McGraw-Hill Ryerson

Correlation between *McGraw-Hill Ryerson's Mathematics 7: Making Connections* and the **Ontario Curriculum Grades 1-8, Mathematics, 2005 REVISED**

Number Sense and Numeration

Overall Expectations	Chapter/Section
7m1 represent, compare, and order numbers, including integers;	throughout Chapters 3, 5, 7, 11 Ch. 3/4 Making Connections
7m2 demonstrate an understanding of addition and subtraction of fractions and integers, and apply a variety of computational strategies to solve problems involving whole numbers and decimal numbers;	throughout Chapters 3, 5,11
7m3 demonstrate an understanding of proportional relationships using percent, ratio, and rate.	throughout Chapter 5
Specific Expectations	**Chapter/Section**
Quantity Relationships *7m4* represent, compare, and order decimals to hundredths and fractions, using a variety of tools;	throughout Chapter 5
7m5 generate multiples and factors, using a variety of tools and strategies;	throughout Chapter 3 7.1, 7.2, 7.3
7m6 identify and compare integers found in real-life contexts;	11.1
7m7 represent and order integers, using a variety of tools;	throughout chapter 11 11.1
7m8 select and justify the most appropriate representation of a quantity (i.e., fraction, decimal, percent) for a given context;	throughout chapter 5
7m9 represent perfect squares and square roots, using a variety of tools;	7.1, 7.2, 7.3
7m10 explain the relationship between exponential notation and the measurement of area and volume;	7.1
Operational Sense *7m11* divide whole numbers by simple fractions and by decimal numbers to hundredths, using concrete materials;	5.1
7m12 use a variety of mental strategies to solve problems involving the addition and subtraction of fractions and decimals;	throughout Chapter 3
7m13 solve problems involving the multiplication and division of decimal numbers to thousandths by one-digit whole numbers, using a variety of tools and strategies;	5.1, 5.3, 5.4

7m14 solve multi-step problems arising from real-life contexts and involving whole numbers and decimals, using a variety of tools and strategies;	throughout Chapters 3, 5 Ch. 3/4 Making Connections
7m15 use estimation when solving problems involving operations with whole numbers, decimals, and percents, to help judge the reasonableness of a solution;	Get Ready for Grade 7 Pg 2-5 Throughout Chapter 5
7m16 evaluate expressions that involve whole numbers and decimals, including expressions that contain brackets, using order of operations;	1.4, 1.5, 1.7 Ch. 5 calculations 8.4 Ch. 12 Get Ready
7m17 add and subtract fractions with simple like and unlike denominators, using a variety of tools and algorithms;	throughout Chapter 11 Ch. 11/12 Task
7m18 demonstrate, using concrete materials, the relationship between the repeated addition of fractions and the multiplication of that fraction by a whole number;	throughout Chapter 3
7m19 add and subtract integers, using a variety of tools;	throughout Chapter 11 Ch. 11/12 task
Proportional Relationships *7m20* determine, through investigation, the relationships among fractions, decimals, percents, and ratios;	5.3
7m21 solve problems that involve determining whole number percents, using a variety of tools;	5.4
7m22 demonstrate an understanding of rate as a comparison, or ratio, of two measurements with different units;	
7m23 solve problems involving the calculation of unit rates;	

Measurement

Overall Expectations	Chapter/Section
7m24 report on research into real-life applications of area measurements;	Throughout chapter 1; Task chapter 1/2
7m25 determine the relationships among units and measurable attributes, including the area of a trapezoid and the volume of a right prism.	Throughout chapters 1, 8
Specific Expectations	**Chapter/Section**
Attributes, Units, and Measurement Sense *7m26* research and report on real-life applications of area;	Throughout chapter 1
Measurement Relationships *7m27* sketch different polygonal prisms that share the same volume;	8.5
7m28 solve problems that require conversion between metric units of measure;	Throughout chapters 1, 8 Get Ready Chapter 7
7m29 solve problems that require conversion between metric units of area (i.e., square centimetres, square metres);	Throughout chapters 1, 8

7m30 determine, through investigation using a variety of tools and strategies, the relationship for calculating the area of a trapezoid, and generalize to develop the formula [i.e., Area = (sum of lengths of parallel sides x height) ÷ 2];	1.5; Using Technology pg 37
7m31 solve problems involving the estimation and calculation of the area of a trapezoid;	1.5, 1.6
7m32 estimate and calculate the area of composite two-dimensional shapes by decomposing into shapes with known area relationships;	1.7
7m33 determine, through investigation using a variety of tools and strategies, the relationship between the height, the area of the base, and the volume of right prisms with simple polygonal bases, and generalize to develop the formula (i.e., Volume = area of base x height);	8.5
7m34 determine, through investigation using a variety of tools, the surface area of right prisms;	8.4
7m35 solve problems that involve the surface area and volume of right prisms and that require conversion between metric measures of capacity and volume (i.e., millilitres and cubic centimetres);	8.5

Geometry and Spatial Sense

Overall Expectations	**Chapter/Section**
7m36 construct related lines, and classify triangles, quadrilaterals, and prisms;	throughout Chapters 1, 2, 8 Ch. 1/2 Making Connections Ch. 7/8 Making Connections
7m37 develop an understanding of similarity, and distinguish similarity and congruence;	2.3, 2.4
7m38 describe location in the four quadrants of a coordinate system, dilatate two-dimensional shapes, and apply transformations to create and analyse designs.	6.3 throughout chapter 13
Specific Expectations	**Chapter/Section**
Geometric Properties *7m39* construct related lines (i.e., parallel; perpendicular; intersecting at 30º, 45º, and 60º), using angle properties and a variety of tools and strategies;	Get Ready chapter 2 Using technology pg. 75
7m40 sort and classify triangles and quadrilaterals by geometric properties related to symmetry, angles, and sides, through investigation using a variety of tools and strategies;	2.1
7m41 construct angle bisectors and perpendicular bisectors, using a variety of tools and strategies, and represent equal angles and equal lengths using mathematical notation;	
7m42 investigate, using concrete materials, the angles between the faces of a prism, and identify right prisms;	8.1, 8.2, 8.3

Geometric Relationships *7m43* identify, through investigation, the minimum side and angle information (i.e., side-side-side; side-angle-side; angle-side angle) needed to describe a unique triangle;	throughout Chapter 2 Ch. 1/2 task Ch. 1/2 Making Connections
7m44 determine, through investigation using a variety of tools, relationships among area, perimeter, corresponding side lengths, and corresponding angles of congruent shapes;	throughout Chapter 2 Ch. 1/2 task Ch. 1/2 Making Connections
7m45 demonstrate an understanding that enlarging or reducing two-dimensional shapes creates similar shapes;	2.4; Using Technology pg.75
7m46 distinguish between and compare similar shapes and congruent shapes, using a variety of tools and strategies;	2.4
Location and Movement *7m47* plot points using all four quadrants of the Cartesian coordinate plane;	
7m48 identify, perform, and describe dilatations (i.e., enlargements and reductions), through investigation using a variety of tools;	2.4; Using Technology pg.75
7m49 create and analyse designs involving translations, reflections, dilatations, and/or simple rotations of two-dimensional shapes, using a variety of tools and strategies;	Throughout chapters 2, 11 Ch. 1/2 Making Connections
7m50 determine, through investigation using a variety of tools, polygons or combinations of polygons that tile a plane, and describe the transformation(s) involved.	6.1 13.3, 13.4, 13.5, 13.6

Patterning and Algebra

Overall Expectations	**Chapter/Section**
7m51 represent linear growing patterns (where the terms are whole numbers) using concrete materials, graphs, and algebraic expressions;	throughout Chapters 6, 12 Ch. 5/6 task
7m52 model real-life linear relationships graphically and algebraically, and solve simple algebraic equations using a variety of strategies, including inspection and guess and check.	throughout Chapters 6, 12 Ch. 5/6 task Ch. 11/12 task
Specific Expectations	**Chapter/Section**
Patterns and Relationships *7m53* represent linear growing patterns, using a variety of tools and strategies;	Throughout chapter 6
7m54 make predictions about linear growing patterns, through investigation with concrete materials;	6.2; Throughout chapter 6
7m55 develop and represent the general term of a linear growing pattern, using algebraic expressions involving one operation;	6.4
7m56 compare pattern rules that generate a pattern by adding or subtracting a constant, or multiplying or dividing by a constant, to get the next term with pattern rules that use the term number to describe the general term;	6.4

Variables, Expressions, and Equations *7m57* model real-life relationships involving constant rates where the initial condition starts at, through investigation using tables of values and graphs;	Throughout chapter 6
7m58 model real-life relationships involving constant rates, using algebraic equations with variables to represent the changing quantities in the relationship;	6.4, 12.4
7m59 translate phrases describing simple mathematical relationships into algebraic, using concrete materials;	Throughout chapter 12; Get Ready chapter 12
7m60 evaluate algebraic expressions by substituting natural numbers for the variables;	12.1
7m61 make connections between evaluating algebraic expressions and determining the term in a pattern using the general term;	Throughout chapter 6; 6.4, 12.3
7m62 solve linear equations of the form ax = c or c = ax and ax + b = c or variations such as b + ax = c and c = bx + a (where a, b, and c are natural numbers) by modelling with concrete materials, by inspection, or by guess and check, with and without the aid of a calculator;	12.2, 12.4

Data Management and Probability

Overall Expectations	Chapter/Section
7m63 collect and organize categorical, discrete, or continuous primary data and secondary data and display the data using charts and graphs, including relative frequency tables and circle graphs;	6.4 throughout Chapters 9, 10 Ch. 9/10 task
7m64 make and evaluate convincing arguments, based on the analysis of data;	throughout Chapters 9, 10 Ch. 9/10 task
7m65 compare experimental probabilities with the theoretical probability of an outcome involving two independent events.	4.4
Specific Expectations	**Chapter/Section**
Collections and Organization of Data *7m66* collect data by conducting a survey or an experiment to do with themselves, their environment, issues in their school or community, or content from another subject and record observations or measurements;	9.1 Chapter 10 Task
7m67 collect and organize categorical, discrete, or continuous primary data and secondary data and display the data in charts, tables, and graphs (including relative frequency tables and circle graphs) that have appropriate titles, labels, and scales that suit the range and distribution of the data, using a variety of tools;	Throughout chapter 9
7m68 select an appropriate type of graph to represent a set of data, graph the data using technology, and justify the choice of graph (i.e., from types of graphs already studied);	9.1, 9.2, 9.3, 9.5
7m69 distinguish between a census and a sample from a population;	

7m70 identify bias in data collection methods;	10.3, 10.4
Data Relationships *7m71* read, interpret, and draw conclusions from primary data (e.g., survey results, measurements, observations) and from secondary data presented in charts, tables, and graphs (including relative frequency tables and circle graphs);	9.1, 9.2, 9.3, 10.1
7m72 identify, through investigation, graphs that present data in misleading ways;	10.4
7m73 determine, through investigation, the effect on a measure of central tendency (i.e., mean, median, and mode) of adding or removing a value or values;	10.2, 10.3
7m74 identify and describe trends, based on the distribution of the data presented in tables and graphs, using informal language;	Throughout chapters 9, 10 Ch. 9/10 task
7m75 make inferences and convincing arguments that are based on the analysis of charts, tables, and graphs;	Throughout chapters 9, 10 Ch. 9/10 task
Probability *7m76* research and report on real-world applications of probabilities expressed in fraction, decimal, and percent form;	Throughout chapter 4; Chapter 4 Task; Making Connections Chapter 4
7m77 make predictions about a population when given a probability;	4.5
7m78 represent in a variety of ways all the possible outcomes of a probability experiment involving two independent events (i.e., one event does not affect the other event), and determine the theoretical probability of a specific outcome involving two independent events;	4.2
7m79 perform a simple probability experiment involving two independent events, and compare the experimental probability with the theoretical probability of a specific outcome.	4.2