**Transition: Advanced Additive to Advanced Multiplicative Domain:Algebraic Thinking**

E

CA

AC

EA

AA

AM

AP

|  |  |  |
| --- | --- | --- |
| **Achievement Objectives** | **Algebra: Level Four** | **Number: Level Five** |
| Patterns and Relationships AO2:  Use graphs, tables, and rules to describe linear relationships found in number and spatial patterns.  Equations and Expressions AO1  Form and solve simple linear equations. | Number Strategies and Knowledge AO2:  Use prime numbers, common factors and multiples, and powers [including square roots]. |

|  |  |
| --- | --- |
| **Strategies being developed** | **References** |
| Find relationships in repeating and sequential patterns and represent the relationships using additive and multiplicative rules,  e.g. In the sequence 3, 7, 11, 15, …, the tenth number is 10  4 – 1 = 39. | **T*eaching Number through Measurement, Geometry, Algebra, and Statistics (Book 9)***  Sticky Moments (34-38)  ***Figure It Out***  Alg 3 [Pattern Predictions](https://nzmaths.co.nz/node/2590) (1)  Alg 3 [Duncan’s Day](https://nzmaths.co.nz/node/2578) (17)  Alg 3 [Puzzling Patterns](https://nzmaths.co.nz/node/4683) (16)  Alg 3-4 [All Square](https://nzmaths.co.nz/node/2591) (2)  Alg 3-4 [Where to Sit](https://nzmaths.co.nz/node/2594) (4)  Alg 3-4 [Waka Widths](https://nzmaths.co.nz/node/2597) (6)  Alg 3-4 [Patterns and Rules](https://nzmaths.co.nz/node/2606) (16)  Alg 7/8 L1 [Building Borders](https://nzmaths.co.nz/node/2790) (12)  Alg 7/8 L1 [Tiling Teasers](https://nzmaths.co.nz/node/2795) (18)  Alg 7/8 4.2 [Which DJ?](https://nzmaths.co.nz/node/2675) (1)  Alg 7/8 4.2 [Straw Chains](https://nzmaths.co.nz/node/2676) (2)  Alg 7/8 4.2 [Bailey Bridges](https://nzmaths.co.nz/node/2678) (6)  Alg 7/8 4.2 [Stapled](https://nzmaths.co.nz/node/2682) (10)  Alg 7/8 4.3 [Table Mats](https://nzmaths.co.nz/node/2715) (2)  Alg 7/8 4.3 [Stacking Up](https://nzmaths.co.nz/node/2717) (4)  Alg 7/8 4.3 [Stick Houses](https://nzmaths.co.nz/node/2717) (16)  ***nzmaths website***  [You can Count on Squares](https://nzmaths.co.nz/node/388)  [Tukutuku Panels](https://nzmaths.co.nz/node/394) |

|  |  |
| --- | --- |
| **Strategies being developed** | **References**  E  CA  AC  EA  AA  AM  AP |
| Interpret and identify relationships in tables and graphs. | **T*eaching Number Through Measurement, Geometry, Algebra, And Statistics (Book 9)***  [Sticky Moments](https://nzmaths.co.nz/node/2520) (34-38)  ***Figure It Out***  Alg 3 [Spreadsheet Challenge](https://nzmaths.co.nz/node/2570) (2)  Alg 3 [Possum Poles](https://nzmaths.co.nz/node/2561) (6)  Alg 3 [Ups and Downs](https://nzmaths.co.nz/node/2567) (9)  Alg 3-4 [Tongan Travel](https://nzmaths.co.nz/node/2605) (14)  Alg 3-4 [Graphic Details](https://nzmaths.co.nz/node/2610) (20)  Alg 7/8 L1 [Cube Signs](https://nzmaths.co.nz/node/2784) (4)  Alg 7/8 [Fencing](https://nzmaths.co.nz/node/2785) (6)  Alg 7/8 [Patterns and Spreadsheets](https://nzmaths.co.nz/node/2791) (14)  Alg 7/8 [Whānau Photo](https://nzmaths.co.nz/node/2798) (21)  Alg 7/8 [Graphic Details](https://nzmaths.co.nz/node/2610) (22)  [Alg 7/8 Scooting](https://nzmaths.co.nz/node/13529) (24)  Alg 7/8 4.2 [Hine’s Spreadsheets](https://nzmaths.co.nz/node/2685) (14)  Alg 7/8 4.2 [Parking Fees](https://nzmaths.co.nz/node/2689) (17)  Alg 7/8 4.2 [Changing Tyres](https://nzmaths.co.nz/node/2697) (24)  Alg 7/8 4.3 [Save Some, Spend Some](https://nzmaths.co.nz/node/2714) (1)  Alg 7/8 4.3 [Kidding Around](https://nzmaths.co.nz/node/2719) (8)  Alg 7/8 4.3 [Stepping Stones](https://nzmaths.co.nz/node/2720) (9)  Alg 7/8 4.3 [Patterns, Rules And Spreadsheets](https://nzmaths.co.nz/node/2728) (20)  Alg 7/8 4.3 [Car Journey](https://nzmaths.co.nz/node/13527) (22)  Alg 7/8 4.3 [Surfboard Sums](https://nzmaths.co.nz/node/13528) (23)  Alg 7/8 4.3 [Holiday Pay](https://nzmaths.co.nz/node/2729) (24) |

|  |  |
| --- | --- |
| **Strategies being developed** | **References**  E  CA  AC  EA  AA  AM  AP |
| Model situations with equations, and expressions, and find missing unknowns in the equations. | ***Figure It Out***  Alg 3 [Preparing For The Hāngi](https://nzmaths.co.nz/node/2566) (8)  Alg 3 [Putting Pens To Paper](https://nzmaths.co.nz/node/2582) (20)  Alg 3-4 [Delicatessen Mathematics](https://nzmaths.co.nz/node/2604) (12)  Alg 3-4 [Stacks Of Money](https://nzmaths.co.nz/node/2609) (19)  Alg 3-4 [Domino Delight](https://nzmaths.co.nz/node/2612) (21)  Alg 3-4 [Cup Capers](https://nzmaths.co.nz/node/2615) (22)  Alg 3-4 [Number Tricks](https://nzmaths.co.nz/node/2620) (24)  Alg 7/8 L1 [Thinking Ahead](https://nzmaths.co.nz/node/2786) (9)  Alg 7/8 L1 [Vedic Digits](https://nzmaths.co.nz/node/2788) (10)  Alg 7/8 L1 [Digit Chains](https://nzmaths.co.nz/node/2695) (16)  Alg 7/8 L1 [Pizza Order](https://nzmaths.co.nz/node/2794) (17)  Alg 7/8 4.2 [Number Crunching](https://nzmaths.co.nz/node/2677) (4)  Alg 7/8 4.2 [Table Tennis](https://nzmaths.co.nz/node/2679) (8)  Alg 7/8 4.2 [Up The Garden Path](https://nzmaths.co.nz/node/2681) (9)  Alg 7/8 4.2 [An Artist’s Delight](https://nzmaths.co.nz/node/2683) (12)  Alg 7/8 4.2 [Pegged Out](https://nzmaths.co.nz/node/2684) (13)  Alg 7/8 4.2 [Fish and Chips](https://nzmaths.co.nz/node/2687) (15)  Alg 7/8 4.2 [Digit Chains](https://nzmaths.co.nz/node/2695) (21)  Alg 7/8 4.2 [Number Puzzles](https://nzmaths.co.nz/node/2696) (22)  Alg 7/8 4.3 [Problem Smorgasbord](https://nzmaths.co.nz/node/2722) (12)  ***nzmaths website***  [Balancing Acts](https://nzmaths.co.nz/node/389)  [Matilda’s Waltz with the 5 Strip Box](https://nzmaths.co.nz/node/390) |

|  |  |
| --- | --- |
| **Strategies being developed** | **References**  E  CA  AC  EA  AA  AM  AP |
| Find out whether a number is prime or non-prime, and use primes to find the factors of a number. | ***Figure It Out***  N 7/8 4.4 [In Your Prime](https://nzmaths.co.nz/node/3466) (1)  N 7/8 4.4 [Going Bananas](https://nzmaths.co.nz/node/3467) (2)  N 7/8 4.4 [Going to Extraordinary Lengths](https://nzmaths.co.nz/node/3468) (4)  N 7/8 4.4 [Boxing Balls](https://nzmaths.co.nz/node/3469) (5)  N 7/8 4.4 [Prime Sites](https://nzmaths.co.nz/node/3470) (6) |
| Find relationships and patterns in powers and square roots. | ***Figure It Out***  N 7/8 4.4 [Building Squares](https://nzmaths.co.nz/node/3479) (14)  N 7/8 4.4 [Calculator Power](https://nzmaths.co.nz/node/3482) (16)  N 7/8 4.4 [Cubic Capacity](https://nzmaths.co.nz/node/3483) (17)  N 7/8 4.4 [Growing Pains](https://nzmaths.co.nz/node/3523) (18)  N 7/8 4.4 [Fold and Crease](https://nzmaths.co.nz/node/3524) (19)  N 7/8 4.4 [Pip’s Pay](https://nzmaths.co.nz/node/3525) (20)  N 7/8 4.4 [Starting With Stamps](https://nzmaths.co.nz/node/3527) (22)  N 7/8 4.4 [Superior Side Lengths](https://nzmaths.co.nz/node/3528) (24)  N 7/8 4.5 [Body Mass](https://nzmaths.co.nz/node/3539) (10)  ***nzmaths website***  [Two’s Company](https://nzmaths.co.nz/node/391)  [The How and Why of General Terms](https://nzmaths.co.nz/node/403)  [The Truth About Triangles and Squares](https://nzmaths.co.nz/node/393) |