**Transition: Early Additive to Advanced Additive Domain: Multiplication and Division**

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| **Achievement Objectives** | **Number: Level 3** | **Algebra: Level 3** |
| Number Strategies AO1:  Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages.  Number Knowledge AO1  Know basic multiplication and division facts.  Number Knowledge AO3  Know how many tenths, tens, hundreds, and thousand, are in whole numbers. | Equations and Expressions AO1:  Record and interpret additive and simple multiplicative strategies, using words, diagrams, and symbols, with an understanding of equality. |

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| **Strategies being developed** | **Problem progression** | **References** | **Knowledge being developed** | **Resources** |
| Use times five facts to work out times six, seven, and four facts (using the distributive property) | 2 × 5 = 🞏 so 2 × 6 = 🞏,  2 × 7 = 🞏  4 × 5 = 🞏 so 4 × 6 = 🞏,  4 × 7 = 🞏  6 × 5 = 🞏 so 6 × 6 = 🞏,  6 × 7 = 🞏  9 × 5 = 🞏 so 9 × 6 = 🞏,  9 × 7 = 🞏  20 × 5 = 🞏 so  20 × 6 = 🞏, 20 × 7 = 🞏 | ***Teaching Multiplication and Division (Book 6)***  Introduction (24-25)  [Fun With Fives](https://nzmaths.co.nz/node/944) (28-30)  [A Little Bit More/A Little Bit Less](https://nzmaths.co.nz/node/945) (32-34)  ***Figure It Out***  N7/8.1 [Fives And Tens](https://nzmaths.co.nz/node/3331) (4-5) | Recall groupings of twos, threes, fives, and tens that are in numbers to 100 and the resulting remainders | ***Teaching Number Knowledge (Book 4)***  [Skip-counting On A Number Line](https://nzmaths.co.nz/node/1055) (11)  [Beep](https://nzmaths.co.nz/node/1056) (12)  [Using Calculators](https://nzmaths.co.nz/node/1059) (24)  [Estimation](https://nzmaths.co.nz/node/1080) (25)  [Dividing? Think About Multiplying First](https://nzmaths.co.nz/node/1099) (37)  ***Figure It Out***  N 7/8 L.1 [Flying Feet](https://nzmaths.co.nz/node/4188) (9)  N 7/8 L.1 [That’s Odd](https://nzmaths.co.nz/node/3330) (2)  N 7/8 L.1 [Fives And Tens](https://nzmaths.co.nz/node/3331) (4)  N 7/8 L.1 [Firewood Fever](https://nzmaths.co.nz/node/3361) (16) |

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| **Strategies being developed** | **Problem progression** | **References** | **Knowledge being developed** | **Resources** |
| Use times ten facts to work out times nine facts (using the distributive property) | 2 × 10 = 🞏 so 2 × 9 = 🞏  9 × 10 = 🞏 so 9 × 9 = 🞏  6 × 10 = 🞏 so 6 × 9 = 🞏  3 × 9 = 30 - 🞏 = 🞏  8 × 9 = 80 - 🞏 = 🞏  5 × 9 = 50 - 🞏 = 🞏  2 × 20 = 🞏 so 2 × 19 = 🞏  4 × 100 = 🞏 so 4 × 99 =🞏 | ***Teaching Multiplication and Division (Book 6)***  [A Little Bit More/A Little Bit Less](https://nzmaths.co.nz/node/945) (32-34)  ***Figure It Out***  N 7/8 Link 2 [Planting With The Whanau](https://nzmaths.co.nz/node/3374) (6) | Recall all the multiplication and division facts for 2, 3, 5, 10 x tables | ***Teaching Number Knowledge (Book 4)***  [Number Mats and Number Fans](https://nzmaths.co.nz/node/1092) (34)  [In and Out](https://nzmaths.co.nz/node/1095) (36)  [Multiplication Madness](https://nzmaths.co.nz/node/1096) (36)  [Loopy](https://nzmaths.co.nz/node/1097) (37)  [Multiplication Flash Cards](https://nzmaths.co.nz/node/1100) (38)  ***Figure It Out***  Bf 2-3 (11) [Heading For Home](https://nzmaths.co.nz/node/2864)  Bf 2-3 (24) [Six Shooters](https://nzmaths.co.nz/node/2877)  Bf 3 (20) [Dicey Dabble](https://nzmaths.co.nz/node/2896)  Bf 3-4 (12) [A Matter of Factor](https://nzmaths.co.nz/node/2920)  Bf 3-4 (15) [How Many Factors?](https://nzmaths.co.nz/node/2922)  Bf 3-4 [To and Fro](https://nzmaths.co.nz/node/2923) (16)  N 7/8 L.1 [Sums and Products](https://nzmaths.co.nz/node/3357) (12)  N 7/8 L.1 [Container Contents](https://nzmaths.co.nz/node/3358) (13)  N 7/8 L.2 [Table Tricks](https://nzmaths.co.nz/node/3371) (2) |
| Change the order of the factors to make a multiplication problem easier, e.g. 26 x 3 = 3 x 26 |  | ***Teaching Multiplication and Division (Book 6)***  [Turn Abouts](https://nzmaths.co.nz/node/922) (34-36)  ***Figure It Out***  N 2-3 [High Flyers](https://nzmaths.co.nz/node/3123) (14)  BF 2-3 [Times Up](https://nzmaths.co.nz/node/2861) (8)  NS&AT2-3.1 [Keeping Score](https://nzmaths.co.nz/node/4014) (6-7) | Recall groupings of 10 and 100 that can be made from a four-digit number | ***Teaching Number Knowledge (Book 4)***  [Tens in Hundreds and More](https://nzmaths.co.nz/node/1082) (27)  ***Figure It Out***  N 7/8 L.1 [Fund-raising](https://nzmaths.co.nz/node/3349) (6) |

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| **Strategies being developed** | **Problem progression** | **References** | **Knowledge being developed** | **Resources** |
| Find out how many ones, tens, hundreds and thousands are in all of a whole number, |  | ***Teaching Multiplication and Division (Book 6)***  [Changing Money](https://nzmaths.co.nz/node/1025) (25-28) | Recall multiplication facts for squares to 100 |  |
| Use two times facts to work out three, four, six, and eight times facts (using doubling and the distributive property) | 2 × 5 = 🞏 so 4 × 5 = 🞏  so 5 × 4 = 🞏  2 × 6 = 🞏, 3 × 6 = 🞏,  6 × 6 = 🞏, 4 × 6 = 🞏,  8 × 6 = 🞏  2 × 8 = 🞏, 3 × 8 = 🞏,  6 × 8 = 🞏, 4 × 8 = 🞏,  8 × 8 = 🞏  2 × 25 = 🞏, 3 × 25 = 🞏,  4 × 25 = 🞏,  8 × 25 = 🞏 | ***Figure It Out***  BF 3 [Factor Puzzles](https://nzmaths.co.nz/node/2889) (11)  BF 3 [Stars And Students](https://nzmaths.co.nz/node/2890) (12)  BF 3 [Digital Delights](https://nzmaths.co.nz/node/2891) (13)  BF 3 [Multiple Mirrors](https://nzmaths.co.nz/node/2897) (21)  N 7/8 Link [Table Tricks](https://nzmaths.co.nz/node/3371) (2)  N 7/8 Link [Fun Factor](https://nzmaths.co.nz/node/3373) (5) | Record the results of mental calculation using multiplication and division equations and diagrams | ***Figure It Out***  N 7/8 L.2 [Divisive Tactics](https://nzmaths.co.nz/node/3409) (14) |
| Multiply by tens, hundreds, thousands, and other multiples of ten | 5 × 10 = 🞏, 5 × 20 = 🞏,  5 × 40 = 🞏  8 × 10 = 🞏, 8 × 20 = 🞏,  8 × 30 =🞏  6 × 10 = 🞏, 6 × 30 = 🞏,  6 × 60 = 🞏  4 × 100 = 🞏,  4 × 200 = 🞏,4 × 400= 🞏   * 3 × 100 = 🞏, 3 × 400 = 🞏, * 3 × 900 = 🞏 | ***Teaching Multiplication and Division (Book 6)***  [Multiplying Tens](https://nzmaths.co.nz/node/949) (30-32)  ***Figure It Out***  N 3.1 [Standing Room Only](https://nzmaths.co.nz/node/3148) (4)  N 3.1 [Tens Time](https://nzmaths.co.nz/node/3155) (8)  NS 7/8 Link [It Pays to Win!](https://nzmaths.co.nz/node/4198) (18) |  |  |

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| Solve sharing problems by reversing multiplication facts | 4 × 9 = 🞏 so 36 shared among 4?, among 2?  6 × 10 = 🞏 so 60 shared among 10, among 5, among 20  3 × 8 = 🞏 so 24 shared among 3, among 6  8 × 8 = 🞏 so 64 shared among 8, among 4, among 16  9 × 8 = 🞏 so 72 shared among 3, among 18 | ***Teaching Multiplication and Division (Book6)***  [Goesintas](https://nzmaths.co.nz/node/951) (38-40)  ***Figure It Out***  N 2-3 [Wheel and Deal](https://nzmaths.co.nz/node/3124) (15)  N 2-3 [Stepping Out](https://nzmaths.co.nz/node/3125) (16) |
| Solve “How many equal sets of ?” problems by reversing multiplication facts | 5 × 8 = 🞏 so 40 can be made into 🞏 sets of 4, of 2, of 8  6 × 7 = 🞏 so 42 can be made into 🞏 sets of 6, of 7, of 3, of 14   * 9 × 4 = 🞏 so 36 can be made into 🞏 sets of 8, of 3, of 12 | ***Teaching Multiplication and Division (Book6)***  [Long jumps](https://nzmaths.co.nz/node/950) (36-38)  ***Figure It Out***  BF 2-3 [Heading for Home](https://nzmaths.co.nz/node/2864) (11)  N 7/8 Link [Container Contents](https://nzmaths.co.nz/node/3358) (13) |
| Solve problems using a combination of addition, subtraction, multiplication and division mental strategies |  | ***Figure It Out***  BF 2.1 [Dazzler Digs On](https://nzmaths.co.nz/node/3072) (19)  BF 2.1 [Pocket Money](https://nzmaths.co.nz/node/3067) (15)  BF 2-3 [Thirty One or None](https://nzmaths.co.nz/node/2857) (4)  NS&AT 7/8.1 [Choice Calculations](https://nzmaths.co.nz/node/4183)  NS&AT 7/8.1 [Splitting Numbers](https://nzmaths.co.nz/node/4184) (2)  NS&AT 7/8.1 [Hit the Target](https://nzmaths.co.nz/node/4186)  (7)  NS&AT 7/8.1 [Pathways](https://nzmaths.co.nz/node/4187) (8) |