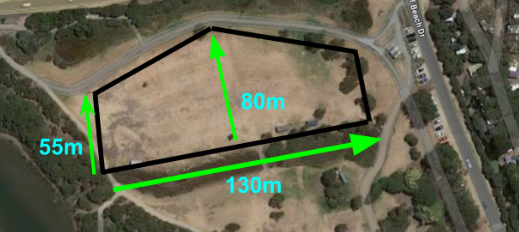
A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated In this task, you will need to navigate technology to create a floor plan containing 2D and 3D shapes. You will need to use an interactive website to create a two and three-dimensional space

## Task 6- Shapes and area planning Activity 6.1 Outdoor festival planning

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** You are the organiser of a popular outdoor summer festival and have been given this public space to use.

**Worked example**

|  |
| --- |
| **Outdoor Festival Space  (Smartdraw)** |

A group of people in a room

Description automatically generated A black background with a black square

Description automatically generated with medium confidence Create the festival space using one of these free interior decorating websites:  
<https://floorplanner.com/>

<https://www.smartdraw.com/>

<https://www.sketchup.com/>

|  |
| --- |
| **Scenario/Space:**    A purple icon with check marks  Description automatically generated Add image here.  A purple icon with check marks  Description automatically generated  Calculate the total area of the festival space. (The space is a composite shape so we must calculate the area of each of the shapes inside the space and then add them together for the total).  Area of a Rectangle Formula = L x W \_\_\_\_\_\_\_ X \_\_\_\_\_\_\_ =\_\_\_\_\_\_\_\_m2  Area of a Triangle Formula = ½ B x H \_\_\_\_\_\_\_X\_\_\_\_\_\_\_\_ =\_\_\_\_\_\_\_\_m2  Total area of festival space: \_\_\_\_\_\_\_\_\_\_\_\_\_\_m2  10% of this space needs to be left empty so people can move around freely. Calculate your space's total area and then available area by subtracting 10 percent:  Total Area of shape in m2:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  10% of the total area of shape which needs to be empty =\_\_\_\_\_\_\_\_  Total area available for adding furnishings=\_\_\_\_\_\_\_\_\_\_\_m2 |

## Task 6- Shapes and area planning Activity 6.2 Sports and athletics hub

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** You have been asked to design a sports and athletics hub in the space provided which anyone can use recreationally.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  Calculate the total area of the provided space. 10% of this total area needs to be left empty so people can move freely and safely around the sports hub.  Total area of space:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_m2. **Working out-**  10% (Total area x0.1) =\_\_\_\_\_\_\_\_\_\_m2.  **Working out-**  Total area available for sports and athletics fields=\_\_\_\_\_\_\_\_\_\_\_m2  **Working out-** |

## Task 6- Shapes and area planning Activity 6.3 Manipulating space

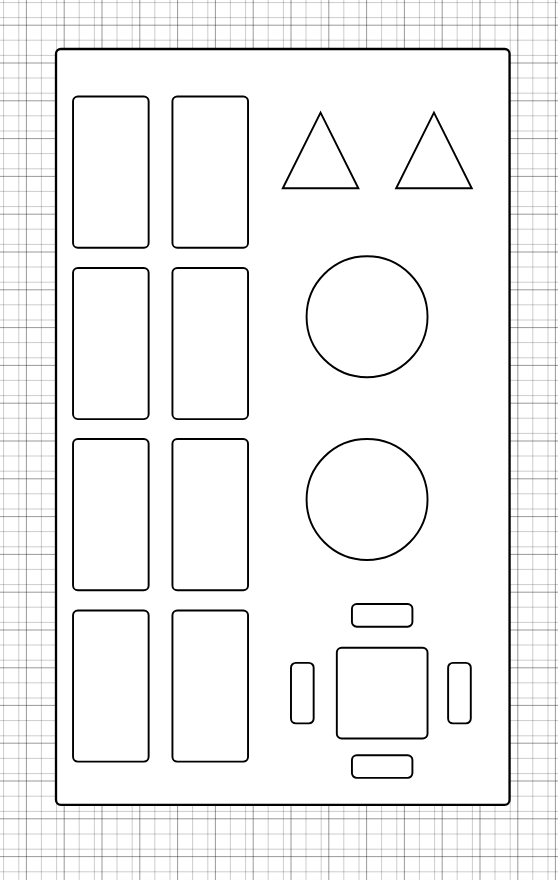
A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Using the interior decorating software create a sports hub that maximized the available space. Use the shapes below to fill in your space. You must use at least one of each shape. You do not need to worry about additing sports field details in just add the relevant shapes from the table below.

|  |  |
| --- | --- |
| Rectangular soccer fields  A football field with a black line  Description automatically generated W =50m  L = 100m    Triangular discuss field    B = 50m  H = 50m    Rectangular Tiered Stadium Seating  W=15m L= 40m | A black circle with a square in center  Description automatically generatedCircular cricket oval  Radius = 40m    A black and white square with many holes  Description automatically generatedSquare basketball and netball area  Side = 60m |



**Worked example**

A group of people in a room

Description automatically generated A black background with a black square

Description automatically generated with medium confidence Free interior decorating websites:  
<https://floorplanner.com/>

<https://www.smartdraw.com/>

<https://www.sketchup.com/>

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add your sketch here. |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2:** Complete the table below.

|  |
| --- |
| No. of Soccer fields used\_\_\_\_\_\_\_. Area of one rectangle \_\_\_\_\_\_\_\_\_\_\_\_\_\_  Total area of all Rectangles\_\_\_\_\_\_\_\_\_m2  **Working out:**  No. of Discuss fields used\_\_\_\_\_\_\_. Area of one triangle\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Total area of all Triangles\_\_\_\_\_\_\_\_\_m2  **Working out:**  No. of Basketball and Netball fields used\_\_\_\_\_\_\_. Total area of all Squares\_\_\_\_\_\_\_\_\_m2  **Working out:**    No. of Cricket pitches used\_\_\_\_\_\_\_. Area of one circle\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Total area of all Circles\_\_\_\_\_\_\_\_\_m2  **Working out:**  No. of Stadium seating used\_\_\_\_\_\_\_. Area of one circle\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Total area of all Circles\_\_\_\_\_\_\_\_\_m2  **Working out:**  Total amount of area used\_\_\_\_\_\_\_\_\_\_\_\_\_m2  of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_m2  Available Space.  **Working out:** |

## Task 6 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 6.1** | Outdoor festival space | Choose an item. |
| **Activity 6.2** | Sports and athletics hub | Choose an item. |
| **Activity 6.3** | Manipulating space | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 2 undertake calculations and determine measurements of distance, perimeter, area, volume and capacity for routine, more complex two-dimensional shapes and three-dimensional objects including compound shapes, for example the use of pi in circular measurements.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can calculate and determine measurements of distance, perimeter, area, volume and capacity. | **Consolidating:** You have shown a basic ability to calculate and determine measurements of distance, perimeter, area, volume and capacity.  To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to calculate and determine measurements of distance, perimeter, area, volume and capacity. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high ability to calculate and determine measurements of distance, perimeter, area, volume and capacity. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 4 Use ideas of congruence and self-similarity.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you understand the ideas of congruence and self-similarity. | **Consolidating:** You have shown a basic understanding of congruence and self-similarity. To bump it up, check over your answers to see if they are correct. | **Achieving:** You have shown an understanding of congruence and self-similarity. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of congruence and self-similarity. All your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 5 Create compound two-dimensional shapes and three-dimensional objects and describe the relationship between these, including through the use of technology.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to create a floor plan of a space using an interior decorating website. To bump it up, you need to complete all parts of the activity and show that you can create compound 2D and 3D shapes and objects in your space. | **Consolidating:** You have shown a basic ability to create a floor plan using compound 2D and 3D shapes and objects. To bump it up, add more details and make sure that all elements are labelled on your floor plan. | **Achieving:** You were able to create an accurate 2D and 3D representation of a floor plan and show various ways of manipulating space. To bump it up, add more information and label all elements of the floor plan. | **Excelling:** You were able to create an accurate 2D and 3D representation of a floor plan, identify different shapes within a space and show the ability to manipulate space in a variety of ways. Well done! |
| Teacher Comment: | | | | |

# **Numeracy Task 7 How far, how much and how big?**

Numeracy Context: Vocational (e)

Area of Study (AoS): 3 Quantity and measure

|  |
| --- |
| Key knowledge and key skills |
| **AoS 3 KS** 1 Estimate and measure objects and distances by using measurement tools with appropriate accuracy and tolerance.  **AoS 3 KS 2** Undertake calculations and determine measurements of distance, perimeter, area, volume and capacity for routine, more complex two-dimensional shapes and three-dimensional objects including compound shapes, for example, the use of pi in circular measurements. |

|  |
| --- |
| Task Checklist |
| Students will complete the following for Numeracy Context: Vocational (e)  Task 7 Activity 7.1 Collecting data  Task 7 Activity 7.2 Building dimensions estimates  Task 7 Activity 7.3 Measuring Lasertec tool  Task 7 Activity 7.4 Measuring using a measuring tape  Task 7 Activity 7.5 Perimeter and area  Task 7 Activity 7.6 Volume and capacity  Task 7 Activity 7.7 Compound shapes |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated At the end of this task, you will be able to estimate and measure distances using measurement tools and undertake a range of calculations to determine perimeter, area, volume and capacity. Your calculations will need to be applied to your Structured Work Placement business and/or other local businesses.

## Task 7- How far, how much and how big? Activity 7.1 Collecting data

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generatedA black background with a black square

Description automatically generated with medium confidence **Part 1:** Determine the distance and travel time from your home to your current SWL (Structured Workplace Learning) or workplace. Use a technology tool such as Google Maps, Strava, or a timer to find out the distance and the time it takes to get there (driving). Enter your data below.

|  |
| --- |
| **Destination**  **Distance (Km)**  **Time taken (Minutes)** |

A green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2:** What about these destinations if you are driving?

|  |
| --- |
| **Destination:** **MCG**  **Distance (Km)**  **Time Taken (Minutes)**  **Destination:** **Cumberland River**  **Distance (Km)**  **Time Taken (Minutes)** |

## Task 7- How far, how much and how big? Activity 7.2 Building dimension estimates

A purple icon with check marks

Description automatically generated **Part 1:** Estimating only, record your estimates for the following below.

**Worked example**

|  |
| --- |
| **School Canteen**  Length: 10m or 1000cm  Width: 5m or 500cm  Height (ceiling): 3m or 300cm |

1.The room you are currently working in.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  **Name of room:**  Length:  Width:  Height (ceiling): |

2.Local business/gym activity that you visit regularly.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  **Name of business:**  Length:  Width:  Height (ceiling): |

3.Your workplace or a place you would like to work.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  **Name of workplace:**  Length:  Width:  Height (ceiling): |

## Task 7- How far, how much and how big? Activity 7.3 Measuring using a Lasertec Tool (Laser measuring device)

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Rotate the lasertec tool through each gym activity, business and workplace visit so dimensions of all buildings are recorded. Add your recorded measurements in the tables below.

**1.The room you are currently working in.**

|  |
| --- |
| **Name of room:**  Length:  Width:  Height (ceiling):  A purple icon with check marks  Description automatically generated Add images of your space here. |

**2.Local business/gym activity that you visit regularly.**

|  |
| --- |
| **Name of business:**  Length:  Width:  Height (ceiling):  A purple icon with check marks  Description automatically generated Add images of your space here. |

**3.Your workplace or a place you would like to work.**

|  |
| --- |
| **Name of workplace:**  Length:  Width:  Height (ceiling):  A purple icon with check marks  Description automatically generated Add images of your space here. |

## Task 7- How far, how much and how big? 7.4 Measuring using a measuring tape

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1**: Measure the following items with a measuring tape.

1**.VCE VM fridge**

|  |
| --- |
| Length:  Width:  Height:  A purple icon with check marks  Description automatically generated Add images of your space here. |

**2.VCE VM door way**

|  |
| --- |
| Width:  Height:  A purple icon with check marks  Description automatically generated Add images of your space here. |

## Task 7- How far, how much and how big? 7.5 Perimeter and area

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Now you have some accurate measurements from Task 7 Activity 7.3 and 7.4 you will use those measurments to find the perimeter of following spaces below.

**Worked example**

|  |
| --- |
| Perimeter = distance around the outside of the shape/object    Table:  length 2m  width 1m  2m + 1m + 2m + 1m = 6m  The perimeter of the table is 6m |

1.Perimetre of the VCE VM door way

|  |
| --- |
| A purple icon with check marks  Description automatically generated  Working out: |

2.Perimetre of gym/local business you chose to measure.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  Name of place:  Working out: |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2:** Again using your accurate measurements use these to find the **area** of the following spaces below.

**Worked example**

|  |
| --- |
| Area =  the size of the surface within the shape/object    Table:  length 2m  width 1m  Area of rectangle = Length x Width  **2m x 1m = 2m2**  \*Remember the squared sign to show we are talking about the surface space of the table. |

1.Area of the VCE VM door way

|  |
| --- |
| A purple icon with check marks  Description automatically generated  Working out: |

2.Area of gym/local business you chose to measure.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  Name of place:  Working out: |

## Task 7- How far, how much and how big? 7.6 Volume and capacity

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Again, using your accurate measurements, use these to find the volume and capacity for the following below.

**Worked example**

|  |
| --- |
| Volume = the amount of space contained in a 3-dimensional shape/object  Capacity =  the amount of liquid, gas, solid that space could hold or contain  Milk carton in our fridge:  length 10cm  width 5cm  Height 20cm  Volume of cuboid = Length x Width x Height  10 x 5 x 20 = 1000cm3  \*Remember the cubed sign to show we are talking about the 3D space within the carton! |

1.Volume of the VCE VM fridge.

|  |
| --- |
| A purple icon with check marks  Description automatically generatedWorking out: |

2.Volume of the room you are currently working in (measurements from Task 7 Activity 7.2).

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

## Task 7- How far, how much and how big? 7.7 Compound shapes

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1: Challenge Problem**- Discuss with your teacher and choose a space that challenges you. Find the overall area measurement of the space. Then you will need to remove any compound shapes from the area.

Some examples could be:

* The surface area of the wall minus windows
* The surface area of available gym floor space minus gym equipment.
* The surface area of an open planned office- desk space only.

**Hint compound shapes**- Think rectangles, squares, circles, 2D and 3D.

|  |
| --- |
| **Working out:**  A purple icon with check marks  Description automatically generated Add images of your space here. |

## Task 7 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 7.1** | Collecting data | Choose an item. |
| **Activity 7.2** | Building dimension estimates | Choose an item. |
| **Activity 7.3** | Measuring using Lasertec Tool | Choose an item. |
| **Activity 7.4** | Measuring using a measuring tape | Choose an item. |
| **Activity 7.5** | Perimeter and area | Choose an item. |
| **Activity 7.6** | Volume and capacity | Choose an item. |
| **Activity 7.7** | Compound shapes | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 1 Estimate and measure objects and distances by using measurement tools with appropriate accuracy and tolerance.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can estimate and measure objects and distances. | **Consolidating:** You have shown a basic ability to estimate and measure objects and distances by using measurement tools. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to estimate and measure objects and distances by using measurement tools with appropriate accuracy and tolerance. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high ability to estimate and measure objects and distances by using measurement tools with appropriate accuracy and tolerance. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 2 undertake calculations and determine measurements of distance, perimeter, area, volume and capacity for routine, more complex two-dimensional shapes and three-dimensional objects including compound shapes, for example, the use of pi in circular measurements.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can calculate and determine measurements of distance, perimeter, area, volume and capacity. | **Consolidating:** You have shown a basic ability to calculate and determine measurements of distance, perimeter, area, volume and capacity.  To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to calculate and determine measurements of distance, perimeter, area, volume and capacity. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high ability to calculate and determine measurements of distance, perimeter, area, volume and capacity. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

# **Numeracy Task 8 How much is that?**

Numeracy Context: Health (d)

Area of Study (AoS): 3 Quantity and measures

|  |
| --- |
| Key knowledge and key skills |
| **AoS 2 KS 3** Convert between both metric and non-metric units where relevant such as cm/inch, Celsius/Fahrenheit, and grams/pounds  **AoS 2 KS 5** Read, interpret and calculate temperature measurements |

|  |
| --- |
| Task Checklist |
| Students will complete the following for Numeracy Context: Health (d)  Task 8- Activity 8.1 Collecting data  Task 8- Activity 8.2 Converting measurements (centimetres and inches)  Task 8- Activity 8.3 Converting measurements (kilograms and pounds)  Task 8- Activity 8.4 Converting measurements (celsius to fahrenheit) |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedIn this task, you will be able to convert different types of measurements. You will need to record a range of weights, distances and temperatures.

## Task 8- How much is that? 8.1 Collecting data

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generatedA black background with a black square

Description automatically generated with medium confidence **Part 1:** When walking to and of our VCE VM program activities or getting to your SWL (anywhere that you walk) use a piece of technology to find out the distance it is to your location and also how long it takes. Eg. Garmin Connect, Stravia, Google Maps, timer. Enter your data below.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  **Destination**  **Distance (Km)**  **Time Taken (Minutes)** |

A purple icon with check marks

Description automatically generatedA green outline of a person with a computer

Description automatically generated **Part 2:** Using the measurements you have just collected in part 1, use the appropriate formula to convert the measurements from metric to non-metric below. Make sure you show your working out.

**Worked example**

|  |
| --- |
| **Kilometres to miles**  1 km = 0.62 miles  Formula: number of km x 0.62 = number of miles  Working out: 1 x 0.62 = 0.62 miles |

**1.School to SWL / work placement**

|  |
| --- |
| A purple icon with check marks  Description automatically generated  \_\_\_km   = \_\_\_ Miles:  Formula: number of km x 0.62 = number of miles  Working out: |

**2.School to McDonald's**

|  |
| --- |
| A purple icon with check marks  Description automatically generated  2.4 km  = \_\_\_  Miles  Formula:  Working out: |

**3. School to Melbourne**

|  |
| --- |
| A purple icon with check marks  Description automatically generated  \_\_\_ km = \_\_\_  Miles  Formula:  Working out: |

**Worked example**

|  |
| --- |
| **Miles to kilometres**  1 mile = 1.609 km  Formula: Number of miles x 1.609 = number of kilometres  Working out: 1 x 1.609= 1.609km |

**4.Adelaide to Portland**

|  |
| --- |
| 334 Miles = \_\_\_\_ km  Formula:  Working out: |

## Task 8- How much is that? Activity 8.2 Converting measurements (centrimetres and inches)

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** **Converting Measurements (centimetres to inches)-** Use the appropriate formula to convert these measurements from metric to non-metric. Make sure you show your working out.

**Worked example**

|  |
| --- |
| **Centimetres to inches**  Centimeter: 1 = Inch: 0.39  1 cm = 0.39 inches  Formula: number of cm x 0.39 = number of inches  Working out: 1 x 0.39 = 0.39 inches |

1.Your height- cm to inches

|  |
| --- |
| A purple icon with check marks  Description automatically generated  \_\_\_ cm   = \_\_\_ inches:  Formula:  Working out: |

2.Spinal cord- usually approximately 45cm long.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  45 cm  = \_\_\_  Inches:  Formula:  Working out: |

A green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generatedA group of people with arrows

Description automatically generatedA black background with a black square

Description automatically generated with medium confidence **Part 2:** **Converting Measurements (inches to centimetres)-** Use the appropriate formula to convert these measurements from non-metric to metric. Make sure you show your working out on the tables below.

**Worked example**

|  |
| --- |
| **Inches to centimetres**  1 inch = 2.54cm  Formula: Number of inches x 2.54 = number of centimetres  Working out: 1 x 2.54= 2.54cm |

**1.Which TV?**

A hospital needs to purchase televisions for waiting areas and patients rooms. Think about the size of screens required for different purposes in the hospital.

Discuss and share your answer answer with a peer.

A purple icon with check marks

Description automatically generated  
Television screens are measured in inches. Find 3 different size TV screens from one retailer and fill out the table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Brand** | **Size in inches** | **Size in centimetres** | **Retailer** | **Cost** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

A purple icon with check marks

Description automatically generated2. Repeat the activity with a different retailer choosing the same brand and size of TV screens and fill out the table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Brand** | **Size in inches** | **Size in centimetres** | **Retailer** | **Cost** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

A purple icon with check marks

Description automatically generated3. Repeat the activity with a third retailer choosing the same brand and size of TV screens and fill out the table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Brand** | **Size in inches** | **Size in centimetres** | **Retailer** | **Cost** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

4.Choose which TV screen size and which retailer it is from, for the hospital waiting area. Explain your answer.

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

5.Choose which TV screen size and which retailer it is from, for the patient's rooms. Explain your answer.

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

## Task 8- How much is that? Activity 8.3 Converting measurements (kilograms and pounds)

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** **Converting Measurements (kilograms to pounds)-** Use the appropriate formula to convert these measurements from metric to non-metric. Make sure you show your working out.

**Worked example**

|  |
| --- |
| **Kilograms to pounds**  1 kg = 2.2 pounds  Formula: number of kg x 2.2 = number of pounds  Working out: 1 x 2.2 = 2.2 pounds |

1.10kg child to pounds

|  |
| --- |
| A purple icon with check marks  Description automatically generated  10kg   = \_\_\_ pounds  Formula:  Working out: |

2.50kg shipment of stock to pounds

|  |
| --- |
| A purple icon with check marks  Description automatically generated  50kg  = \_\_\_  pounds  Formula:  Working out: |

## Task 8- How much is that? Activity 8.4 Converting measurements (celsius to fahrenheit)

A purple icon with check marks

Description automatically generated **Part 1:** **Converting Measurements (celsius to Fahrenheit)-** Use the appropriate formula to convert these measurements from metric to non-metric. Make sure you show your working out.

**Worked example**

|  |
| --- |
| **Celsius to Fahrenheit**  Celsius: 1 = Fahrenheit: 33.8  1 degree celsius = 33.8 degrees fahrenheit  Formula: Celsius (c) x 33.8 (fahrenheit)  Number of degrees Celsius x 33.8 = number of degrees Fahrenheit  Working out: 1 x 33.8 = 33.8 fahrenheit) |

1.Normal Body temp of 37 degrees Celsius to Fahrenheit.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  Celsius: 37  = \_\_\_ fahrenheit:  Formula:  Working out: |

2. Today’s weather Temperature: celsius to Fahrenheit.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  Celsius: 37  = \_\_\_ fahrenheit:  Formula:  Working out: |

A black background with a black square

Description automatically generated with medium confidenceA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2:** Research the 7 day weather forecast for your location. Add the image of your 7 day weather forecast in the space below.

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add 7 day weather forecast here. |

A purple icon with check marks

Description automatically generated **Part 3: Read and interpret temperature measurements** - Use your weekly weather forecast from part 2 to answer the following prompts in the space below.

|  |
| --- |
| Weeks maximum temperature is:  Weeks minimum temperature is:  What is the temperature difference between the max and min:  What is the day time temperature range for the week:  Using your own weather app, what is the max temp for today (included ate):  What is the boiling point temperature of water:  What is the freezing point temperature of water: |

## Task 8 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 8.1** | Collect data | Choose an item. |
| **Activity 8.2** | Converting measurements (centimetres and inches) | Choose an item. |
| **Activity 8.3** | Converting measurements (kilograms and pounds) | Choose an item. |
| **Activity 8.4** | Converting measurements (Celsius to fahrenheit) | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 3 Convert between both metric and non-metric units where relevant such as cm/inch, Celsius/Fahrenheit, and grams/pounds.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can convert between both metric and non-metric units. | **Consolidating:** You have shown a basic ability to convert between both metric and non-metric units. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to convert between both metric and non-metric units. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high ability to convert between both metric and non-metric units. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 5 Read, interpret and calculate temperature measurements.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can read, interpret and calculate temperature measurements. | **Consolidating:** You have shown a basic ability to read, interpret and calculate temperature measurements.  You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to read, interpret and calculate temperature measurements. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high ability to read, interpret and calculate temperature measurements. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

# **Numeracy Task 9 Life logbook**

Numeracy Context: Health (d)

Area of Study (AoS): 3 Quantity and measures

|  |
| --- |
| Key knowledge and key skills |
| AoS 3 KS 6 performs calculations using multiple units of time, calculate time durations, including the use of calendar months, weeks, days, as well as hours, minutes, and seconds. |

|  |
| --- |
| Task Checklist |
| Students will complete the following for Numeracy Context: Health (d)  Task 9- Activity 9.1 What activities do I do?  Task 9- Activity 9.2 Monthly planner |

A green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated In this task you will need to use technology to calculate time durations in a calendar month. You will create a month long ‘life logbook’ to identify time spent on a range of activities with a focus on creating a healthy work life balance.

## Task 9- Life logbook Activity 9.1 What activities do I do?

**Scenario:** You are an entrepreneur and starting your own business. You are in the start-up phase, but you recognise work-life balance to be important. You want to make a plan so that you can put maximum time and effort into the business but also have time for the other things that are important to you.

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1: What do I need to consider?** To maintain a healthy balance between work and life, it is important to schedule your hobbies, things to maintain your health and well-being, socialising, family commitments, sports etc. Other than work, make a list of things that are important for you to maintain within your schedule.

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add your list here. |

A green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2: Approximate -** How much time do I need to allocate to different aspects of my life in the table below? As a start-up business, you have decided to allocate 40 hours per week for work.

|  |
| --- |
| **Health, wellbeing and mindfulness**  **Sport and Recreation**  **Social Activities**  **Family**  **Hobbies**  **Other** |

A purple icon with check marks

Description automatically generated **Part 3: Plan-** How does this look in a week? Create your ideal weekly planner in the template below. Remember to include 40 hours of work. You can allocate this wherever and however you want.

Make sure you consider the following and add them to the calendar.

Work

Health / Wellbeing / Mindfulness

Sport / Fitness & Recreation

Social Activities

Family

Hobbies

Appointments

Birthdays

Lunch breaks

Breaks - including movement breaks

Other

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Times** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** | **Sunday** |
| **5-6am** |  |  |  |  |  |  |  |
| **6-7am** |  |  |  |  |  |  |  |
| **7-8am** |  |  |  |  |  |  |  |
| **8-9am** |  |  |  |  |  |  |  |
| **9-10am** |  |  |  |  |  |  |  |
| **10-11am** |  |  |  |  |  |  |  |
| **11-12pm** |  |  |  |  |  |  |  |
| **12-1pm** |  |  |  |  |  |  |  |
| **1-2pm** |  |  |  |  |  |  |  |
| **2-3pm** |  |  |  |  |  |  |  |
| **3-4pm** |  |  |  |  |  |  |  |
| **4-5pm** |  |  |  |  |  |  |  |
| **5-6pm** |  |  |  |  |  |  |  |
| **6-7pm** |  |  |  |  |  |  |  |
| **7-8pm** |  |  |  |  |  |  |  |
| **8-9pm** |  |  |  |  |  |  |  |
| **9-10pm** |  |  |  |  |  |  |  |
| **10-11pm** |  |  |  |  |  |  |  |
| **11-12am** |  |  |  |  |  |  |  |

A purple icon with check marks

Description automatically generated **Part 4: Organise a visual representation-** Colour coding can be an easy way to help visualise your schedule. On the schedule above in part 3, colour code each of the different activities in different colours.

Each activity has been colour-coded in the schedule above.

A purple icon with check marks

Description automatically generated **Part 5: Reflection -** Have a look at your schedule, are you happy with how you have allocated your time? If you think adjustments could be made, please make these adjustments then response to the questions below.

1.Did you require to make any adjustments to your schedule? If yes, explain what adjustments you made.

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

2.Justify why you have made the choices to your schedule that you did. Explain at least 3 of your choices. **Hint-**This could include why you have allocated the specific hours you have to each activity, what times you have allocated to each of the activities, breaks etc.

|  |
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| A purple icon with check marks  Description automatically generated |

## Task 9- Life logbook Activity 9.2 Monthly planner

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generatedA black background with a black square

Description automatically generated with medium confidence **Part 1:** Create a monthly planner**.** Use the weekly schedule that you have created and plan out your month. You can research examples online and you can find monthly templates on [Canva](https://www.canva.com/p/templates/EAFsFDQdFvY-white-minimalist-monthly-planner-october-2024-calendar/).

|  |
| --- |
| A purple icon with check marks  Description automatically generated Add your completed monthly planner here. |

A purple icon with check marks

Description automatically generated **Part 2:** Complete the problem solving questions below.

1.How many days is fitness/sport/gym scheduled within the month?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

2.Apart from work, which event/category took up the most time over your month? How many hours?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

3. There are 168 hours in a week, break down an estimate of how your 168 hours were spent below - Work, sleep, gym socialising etc

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

## Task 9 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 9.1** | What activities do I do? | Choose an item. |
| **Activity 9.2** | Monthly planner | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 6 Performs calculations using multiple units of time, calculate time durations, including the use of calendar months, weeks, days, as well as hours, minutes, and seconds.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can perform calculations using multiple units of time, and calculate time durations. | **Consolidating:** You have shown a basic ability to perform calculations using multiple units of time and calculate time durations.  You have shown some working out. To bump it up, check over your answers and see if you can include more information in each of your answers. | **Achieving:** You have shown an ability to perform calculations using multiple units of time and calculate time durations. You have used technology to log a range of life events and calculate the time spent on each. You have presented this information successfully. | **Excelling:** You have shown a high ability to perform calculations using multiple units of time and calculate time durations. You have confidently used technology to build a detailed life logbook. Well done! |
| Teacher Comment: | | | | |

# **Numeracy Task 10 What’s the time?**

Numeracy Context: Vocational (e)

Area of Study (AoS): 3 Quantity and measures

|  |
| --- |
| Key knowledge and key skills |
| **AoS 2 KS 4** Read and interpret units of analogue and digital time including 24-hour time and time zones  **AoS 2 KS 6** Perform calculations using multiple units of time, including time zones, and calculate time durations, including the use of calendar months, weeks, days, as well as hours, minutes, and seconds |

|  |
| --- |
| Task Checklist |
| Task 10- Activity 10.1 12 hour and 24 hours conversion  Task 10- Activity 10.2 Time and timetables  Task 10- Activity 10.3 Time zones  Task 10- Activity 10.4 Gym session bookings |

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated In this task, you will interpret analogue and digital time to solve a range of everyday problems. You will perform a range of time-related calculations including calendars, time zones and duration of activities. You will need to apply your knowledge and skills to a range of problems, such as reading time, converting time, timetables, and time zones.

## Task 10- What’s the time? 10.1 12 hour and 24 hour conversion

A green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Complete the 12 hour and 24 hour conversion table below.

|  |  |  |
| --- | --- | --- |
| **Written times** | **12 hour** | **24 hours** |
| **Example**: Midday | 12pm | 12.00 |
| Twenty past two in the afternoon. |  |  |
| Twenty-five to eleven at night. |  |  |
| Quarter past 6 in the morning. |  |  |
| Quarter to nine in the evening. |  |  |
| Five to one in the afternoon. |  |  |
| The time you start your VET program. |  |  |
| The time you start your structured work placement. |  |  |
| The time you participate in a physical movement activity. |  |  |

A purple icon with check marks

Description automatically generated **Part 2: Converting from 24-hour time-**Write each of these 24-hour times as 12-hour time in the table below.

**Worked example**

|  |
| --- |
| 17.30 is 5.30 pm  17.30 - 12.00 (hours) = 5.30 |

|  |  |
| --- | --- |
| **24 hour time** | **12 hour time** |
| **Example:** 0700 | 7.00am |
| 12.40 |  |
| 19.20 |  |
| 00.10 |  |
| 16.50 |  |
| 22.00 |  |
| 13.56 |  |

## Task 10- What’s the time? 10.2 Time and timetables

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Use the V-line train timetable below to find the following information below.

A screenshot of a train schedule

Description automatically generated

|  |
| --- |
| A purple icon with check marks  Description automatically generated  If you get on the 2.10 pm from Waurn Ponds, what time do you get to Southern Cross?    How much quicker is the 2.16 pm ‘express’ train from Waurn Ponds to Southern Cross?  How many trains are there so you can depart at Corio?    Which train will get you to Southern Cross as close to 6 p.m. as possible?    If you have an appointment on Southbank near the Crown Casino at 5 pm what train and time would you select to ensure you were there on time? Explain. |

## Task 10- What’s the time? 10.3 Time zones

**Video link:** <https://youtu.be/X1DkiuaFCuA?si=Pl6DMiUrN3yUIO6e>

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Description automatically generated with medium confidenceA group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Watch the 4 minute youtube video on time zones and answer the following questions in the table below. See video link here [Understanding Time Zones](https://www.youtube.com/watch?v=X1DkiuaFCuA).

1.Why was there a need for standardised time?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

2.Why was the city of Greenwich selected as in 1884?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

3.What does GMT stand for?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

4.How many time zones are there?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

5.Why is each time zone counted every 15 degrees longitude?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

6.What is the International date line?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

7.How many time zones does Australia have?

|  |
| --- |
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**A black background with a black square

Description automatically generated with medium confidenceA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated Part 2:Time Zone problems-** Using the time zone calculator linked figure out the following time zone problems below. Remember to add the city-date and time and then add Melbourne as the next city.

A black background with a black square

Description automatically generated with medium confidence[**Time Zone Converter**](https://www.timeanddate.com/worldclock/converter.html?iso=20200423T020000&p1=64&p2=152)

**Problem 1:** Emily runs a company and needs to attend a Zoom meeting with Tom who lives in Chicago. The meeting starts at 7 pm on Thursday Chicago time, what day/time (in Melbourne) will Emily be meeting with Tom via Zoom?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

**Problem 2:** Luci lives in Melbourne and has a business seminar via the Internet she needs to watch. The business seminar is taking place in London at 6 pm, what day/time would this be for Luci in Melbourne?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

**Problem 3:** You have a work conference call with the Tokyo office at 4 pm (Tokyo time). What time will you call in from your home in Victoria?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

**Problem 4:** You have a direct flight to London from Perth, Australia. The flight leaves Perth on July 15 at 10pm and takes 18 hours to get there. What date and time will your flight arrive in London?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

**Problem 5:** Paulo flies from Santiago, Chile to Sydney. He leaves on February 10 at 2:30pm and his flight takes 14.5 hours. What date and time will he get to Sydney?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

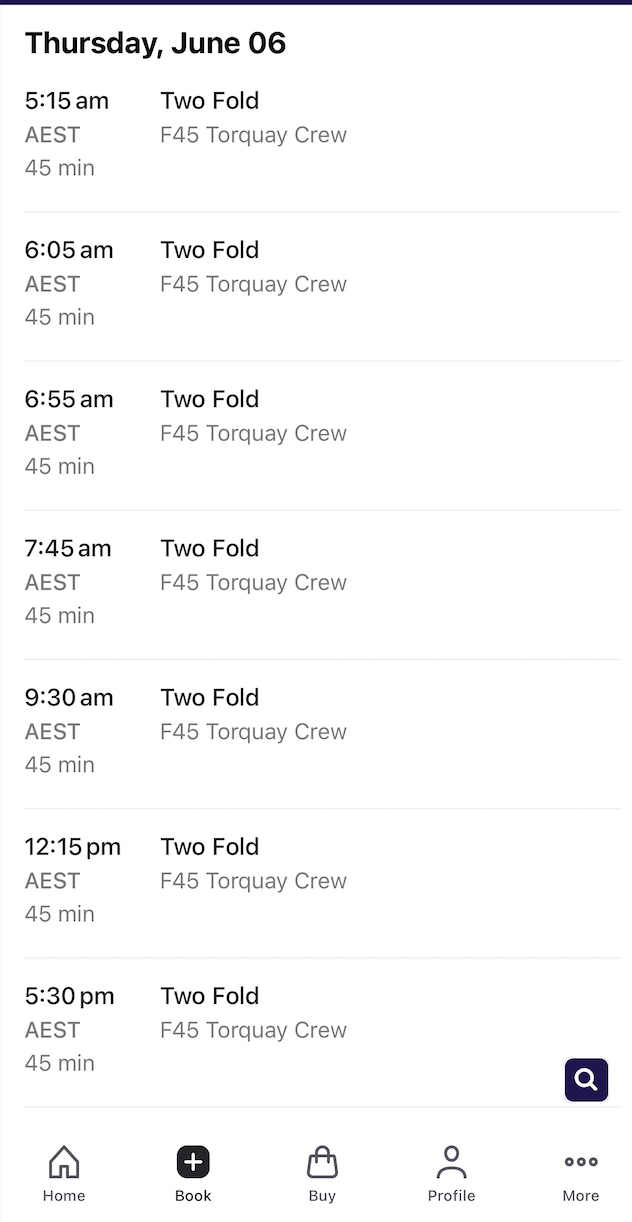
## Task 10- What’s the time? 10.4 Gym session bookings

A group of people in a room

Description automatically generatedA green outline of a person with a computer

Description automatically generatedA purple icon with check marks

Description automatically generated **Part 1:** Read over the booking information in the image and respond to the following questions below.

****

1.What time is the first F45 Session of the day?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

2.What time is the last session of the day?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

3.Which sessions(times) could you book if you have to be at work at 9 am and don’t finish work until 6 pm?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

4. If you completed the 5.15 am session before work and the 5.30 pm session after work, how much recovery time do you have in between?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

## Task 10 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 10.1** | 12 hour to 24 hour time conversion | Choose an item. |
| **Activity 10.2** | Time and time tables | Choose an item. |
| **Activity 10.3** | Time zones | Choose an item. |
| **Activity 10.4** | Gym session bookings | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 4 Read and interpret units of analogue and digital time including 24-hour time and time zones.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can read and interpret units of analogue and digital time. | **Consolidating:** You have shown a basic ability to read and interpret units of analogue and digital time. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to read and interpret units of analogue and digital time. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high ability to read and interpret units of analogue and digital time. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AoS 2 KS 6 Perform calculations using multiple units of time, including time zones, and calculate time durations, including the use of calendar months, weeks, days, as well as hours, minutes, and seconds.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can perform calculations using multiple units of time, and calculate time durations. | **Consolidating:** You have shown a basic ability to perform calculations using multiple units of time and calculate time durations.  You have shown some working out. To bump it up, check over your answers and see if you can include more information in each of your answers. | **Achieving:** You have shown an ability to perform calculations using multiple units of time and calculate time durations.  To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high ability to perform calculations using multiple units of time and calculate time durations. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

# **Numeracy Task 11 Human resources (HR) wages**

Numeracy Context: Vocational (e)

Area of Study (AoS): 4 Relationships

|  |
| --- |
| Key knowledge and key skills |
| **AoS 4 KS 1** Use and apply rates to solve problems such as $/m3, L/hr, wages/hr  **AoS 4 KS 2** Use and apply formulas to solve real-life problems  **AoS 4 KS 3** Describe relationships between variables and explain their significance in relationship to the applied context  **AoS 4 KS 4** Develop and represent relationships with mathematical expressions, or graphical or tabular representations  **AoS 4 KS 5** Use and apply relevant ratios and proportions to solve problems such as scales on maps and plans, in the mixing of chemicals or ingredients, or calculating magnification factors. |

|  |
| --- |
| Task Checklist |
| Task 11- Activity 11.1 Collecting data and performing calculations  Task 11- Activity 11.2 Covering costs |

A group of people in a room

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Description automatically generated In this task, you will calculate how much adding an employee to a business may cost. You will need to find out the hourly pay rate of an employee at your structured workplace learning (SWL). You will then perform a number of different calculations to find out how much these employees will cost over a week, month and year. You will then calculate how many more members you will need to cover the cost of these new employees.

## Task 11- HR wages 11.1 Collecting data and performing calculations

A group of people in a room

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Description automatically generated **Part 1:** When you are at your structured workplace learning placement you will need to speak to your manager/boss to find out the hourly pay rate. Enter your data in the space below.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  Structured Workplace Learning business name-  Employee Hourly Rate- $ |

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Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2: Performing Calculations-** Using the information you have just collected you will need to work out how much money will be required to pay **three new staff members** to the business. Please read the case studies below and find the key information in the descriptions.

**Employee Number 1- Scott**

Scott is a very enthusiastic worker and extremely knowledgeable in the industry, he has just completed his Diploma. He has gained full-time employment at the business. Scott has negotiated a full-time position with weekends off and four weeks of paid holidays each year (full pay). He is happy to work the standard 38 hour working week.

|  |  |
| --- | --- |
| **Scott- key information** | |
| **Hourly rate (see part 1)** |  |
| **Hours worked per day** |  |
| **Days worked per week** |  |
| **Weeks worked per year** |  |

Answer the questions using Scott key information and show your working out in the tables below.

1.How much money does Scott earn in a week?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

2.How much money does Scott earn in a month?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

3.How much money does Scott earn in a year?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

**Employee Number 2- Olivia**

Olivia is an experienced professional who has recently returned from travelling overseas. Olivia cannot commit to full-time work as she also runs a successful dog-sitting business specialising in large breeds. Olivia can’t work weekends or Mondays and Fridays as they are the busiest days for her dog-sitting business. Olivia is working a 7.6 hour day and is happy with two weeks of unpaid holidays per year.

|  |  |
| --- | --- |
| **Olivia- key information** | |
| **Hourly rate (see part 1)** |  |
| **Hours worked per day** |  |
| **Days worked per week** |  |
| **Weeks worked per year** |  |

Answer the questions using Olivias key information and show your working out in the tables below.

1.How much money does Olivia earn in a week?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

2.How much money does Olivia earn in a month?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

3.How much money does Olivia earn in a year?

|  |
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| A purple icon with check marks  Description automatically generated |

**Employee Number 3- Thomas**

Thomas is in Year 12 and is interested in working in the industry. He can not work during the week as he is currently completing his VCE Vocational Major studies at his local secondary school. Thomas has committed to working weekends for the year, but needs two weekends off unpaid, to attend schoolies in late November. Thomas is happy to work eight-hour days and has negotiated an extra 10% per hour in penalty rates compared to the other employees.

|  |  |
| --- | --- |
| **Thomas- key information** | |
| **Hourly rate (see part 1)** |  |
| **Hours worked per day** |  |
| **Days worked per week** |  |
| **Weeks worked per year** |  |

Answer the questions using Thomas’s key information and show your working out in the tables below.

1.How much money does Thomas earn in a week?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

2.How much money does Thomas earn in a month?

|  |
| --- |
| A purple icon with check marks  Description automatically generated |

3.How much money does Thomas earn in a year?

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Description automatically generated **Part 3: Yearly Wages-** Fill out the table below showing the yearly wages for each of the new employees.

|  |  |
| --- | --- |
| **Employee name** | **Yearly wage ($)** |
| **Scott** | $ |
| **Olivia** | $ |
| **Thomas** | $ |

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Description automatically generated **Part 4:** How much do all three employees cost the business in wages for the year?

|  |
| --- |
| **Working out:** |

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Description automatically generated **Part 5:** What is the total cost of hiring 3 new employees for the year?

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## Task 11- HR wages 11.2 Covering costs

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Description automatically generatedNow we know how much the employees cost the business in wages for the year, we need to cover this cost to ensure the business is successful.

There are many ways in which a business can make money. Businesses can…

* **Provide a Service**

Example: A cleaning company offers home cleaning services for a fee.

* **Sell a Product**

Example: An online store sells handmade jewellery to customers.

* **Charge a membership**

Example: A streaming platform charges users a monthly fee for access to its content.

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Description automatically generated **Part 1:** Explain how your SWL business makes money, give one example and the cost of the service/product/membership in the space beklow.

**Worked example**

|  |
| --- |
| My business makes money by servicing cars.  A car service would cost $300 |

|  |
| --- |
| A purple icon with check marks  Description automatically generated  My business makes money by …  How many extra services/products/memberships will your business have to provide/sell to cover the cost of the new employees? Show your working out below.  My Business will need to provide/sell (add amount here) to cover the cost of the new employees. |

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Description automatically generatedA purple icon with check marks

Description automatically generated **Part 2:** Knowing how to calculate wages per hour, week, month, and year is an important skill to learn for both the employer and the employee. List what benefits this skill has for the employer and employee in the space below.

|  |
| --- |
| A purple icon with check marks  Description automatically generated  **Employer-**  **Employee-** |

## Task 11 - Feedback and Assessment

|  |  |  |
| --- | --- | --- |
| **Peer Feedback** | | |
| **Activity 11.1** | Collecting data and performing calculations | Choose an item. |
| **Activity 11.2** | Covering costs | Choose an item. |
| **Peer Comment:**  **Name of Peer:** | | |

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| --- | --- | --- | --- | --- |
| AoS 4 KS 1 Use and apply rates to solve problems such as $/m3, L/hr, wages/hr.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can use and apply rates to solve problems. | **Consolidating:** You have shown a basic understanding of using and applying rates to solve problems. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an understanding of using and applying rates to solve problems. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of using and applying rates to solve problems. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

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| --- | --- | --- | --- | --- |
| AoS 4 KS 2 Use and apply formulas to solve real-life problems.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can use and apply formulas to solve real-life problems. | **Consolidating:** You have shown a basic understanding of using and applying formulas to solve real-life problems. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an understanding of using and applying formulas to solve real-life problems. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level of understanding of using and applying formulas to solve a range of problems. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

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| AoS 4 KS 3 Describe relationships between variables and explain their significance in relationship to the applied context.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can describe relationships between variables. | **Consolidating:** You have shown a basic ability to describe relationships between variables and explain their significance in an applied context. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to describe relationships between variables and explain their significance in an applied context. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level ability to describe relationships between variables and explain their significance in an applied context. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

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| AoS 4 KS 4 Develop and represent relationships with mathematical expressions, or graphical or tabular representation.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can develop and represent relationships. | **Consolidating:** You have shown a basic ability to develop and represent relationships. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to develop and represent relationships. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level ability to develop and represent relationships. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |

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| AoS 4 KS 5 Use and apply relevant ratios and proportions to solve problems such as scales on maps and plans, in the mixing of chemicals or ingredients, or calculating magnification factors.  Student Reflection - How well did you go with this step? (Please check the box below) | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| Student Comment (Optional): | | | | |
| **Teacher Feedback** | | | | |
| Not Submitted | Beginning | Consolidating | Achieving | Excelling |
| **Not Submitted:** No work has been submitted or attempted for this outcome. | **Beginning**: You have attempted to answer some of the questions. To bump it up, you need to complete all parts of the activity and show that you can use and apply relevant ratios and proportions to solve problems. | **Consolidating:** You have shown a basic ability to use and apply relevant ratios and proportions to solve problems. You have shown some working out. To bump it up, check over your answers to see if they are correct and include more details of your working out. | **Achieving:** You have shown an ability to use and apply relevant ratios and proportions to solve problems. You have shown your workings. To bump it up, recheck your answers to make sure your answers are all correct. | **Excelling:** You have shown a high level ability to use and apply relevant ratios and proportions to solve problems. You have shown all your workings out and all your answers are correct. Great work! |
| Teacher Comment: | | | | |