MATH YEAR AT A GLANCE – grade 6 (*see curriculum for Elaborations - italics here include some)*

*This is a suggested sequence for teaching concepts and content in a grade 6 year. It is not meant to be prescriptive, but supportive, to newer teachers who want a sense of how a year might roll out. Authors cited are: J. Shumway, “Number Sense Routines”; C. Fosnot, “Young Mathematicians at Work”; J. Lempp, “Math Workshop” & J. Boaler, “Mathematical Mindsets”.*

*Concepts are first taught in the ‘full’ 45 – 60 min. lesson (that is, ‘Before-Explore-Connect-practice’). Once they are established, they are ‘rolled over’ into the daily 5-10 min. ‘Number Sense Routine’ which can happen before the full lesson, or at a different time of the day. This allows for deeper mastery, for sharing of strategies and for concepts to get ‘into their bones’.*

**Sept.**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | * Introduce Number talks/routines using Shumway & Fosnot, through multiplication and division facts to 100 (developing computational fluency)
 |
| Full Lessons (45 – 60 min/day) | * Build Math community & Growth Mindset (see Van de Walle, Lempp & Jo Boaler)
* Small to large numbers *(thousandths to billions; compare, order, estimate)*
* Factors and multiples, prime and composite numbers, divisibility rules, factor trees & prime factor phrase
 |

**Oct-Nov.**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Mental math strategies for multiplication and division facts to 100 (developing computational fluency) |
| Full Lessons (45 – 60 min/day) | * Improper fractions and mixed numbers *(using benchmarks, number lines and models – pattern blocks, Cuisenaire rods, strips - to compare & order)*
* Multiplication and division of decimals
* Introduction to ratios *(both part-to-part and part-to-whole)*
 |

**Dec-Jan.**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Mental math strategies for multiplication and division of decimals AND placing improper fractions on organic number line using benchmarks, common denominators to compare and order |
|  | * Whole number percents and percentage discounts
* Financial literacy – simple budgets & consumer math
* Perimeter of complex shapes *(use colour tiles, pattern blocks, tangrams)*
 |

**Feb-March**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Mental math strategies for percents and percents as operators |
| Full Lessons (45 – 60 min/day) | * Increasing and decreasing patterns, using expressions, tables, and graphs as functional relationships
* Line graphs *(and used in context in Socials and Science)*
* One-step solutions with whole-number coefficients and solutions *(use a balance, algebra tiles)*
* Single outcome probability
 |

**April-May**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Mental math strategies for factors and multiples, proportional reasoning |
| Full Lessons (45 – 60 min/day) | * Angle measurement and classification
* Triangles ***and***Area of triangles, parallelograms and trapezoids
* Combinations of transformations
 |

**June**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Review mental math strategies |
| Full Lessons (45 – 60 min/day) | * Order of operations with whole numbers *(with brackets, exclude exponents)*
* Volume & capacity
 |

MATH YEAR AT A GLANCE – grade 7 (*see curriculum for Elaborations - italics here include some)*

*This is a suggested sequence for teaching concepts and content in a grade 7 year. It is not meant to be prescriptive, but supportive, to newer teachers who want a sense of how a year might roll out. Authors cited are: J. Shumway, “Number Sense Routines”; C. Fosnot, “Young Mathematicians at Work”; J. Lempp, “Math Workshop” & J. Boaler, “Mathematical Mindsets”.*

*Concepts are first taught in the ‘full’ 45 – 60 min. lesson (that is, ‘Before-Explore-Connect-Practice’). Once they are established, they are ‘rolled over’ into the daily 5-10 min. ‘Number Sense Routine’ which can happen before the full lesson, or at a different time of the day. This allows for deeper mastery, for sharing of strategies and for concepts to get ‘into their bones’.*

**Sept.**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | * Introduce Number talks/routines using Shumway & Fosnot, through multiplication and division facts to 100 *(extending computational fluency)*
 |
| Full Lessons (45 – 60 min/day) | * Build Math community & Growth Mindset (see Van de Walle, Boaler & Lempp)
* Relationships between decimals, fractions, ratios and percent *(comparing and ordering using the number line; conversions, equivalency, place value and benchmarks)*
* Financial literacy – financial percentage, simple budgeting and consumer math
 |

**Oct-Nov.**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Decimals, fractions, ratios and percent *(comparing and ordering using the number line; conversions, equivalency, place value and benchmarks)* |
| Full Lessons (45 – 60 min/day) | * Operations with decimals *(add, subtract, multiply and divide &* *order of operations)*
* Circumference and area of circles
* Circle graphs *(construct, label, interpret; translate percentages displayed into quantities & vice versa)*
 |

**Dec-Jan.**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Operations with decimals *(add, subtract, multiply and divide &* *order of operations)* |
| Full Lessons (45 – 60 min/day) | * Operations with integers *(add, subtract, multiply and divide &* *order of operations)*
* Cartesian coordinates and graphing
 |

**Feb-March**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Operations with integers *(add, subtract, multiply and divide &* *order of operations)* |
| Full Lessons (45 – 60 min/day) | * Two-step equations with whole-number coefficients, constants and solutions *(using balance, algebra tiles)*
* Discrete linear relations using expressions, tables and graphs
 |

**April-May**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Review mental math strategies for decimals (ordering & operating) |
| Full Lessons (45 – 60 min/day) | * Combinations of transformations
* Volume of rectangular prisms and cylinders
 |

**June**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Review mental math strategies for operations with integers |
| Full Lessons (45 – 60 min/day) | * Experimental probability with two independent events
* Single-outcome probability, both theoretical and experimental
 |

MATH YEAR AT A GLANCE – grade 8 (*see curriculum for Elaborations- italics here include some)*

*This is a suggested sequence for teaching concepts and content in a grade 8 year. It is not meant to be prescriptive, but supportive, to newer teachers who want a sense of how a year might roll out. Authors cited are: J. Shumway, “Number Sense Routines”; C. Fosnot, “Young Mathematicians at Work”; J. Lempp, “Math Workshop” & J. Boaler, “Mathematical Mindsets”.*

*Concepts are first taught in the ‘full’ 45 – 60 min. lesson (that is, ‘Before-Explore-Connect-practice’). Once they are established, they are ‘rolled over’ into the daily 5-10 min. ‘Number Sense Routine’ which can happen before the full lesson, or at a different time of the day. This allows for deeper mastery, for sharing of strategies and for concepts to get ‘into their bones’.*

**Sept.**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | * Introduce Number talks/routines using Shumway & Fosnot, through reviewing mental math multiplication and division strategies with whole numbers and decimals.
 |
| Full Lessons (45 – 60 min/day) | * Build Math community & Growth Mindset (see Van de Walle, Boaler & Lempp)
* Central tendency (mean, median & mode)
* Perfect squares and cubes *(using colour tiles or multi-link cubes)*
* Square and cube roots
 |

**Oct-Nov.**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Mental math strategies for percent calculations |
| Full Lessons (45 – 60 min/day) | * Pythagorean theorem
* Numerical proportional reasoning (rates, ratio, proportions, and percent)
 |

**Dec-Jan.**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Mental math strategies for squares, cubes and roots |
| Full Lessons (45 – 60 min/day) | * Operations with fractions including order of operations *(using pattern blocks or Cuisenaire rods*
* Percents less than 1 and greater than 100 (decimal and fraction percents)
* Financial literacy *(proportional reasoning strategies, such as unit rate, equivalent fractions given prices and quantities)*
 |

**Feb-March**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Mental math strategies for operations with fractions |
| Full Lessons (45 – 60 min/day) | * Discrete linear relations (extended to larger numbers, limited to integers)
* Expressions – writing and evaluating using substitution
* Two-step equations with integer coefficients, constants and solutions *(modelling the preservation of equality using a balance, algebra tiles)*
 |

**April-May**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Mental math strategies for operations with fractions |
| Full Lessons (45 – 60 min/day) | * Surface area and volume of regular solids, including triangular and other right prisms and cylinders
* Construction, views and nets of 3D objects
 |

**June**

|  |  |
| --- | --- |
| Number Sense Routine (5-10 min/day) | Review of mental math strategies this year |
| Full Lessons (45 – 60 min/day) | * Review of concepts as needed
* Theoretical probability with 2 independent events
 |