# Mapping the Fractions and Decimals Online Interview to the Victorian Curriculum F-10: Mathematics Version 2.0

# Overview

### This table links the tasks from the Fractions and Decimals Online Interview to the *Victorian Curriculum F-10: Mathematics Version 2.0.*

*Each task and its overarching idea from the Fractions and Decimals Online Interview (FDOI) have been linked to the Victorian Curriculum (VC) F-10: Mathematics Version 2.0* and provide the best match to the Level, Strand, VC Code, Content Description and Elaboration. The extent of this match is also provided.

Interpreting the table:

* ‘Task description’ outlines each question in the FDOI
* ‘Overarching ideas’ outlines each mathematical concept achieved by a student upon answering each question correctly. The overarching ideas are categorised into F = Fractions, D = Decimals, and CP = Contextual Problems. To understand how the ‘Overarching Ideas’ are assigned, refer to: [*Overarching Ideas and Misconceptions*](https://www.education.vic.gov.au/Documents/school/teachers/teachingresources/discipline/maths/continuum/FDOI-overarching-ideas-misconceptions.docx)
* ‘Extent of content match’ outlines the degree of a match to the *Victorian Curriculum F-10: Mathematics Version 2.0* Content Descriptions and/or Elaborations
* Bolded words indicate the parts of the content description and elaborations which are most relevant to the task
* Note that this document reflects updates to the FDOI to come into effect from January 2025 e.g. ‘Rates and Proportions’ section renamed as ‘Contextual Problems’.

Further details on the *Victorian Curriculum F-10: Mathematics Version 2.0* can be accessed from the Victorian Curriculum and Assessment Authority website at: [Mathematics - Victorian Curriculum F–10 (vcaa.vic.edu.au)](https://f10.vcaa.vic.edu.au/learning-areas/mathematics/introduction)

| **FRACTIONS AND DECIMALS ONLINE INTERVIEW** | **VICTORIAN CURRICLUM F-10: MATHEMATICS VERSION 2.0**  |
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| **Item No.** | **Task Description** | **Overarching ideas** | **Level** | **Strand**  | **VC 2.0 Code**  | **Content Description** | **Elaborations** | **Extent of content match** |
| **1** | **Fraction Pie** |
| **1a**  | What fraction of the circle is part B?  | F1. Understands that fractions are equal shares, with careful attention to the whole | 2 | Number  | VC2M2N03 | Recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halving | Dividing a shape into equal parts and relating the number of parts to the unit fraction; for example, if there are 4 equal parts then each part is one-quarter and if there are 8 equal parts then each is one-eight | Partial match - the circle is divided into **unequal parts,** so only a **partial match** to content description |
| **1b** | What fraction of the circle is part D? | F1. Understands that fractions are equal shares, with careful attention to the whole | 3 | Number | VC2M3N03  | Recognise and represent unit fractions including, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$ and their multiples in different ways; combine fractions with the same denominator to complete the whole | Recognising that unit fractions represent equal parts of a whole; for example, one-third is one of 3 equal parts of a whole | Partial match - the circle is divided into **unequal parts**, so only a **partial match** to content description |
| **2** | **Pattern Blocks** |
| **2a & 2b** | a. How many blues cover the yellow?b. Blue is what fraction of yellow? | F2. Can determine the part when given the whole | 3 | Number | VC2M3N03  | Recognise and represent unit fractions including, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$ and their multiples in different ways; combine fractions with the same denominator to complete the whole | Recognising that unit fractions represent equal parts of a whole; for example, one-third is one of 3 equal parts of a whole | Good match - when both tasks are considered together |
| **2c, 2d & 2e** | c/d. How many blues cover the red?e. Blue is what fraction of the red? | F3. Understands that the whole can change within a given task and adjusts thinking accordingly | 5  | Number  | VC2M5N03 | Compare and order common unit fractions with the same and related denominators, **including mixed numerals**, applying knowledge of factors and multiples; represent these fractions on a number line | Using pattern blocks to represent equivalent fractions; **selecting one block or a combination of blocks to represent one whole** and making a design with shapes; and recording the fractions to justify the total | Good match  |
| **2f & 2g** | f. If the yellow is one, what is blue?g. If blue is one, what is red? | F4. Can determine the size of a shape in relation to the whole, when the shape is greater than the whole  | 5 | Number  | VC2M5N03 | Compare and order common unit fractions with the same and related denominators, **including mixed numerals**, applying knowledge of factors and multiples; represent these fractions on a number line | Using pattern blocks to represent equivalent fractions; **selecting one block or a combination of blocks to represent one whole** and making a design with shapes; and recording the fractions to justify the total | Good match  |
| **3** | **Dots Array** |
| **3a & 3b** | a. What fraction of the dots is black?b. Another name? | F5. Can name a fraction of a collection in a discrete situationF6. Recognises two equivalent fractions in a discrete situation | 4 | Number  | VC2M4N03 | Find equivalent representations of fractions using related denominators and make connections between fractions and decimal notation | Extending fraction families within collections of materials, for example, by seeing $\frac{3}{4}$ as 3 in each 4, showing this within related fractions like $\frac{6}{8}$ or seeing that $\frac{2}{5}$ means 2 in each 5 so it can be shown within $\frac{4}{10}$ | Good match |
| **4** | **Simple Operators** |
| **4a** | $\frac{1}{2}$ of 6 | F7. Can mentally partition a number and identify the resultant part of the action involving a fraction and a whole number | 2 | Number  | VC2M2N03  | Recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halving | **Comparing half of a collection** of 10 counters with half of a shape or object and explaining how each shows one-half of the respective whole | Good match |
| **4b** | $\frac{1}{5}$ of 10 | F7. Can mentally partition a number and identify the resultant part of the action involving a fraction and a whole number | 4 | Number  | VC2M4N03  | Find equivalent representations of fractions using related denominators and make connections between fractions and decimal notation | Using array diagrams to show the relationship between fractions and division and multiplication of natural numbers, for example, 3 × 4 = 12, 12 ÷ 4 = 3,$\frac{1}{4}$ **of 12 is 3,** $\frac{1}{3}$ **of 12 is 4** | Good match |
| **4c** | c. $\frac{2}{3}$ of 9 | F7. Can mentally partition a number and identify the resultant part of the action involving a fraction and a whole number | 6 | Number  | VC2M6N07 | Solve problems that require finding a familiar fraction, decimal or percentage of a quantity, including percentage discounts, choosing efficient calculation strategies with and without digital tools | Explaining how $\frac{1}{3}$ of a quantity can be achieved by dividing by 3, and how **knowledge of** $\frac{1}{3}$ **of a quantity can be used** **to find** $\frac{2}{3}$ **or** $\frac{4}{3}$ **of the same quantity,** using situations involving money, length, duration, mass or capacity | Good match |
| **4d & 4e** | d. $\frac{1}{3}$ of $\frac{1}{2}$e. $\frac{1}{2}$ of $\frac{1}{3}$ | F8. Can mentally partition a number and identify the resultant part of the action in problems involving two fractions | 6 | Number  | VC2M6N07 | Solve problems that require **finding a familiar fraction,** decimal or percentage **of a quantity,** including percentage discounts, choosing efficient calculation strategies with and without digital tools | **Explaining how** $\frac{1}{3}$ **of a quantity can be achieved by dividing by 3**, and how knowledge of $\frac{1}{3}$ of a quantity can be used to find $\frac{2}{3} $or $\frac{4}{3} $of the same quantity, using situations involving money, length, duration, mass or capacity | Partial match - the task requires naming a fraction of a fraction, so it is only a partial match |
| **5** | **Fractions on a number line** |
| **5a, 5b, & 5c** | a. Put $\frac{2}{3}$ on a number lineb. Put $\frac{6}{3}$ on a number linec. Put $\frac{11}{6}$ on a number line | F9. Can correctly locate a proper fraction on a number line F10. Can correctly locate fractions (proper and improper) on a number line | 4 | Number  | VC2M4N04 | Count by multiples of quarters, halves and thirds, including mixed numerals; **locate and represent** **these fractions as numbers on number lines** | Converting mixed numerals into improper fractions and vice versa, and representing mixed numerals on a number line | Good match  |
| **6** | **Pizza**  |
| **6**  | How much pizza does each friend get? | F11. Has an appropriate strategy for a sharing-type situation | 3 | Number | VC2M3N03 | Recognise and represent unit fractions including, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$ and their multiples in different ways; combine fractions with the same denominator to complete the whole | Sharing collections of objects, such as icy pole sticks or counters, between 3, 4 and 5 people and **connecting division with fractions**; for example, sharing equally between 3 people gives $\frac{1}{3}$ of the collection to each and sharing equally between 5 people gives $\frac{1}{5}$ of the collection to each | Partial match - the task involves sharing more than one whole object, rather than a collection of objects, between multiple people |
| **7** | **Draw Me a Whole** |
| **7a & 7b** | a. If this is $\frac{2}{3}$ draw the wholeb. If this is $\frac{4}{3}$ draw the whole | F12. Can determine the whole when given a part which is less than oneF13. Can determine the whole when given a part (including parts greater than one) | 6 | Number | VC2M6N07 | Solve problems that require finding a familiar fraction, decimal or percentage of a quantity, including percentage discounts, choosing efficient calculation strategies with and without digital tools | Explaining how $\frac{1}{3}$ of a quantity can be achieved by dividing by 3, and how **knowledge of** $\frac{1}{3}$ **of a quantity can be used to find** $\frac{2}{3} $**or** $\frac{4}{3} $**of the same quantity**, using situations involving money, length, duration, mass or capacity | Good match |
| **8** | **Construct a Sum** |
| **8a, 8b, & 8c** | Form two fractions that when added are close to one | F14. Can determine two fractions that when added are close to one | 5 | Number  | VC2M5N05 | **Solve problems involving addition** and subtraction **of fractions with the same or related denominators, using different strategies** | No match | Good match - to the content description. Each elaboration for this content description mentions the use of models or representations rather than mental strategies |
| **9** | **Fraction Pairs** |
| **9a, 9b, 9c, 9d, 9e, 9f, & 9g** | Which is larger or are they the same?  | F15. Can compare the relative size of fractions with related denominators or numerators F16. Can compare the relative size of fractions with related or unrelated denominators or numerators  | 6 | Number | VC2M6N03 | Apply knowledge of equivalence to **compare**, order and represent **common fractions**, including halves, thirds and quarters, on the same number line and **justify their order** | Comparing and ordering fractions by placing cards on a string line across the room and referring to benchmark fractions to justify their position; for example, $\frac{5}{8}$ is greater than $\frac{1}{2}$ can be written as $\frac{5}{8}$ > $\frac{1}{2}$, because half of 8 is 4; $\frac{1}{6}$ is less than $\frac{1}{4}$, because 6 > 4 and can be written as $\frac{1}{6}$ < $\frac{1}{4}$ | Good match |
| **9h**  | Which is larger or are they the same?  | F16. Can compare the relative size of fractions with related or unrelated denominators or numerators  | 7 | Number | VC2M7N03 | Find equivalent representations of rational numbers and represent positive and negative rational numbers and mixed numbers on a number line | Investigating equivalence of fractions using common multiples and a fraction wall, diagrams or a number line to show that **a fraction such as** $\frac{2}{3}$ **is equivalent to** $\frac{4}{6}$ **and** $\frac{6}{9}$ **and** **therefore** $\frac{2}{3}$ **<** $\frac{5}{6}$ | Good match - to the elaboration In this task, $\frac{3}{4}$ is the same as $\frac{6}{8}$ (with a residual of $\frac{2}{8}$ ), which is larger than the residual $\frac{2}{9}$ therefore $\frac{7}{9}$ > $\frac{3}{4}$.  |
| **10** | **Decimals on a number line** |
| **10a & 10b** | a. What number is this point?b. What number is this point? | D1. Can identify a decimal fraction on a number line when the calibrations are tenths  | 7 | Number  | VC2M7N03 | Find equivalent representations of rational numbers and **represent positive and negative rational numbers and mixed numbers on a number line** | Representing positive and negative fractions and mixed numerals on various intervals of the real number line, including intervals that are not symmetrical about zero | Good match |
| **10c** | c. How much medicine is in the syringe? | D2. Can identify a decimal fraction on a number line, in a practical context, including when the calibrations are not tenths  | 4 | Measurement | VC2M4M01 | **Use scaled** and digital **instruments to interpret unmarked and partial units to measure** and compare lengths, masses, capacities, durations and temperatures, **using appropriate units** | Using scaled instruments such as tape measures, measuring jugs, kitchen scales and thermometers to record measures using whole units (for example, 560 millimetres) or whole and part units (for example, 5.25 metres, 1.75 litres, 2.5 kilograms, 28.5° Celsius) | Good match |
| **11** | **Decimal Density** |
| **11a & 11b** | a. Can you name a decimal between 0.1 and 0.11?b. How many decimals are between 0.1 and 0.11? | D3. Understands that between any two distinct decimal numbers there is an infinite number of decimal numbers | 5 | Number | VC2M5N01 | Interpret, compare and order numbers with more than 2 decimal places, including numbers greater than one, using place value understanding; represent these on a number line  | Using a number line or number track to represent and locate decimals with varying numbers of decimal places and numbers greater than one and justifying the placement; for example, 2.335 is halfway between 2.33 and 2.34, that is, 2.33 < 2.335 < 2.34, and 5.283 is between 5.28 and 5.29 but closer to 5.28 | Partial match - decimal density is not mentioned in the curriculum, however this elaboration highlights this concept |
| **12** | **Make me a decimal** |
| **12a, 12b, & 12c** | a. Show me 2 tenths as a decimalb. Show me 27 thousandths as a decimalc. Show me ten tenths as a decimal | D4. Can connect fractional language with decimal notation including regrouping and renaming  | 4 | Number  | VC2M4N01 | Recognise and extend the application of place value to tenths and hundredths and use the conventions of decimal notation to name and represent decimals | Recognising that one is the same as ten-tenths and one-tenth is the same as ten-hundredths and using this relationship to rename decimals; for example, renaming 0.25 as two-tenths and five-hundredths or twenty-five-hundredths | Good match |
| **12d** | d. Show me 27 tenths as a decimal | D4. Can connect fractional language with decimal notation including regrouping and renaming | 4 | Number  | VC2M4N04 | Count by multiples of quarters, halves and thirds, including mixed numerals; locate and represent these fractions as numbers on number lines | Using a number line to represent and **count in tenths,** **recognising that 10 tenths is equivalent to one** | Good match  |
| **13** | **Ordering Decimals** |
| **13** | Put these numbers in order from smallest to largest | D5. Understands the relative size of decimals | 5 | Number | VC2M5N01 | **Interpret, compare and order numbers with more than 2 decimal places, including numbers greater than one, using place value understanding**; represent these on a number line | Making models of decimals including tenths, hundredths and thousandths by subdividing materials or grids, and explaining the multiplicative relationship between consecutive places; for example, explaining that thousandths are 10 times smaller than hundredths, or writing numbers into a place value chart to compare and order them | Good match - to content description |
| **14** | **Connecting Fractions, Decimals and Percent** |
| **14a & 14b** | a. What fraction is shaded?b. What is another fraction name for that? | D6. Can interpret an area model divided into hundredths and represent this as two equivalent fractions | 4 | Number  | VC2M4N03 | Find equivalent representations of fractions using related denominators and **make connections between fractions and decimal notation** | No match | Good match - to content description |
| **14c** | c. What is a decimal name for that? | D7. Can interpret an area model divided into hundredths and represent this as a decimal |  |  |  |  |  |  |
| **14d** | d. What percentage of the grid is shaded? | D8. Can interpret an area model divided into hundredths and represent this as a percentage | 5 | Number  | VC2M5N04 | Recognise that 100% represents the complete whole and use percentages to describe, represent and compare relative size; **connect familiar percentages to their decimal and fraction equivalents** | No match | Good match - to content description |
| **15** | **Decimal Comparison Test** |
| **15** | For each pair, choose the number which is larger. | D9. Can compare the relative size of a pair of decimals | 5 | Number | VC2M5N01 | **Interpret, compare and order numbers with more than 2 decimal places, including numbers greater than one, using place value understanding;** represent these on a number line | Making models of decimals including tenths, hundredths and thousandths by subdividing materials or grids, and explaining the multiplicative relationship between consecutive places; for example, explaining that thousandths are 10 times smaller than hundredths, or writing numbers into a place value chart to compare and order them | Good match - to content description |
| **16** | **Decimal Operations** |
| **16a, 16b & 16c** | a. Which would result in a larger answer? b. What is the answer to 8 x 0.1? c. What is the answer to 8 ÷ 0.1? | D10. Can apply an understanding of multiplication and division to a decimal context | 7 | Number  | VC2M7N05 | **Multiply and divide fractions and decimals using efficient mental and written strategies, and digital tools** | Investigating multiplication of fractions and decimals, using strategies including patterning and multiplication as repeated addition, with both concrete materials and digital tools, and identifying the processes for division as the inverse of multiplication | Good match |
| **17** | **Music Cards** |
| **17a & 17b** | a. Which music card is the better value?b. Please explain | CP1. Applies appropriate proportional reasoning to determine best value | 7 | Number  | VC2M7N10 | Use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts such as ‘best buys’; formulate problems, choosing representations and efficient calculation strategies, designing algorithms and using digital tools as appropriate; interpret and communicate solutions in terms of the situation, justifying choices made about the representation | **Modelling contexts involving proportion**, such as the proportion of students attending the school disco, proportion of the bottle cost to the recycling refund, proportion of the school site that is green space, 55% of Year 7 students attended the end of term function or 23% of the school population voted ‘yes’ to a change of school uniform; and **interpreting and communicating answers in terms of the context of the situation** | Good match |
| **18** | **Reserve Bank** |
| **18a & 18b** | a. Write one quarter of one percentb. Write it a different way | CP2. Can correctly interpret a fraction of a percent and translate it to other representations | 7 | Number  | VC2M7N03 | **Find equivalent representations of rational numbers** and represent positive and negative rational numbers and mixed numbers on a number line | Applying and explaining the equivalence between fraction, decimal and percentage representations of rational numbers, for example, 16%, 0.16, $\frac{16}{100}$ and $\frac{4}{25}$, using manipulatives, number lines or diagrams | Good match |
| **19** | **Chocolate Milk** |
| **19a & 19b** | a. What is the exact daily allowance when 2.5 mg is 125% of the daily allowance?b. Please explain | CP3. Understands how percentages can be greater than 100%, and can move from more than 100% of a quantity back to the whole | 6 | Number  | VC2M6N09 | **Use mathematical modelling to solve practical problems involving rational numbers and percentages,** including in financial contexts; formulate the problems, choosing operations and **using efficient mental and written calculation strategies**, and using digital tools where appropriate; interpret and **communicate solutions in terms of the situation,** justifying the choices made | Modelling practical situations involving percentages using efficient calculation strategies to find solutions, such as mental calculations, spreadsheets, calculators or a variety of informal jottings, and interpreting the results in terms of the situation, for example, purchasing items during a sale | Good match |
| **20** | **Cordial** |
| **20a & 20b** | a. How much syrup would you need to make cordial at a ratio of 1:4 syrup to water?b. Please explain | CP4. Can solve a two-part ratio problem in a practical context | 7 | Number  | VC2M7N09 | Recognise, represent and solve problems involving ratios | **Applying ratios to realistic and meaningful contexts** – for example, mixing 500 millilitres of a liquid with a concentration of 1:4 means $\frac{1}{5}$ concentrate and $\frac{4}{5}$ water so, 0.2 of 500 millilitres is concentrate and 0.8 of 500 millilitres is water – and interpreting results in context | Good match |
| **21** | **Cheese Please** |
| **21a** | a. Estimate how much 0.34 kg would cost, given cost of 1 kg | CP5. Estimates well when determining the price of a fraction of a kilogram, given the kilogram rate  | 7 | Number | VC2M7N05 | Multiply and divide fractions and decimals using efficient mental and written strategies, and digital tools | No elaboration is suitable | Good match - to the content description |
| **21b** | b. Calculate exactly with the calculator | CP6. Chooses the appropriate operation when calculating the cost of a decimal fraction of a kilogram | 7 | Number | VC2M7N05 | Multiply and divide fractions and decimals using efficient mental and written strategies, and digital tools | No elaboration is suitable | Good match - to the content description |