**This Learning Progression begins at Foundation Level of the Victorian Curriculum and concludes at Level 6. Seven progressions are provided in this span.**

*Description:* This Learning Progression emphasises the development of the concept of a fraction and the modelling of fractions using counting or linear measurement.

This Learning Progression describes how a student becomes increasingly able to use fractions as numbers in their own right, and the relationship of numerator and denominator to division and decimal representation.

*Details of progression provide nuanced and detailed descriptions of student learning – what students can say, do, make or write. Examples of student learning in each step are not hierarchical, nor are they to be used as a checklist.*

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| **Victorian Curriculum Foundation Level** | |  | | | | **Victorian Curriculum Level 6** | | |
| **Creating halves**  The student:   * identifies the part and the whole * recognises dividing a whole into 2 parts can create equal or unequal parts * creates equal halves by attending to the linear aspect of a model (folds a paper strip in half to make equal pieces by aligning the edges or makes 2 groups of 3 when halving a collection of 6 counters in a linear arrangement) * distinguishes between halfway and half. | **Repeated halving**  The student:   * recognises quarters and eighths formed by repeated halving of a length (finds halfway then halves each half, or repeatedly halves using a linear arrangement of discrete items – 8 counters halved and then halved again into 4 groups of 2). | | **Repeating fractional parts**  The student:   * accumulates fractional parts of a length (knows that two-quarters is inclusive of one-quarter and twice one-quarter, not just the second quarter) * checks the equality of parts by iterating one part to form the whole (when given a representation of one-quarter of a length and asked, ‘what fraction is this of the whole length?’, compares the size of the unit to the whole). | **Re-imagining the whole**  The student:   * calculates thirds by visualising or approximating and adjusting (imagines a paper strip in 3 parts, then adjusts and folds) * identifies examples and non-examples of partitioned representations of thirds and fifths * recognises the whole can be redivided into different fractional parts for different purposes (a strip of paper divided into quarters can be redivided to show fifths) * demonstrates that the more parts into which a whole is divided, the smaller the parts become. | **Equivalence of fractions**  The student:   * identifies the need to have equal wholes to compare fractional parts (explains why one-third as a number is larger than one-quarter) * creates fractions larger than 1 by recreating the whole (when creating four-thirds, recognises that three-thirds corresponds to the whole and the fourth third is part of an additional whole) * creates equivalent fractions by dividing the same-sized whole into different parts (shows two-sixths is the same as one-third of the same whole) * links partitioning to establish relationships between fractions (creates one-sixth as one-third of one-half). | | **Fractions as numbers**  The student:   * connects the concepts of fractions and division: a fraction is a quotient, or a division statement (two-sixths is the same as 2 ÷ 6 or 2 partitioned into 6 equal parts) * justifies where to place fractions on a number line (to place two-thirds on a number line, divides the space between 0 and 1 into 3 equal parts) * understands the relationship between a fraction, decimal and percentage as different representations of the same quantity (½ = 0.5 = 50%) shows an understanding that a fraction represents a single number, not two separate whole numbers (explains why 2/4 is not halfway between 1/3 and 3/5, although 2 is midway between 1 and 3 and 4 is midway between 3 and 5). | **Using fractions**  The student   * uses knowledge of equivalence to compare fractions (when comparing two-thirds and three-quarters, subdivides the whole into twelfths) * justifies the need for the same denominators to add or subtract fractions * uses strategies to find a fraction of a quantity (to find two-thirds of 27, finds one-third then doubles) * demonstrates why dividing by a fraction can result in a larger number * understands the difference between multiplying and dividing fractions (recognises ½ × ¼ as one-half of a quarter and ½ ÷ ¼ as how many quarters are in one half). |

Student learning in numeracy has links beyond Mathematics in the Victorian Curriculum F–10. Teachers are encouraged to identify links within their teaching and learning plans.