



# Mathletics

## Manitoba Curriculum Alignment with Mathletics

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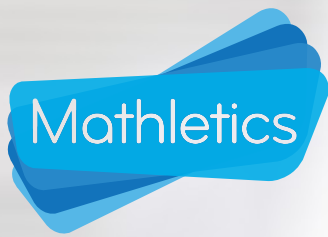
# Manitoba Curriculum

## Alignment with Mathletics

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# Manitoba Curriculum Alignment with Mathletics

## Mathletics and the Manitoba Curriculum

The education team at Mathletics is committed to providing a resource that is powerful, targeted, and, most importantly, relevant to all students.

Mathletics includes well over 1200 individual adaptive practice activities and eBooks available for all grades. Our team of educational publishers has created a course that specifically follows the Manitoba curriculum. You can be assured that students have access to relevant and targeted content.

Strands, sub-strands, and learning outcomes of the curriculum are supported with activities, each with pre and post assessment. What's more, Mathletics contains an extensive library of eBooks—for use on screen or as a printable resource—that are also mapped to the requirements of the Manitoba curriculum.

**This document outlines this mapping and acts as a useful guide when using Mathletics in your school.**

A stylized, handwritten signature in black ink.

Rene Burke  
CEO, 3P Learning Canada



Engage



Target



Diagnose



Assess



Report



Fluency




Mobile



# Manitoba Curriculum Alignment with Mathletics



## Manitoba Kindergarten

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Number	MB.K.N.1	Say the number sequence by 1s, starting anywhere from 1 to 30 and from 10 to 1.	Count to 5 Order Numbers to 10 Before, After and Between 20 1 to 30 Reading Numbers to 30 How Many? Making Teen Numbers	Kindergarten Numbers and Patterns
Number	Number	MB.K.N.2	Subitize and name familiar arrangements of 1 to 6 dots (or objects).	How Many? How Many Dots?	Kindergarten Numbers and Patterns
Number	Number	MB.K.N.3	Relate a numeral, 1 to 10, to its respective quantity.	How Many? How Many Dots?	Kindergarten Numbers and Patterns
Number	Number	MB.K.N.4	Represent and describe numbers 2 to 10 in two parts, concretely and pictorially.	How Many?	Kindergarten Numbers and Patterns
Number	Number	MB.K.N.5	Demonstrate an understanding of counting to 10.	How Many? How Many Dots?	Kindergarten Numbers and Patterns
Number	Number	MB.K.N.6	Compare quantities, 1 to 10.	More or Less? Balancing Act Balance Numbers to 10 Who has the Goods?	Kindergarten Numbers and Patterns
Patterns and Relations	Patterns	MB.K.PR.1	Demonstrate an understanding of repeating patterns (two or three elements).	Complete the Pattern Missing It! Colour Patterns Simple Patterns	Kindergarten Numbers and Patterns
Shape and Space	Measurement	MB.K.SS.1	Use direct comparison to compare two objects based on a single attribute, such as length (height), mass (weight), and volume (capacity).	Everyday Mass Which Holds More? Filling Fast! Balancing Act Same and Different Everyday Length	Kindergarten Measurement
Shape and Space	3-D Objects and 2-D Shapes	MB.K.SS.2	Sort 3-D objects using a single attribute.	Collect the Shapes Collect the Shapes 1 Collect the Objects Collect the Objects 1	Kindergarten Space and Shape



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Kindergarten



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Shape and Space	3-D Objects and 2-D Shapes	MB.K.SS.3	Build and describe 3-D objects.	Collect the Shapes Collect the Shapes 1 Collect the Objects Collect the Objects 1 Match the Solid 1 Match the Solid 2 Match the Object	Kindergarten Space and Shape



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 1

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Number Sense	MB.1.N.1	Say the number sequence by 1s forward and backward between any two given numbers (0 to 100), 2s to 30, forward starting at 0, 5s and 10s to 100, forward starting at 0	Counting Backward Counting Forward Going Up Going Down Making Big Numbers Count Counting By Twos Counting By Fives Counting By Tens Number Lines 1 to 30 Before, After and Between to 100 Matching Numbers to 20 Matching Numbers to 10 Arranging Numbers	Grade 1 Numbers
Number	Number Sense	MB.1.N.2	Subitize and name familiar arrangements of 1 to 10 dots (or objects).	How Many?	Grade 1 Numbers
Number	Number Sense	MB.1.N.3	Demonstrate an understanding of counting.	Counting Backward Counting Forward Going Up Going Down Counting By Twos Counting By Fives Counting By Tens Making Big Numbers Count 1 to 30 Number Lines Before, After and Between to 100 Matching Numbers to 20 Matching Numbers to 10 Arranging Numbers	Grade 1 Numbers
Number	Number Sense	MB.1.N.4	Represent and describe numbers to 20, concretely, pictorially, and symbolically.	Before, After and Between to 100 Matching Numbers to 20 Arranging Numbers How Many? How Many Blocks? Making Numbers Count Number Line Order	Grade 1 Numbers
Number	Number Sense	MB.1.N.5	Compare and order sets containing up to 20 elements to solve problems.	Counting by Twos Counting by Fives Counting by Tens Groups of Two Groups of Five More or Less? Comparing Groups of Objects Order Numbers to 20	Grade 1 Operations with Number







# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 1

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Number Sense	MB.1.N.6	Estimate quantities to 20 by using referents.	Under review	Grade 1 Operations with Number
Number	Number Sense	MB.1.N.7	Demonstrate, concretely and pictorially, how a number, up to 30, can be represented by a variety of equal groups with and without singles.	Making Equal Groups Divide Into Equal Groups Groups of Two Groups of Five	Grade 1 Numbers
Number	Number Sense	MB.1.N.8	Identify the number, up to 20, that is one more, two more, one less, and two less than a given number.	Before, After and Between to 20	Grade 1 Numbers
Number	Number Sense	MB.1.N.9	Demonstrate an understanding of addition of numbers with answers to 20 and their corresponding subtraction facts, concretely, pictorially, and symbolically.	Addition Facts Addition Model Addition Model Subtraction Add and Subtract Using Graphs Subtraction Facts to 18 All About Ten All About Twenty Additive Addition Simple Subtraction Problems: Add and Subtract	Grade 1 Operations with Number
Number	Number Sense	MB.1.N.10	Describe and use mental mathematics strategies.	All About Ten All About Twenty Additive Addition Composing Additions to 20 Simple Subtraction Problems: Add and Subtract Fact Families: Add and Subtract Related Facts 1 1 More, 2 less All About Ten Adding to Make 5 and 10 Adding to Ten	Grade 1 Operations with Number
Patterns and Relations	Patterns	MB.1.PR.1	Demonstrate an understanding of repeating patterns (two to four elements).	Simple Patterns Missing it! Pattern Error Increasing Patterns Decreasing Patterns Missing Values Colour Patterns Balancing Act	Grade 1 Patterns and Relationships







# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 1

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Patterns and Relations	Patterns	MB.1.PR.2	Translate repeating patterns from one representation to another.	Simple Patterns Pattern Error Increasing Patterns Decreasing Patterns Missing Values Colour Patterns Balancing Act	Grade 1 Patterns and Relationships
Patterns and Relations	Variables and Equations	MB.1.PR.3	Describe equality as a balance and inequality as an imbalance, concretely and pictorially (0 to 20).	Balance Numbers to 20 Balancing Act	
Patterns and Relations	Variables and Equations	MB.1.PR.4	Record equalities using the equal symbol (0 to 20).	More, Less or the same to 10 More, Less or the same to 20	Grade 1 Numbers
Shape and Space	Measurement	MB.1.SS.1	Demonstrate an understanding of measurement as a process of comparing.	Biggest Shape Filling Fast! Everyday Length	Grade 1 Measurement
Shape and Space	3-D Objects and 2-D Shapes	MB.1.SS.2	Sort 3-D objects and 2-D shapes using one attribute, and explain the sorting rule.	Sort it Collect the Shapes Collect the Objects Which Hold More? Collect Simple Shapes	Grade 1 Space and Shape
Shape and Space	3-D Objects and 2-D Shapes	MB.1.SS.3	Replicate composite 2-D shapes and 3-D objects.	Sort it Collect the Shapes Collect the Objects	Grade 1 Space and Shape
Shape and Space	3-D Objects and 2-D Shapes	MB.1.SS.4	Compare 2-D shapes to parts of 3-D objects in the environment.	Match the Solid 1 Match the Object	Grade 1 Space and Shape



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 2



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Number Sense	MB.2.N.1	Say the number sequence from 0 to 100.	Counting by Twos Counting by Fives Counting by Tens Going Up Number Line Order Going Down Skip Counting Skip Counting with Coins Everyday Money	Grade 2 Numbers
Number	Number Sense	MB.2.N.2	Demonstrate if a number (up to 100) is even or odd.	Odd and Even Numbers 1	Grade 2 Numbers Grade 2 Patterns and Relationships
Number	Number Sense	MB.2.N.3	Describe order or relative position using ordinal numbers.	1st to 31st Ordinal Numbers	Grade 2 Numbers
Number	Number Sense	MB.2.N.4	Represent and describe numbers to 100, concretely, pictorially, and symbolically.	Reading Numbers to 30 Model Numbers	Grade 2 Numbers
Number	Number Sense	MB.2.N.5	Compare and order numbers up to 100.	Arranging Numbers Number Line Order Place Value 1 Number Lines Model Numbers Understanding Place Value 1	Grade 2 Numbers
Number	Number Sense	MB.2.N.6	Estimate quantities to 100 using referents.	Under Review	Grade 2 Operations with Number
Number	Number Sense	MB.2.N.7	Illustrate, concretely and pictorially, the meaning of place value for numbers to 100.	Arranging Numbers Number Line Order Making Numbers Count Making Big Numbers Count Understanding Place Value 1	Grade 2 Numbers
Number	Number Sense	MB.2.N.8	Demonstrate and explain the effect of adding zero to or subtracting zero from any number.	Concept of Zero	Grade 2 Numbers



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 2



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Number Sense	MB.2.N.9	Demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction.	Model Addition Additive Addition Simple Subtraction Commutative Property of Addition Add Two 2-Digit Numbers Adding in Any Order Bar Model Problems 1 Add Three 1-Digit Numbers Subtract Numbers Subtract Numbers: Regroup Complements to 10, 20, 50	Grade 2 Operations with Number
Number	Number Sense	MB.2N.10	Apply mental mathematics strategies.	Related Facts 1 Compensation - Add Compensation - Subtract Add Numbers: Regroup a Ten Add 3 Numbers Using Bonds to 10 Making Equal Groups Adding in Any Order Commutative Property of Addition How Much Change? Doubles and Near Doubles Doubles and Halves to 10 Doubles and Halves to 20	Grade 2 Operations with Number
Patterns and Relations	Patterns	MB.2.PR.1	Predict an element in a repeating pattern using a variety of strategies.	Simple Patterns Pattern Error Increasing Patterns Describing Patterns Decreasing Patterns Missing Values Colour Patterns Count Backward Patterns Count Forward Patterns	Grade 2 Patterns and Relationships
Patterns and Relations	Patterns	MB.2.PR.2	Demonstrate an understanding of increasing patterns.	Count Forward Patterns Simple Patterns Pattern Error Increasing Patterns Colour Patterns	Grade 2 Patterns and Relationships



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 2



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Patterns and Relations	Variables and Equations	MB.2.PR.3	Demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100).	Missing Values Balancing Act	Under review
Patterns and Relations	Variables and Equations	MB.2.PR.4	Record equalities and inequalities symbolically using the equal symbol or the not equal symbol.	Compare Numbers to 20 Compare Numbers to 100	Grade 2 Numbers
Shape and Space	Measurement	MB.2.SS.1	Relate the number of days to a week and the number of months to a year in a problem-solving context.	Days of the Week Months of the Year Using a Calendar	Grade 2 Time and Monday
Shape and Space	Measurement	MB.2.SS.2	Relate the size of a unit of measure to the number of units (limited to non-standard units) used to measure length and mass (weight).	Measuring Length with Blocks Everyday Length Comparing Length Balancing Act Everyday Mass How Long is That?	Grade 2 Measurement
Shape and Space	Measurement	MB.2.SS.3	Compare and order objects by length, height, distance around and mass using non-standard units and make statements of comparison.	Measuring Length with Blocks Comparing Length	Grade 2 Measurement
Shape and Space	Measurement	MB.2.SS.4	Measure length to the nearest non-standard unit.	Measuring Length with Blocks Balancing Act	Grade 2 Measurement
Shape and Space	Measurement	MB.2.SS.5	Demonstrate that changing the orientation of an object does not alter the measurements of its attributes.	Under Review	Under Review
Shape and Space	3-D Objects and 2-D Shapes	MB.2.SS.6	Sort 2-D shapes and 3-D objects using two attributes, and explain the sorting rule.	Under Review	Under Review
Shape and Space	3-D Objects and 2-D Shapes	MB.2.SS.7	Describe, compare, and construct 3-D objects.	Sort It Collect Simple Shapes Collect the Shapes Collect the Shapes 1 Collect the Shapes 2 Collect the Objects Collect the Objects 1 Collect the Objects 2	Grade 2 Space and Shape



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 2


Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Shape and Space	3-D Objects and 2-D Shapes	MB.2.SS.8	Describe, compare, and construct 2-D shapes.	Sort It Collect Simple Shapes Collect the Shapes Collect the Shapes 1 Collect the Shapes 2 Collect the Objects Collect the Objects 1 Collect the Objects 2	Grade 2 Space and Shape
Shape and Space	3-D Objects and 2-D Shapes	MB.2.SS.9	Identify 2-D shapes as parts of 3-D objects in the environment.	Sort It Collect Simple Shapes Collect the Shapes Collect the Shapes 1 Collect the Shapes 2 Collect the Objects Collect the Objects 1 Collect the Objects 2 Relate Shapes and Solids	Grade 2 Space and Shape
Shape and Space	Data Analysis	MB.2.SP.1	Gather and record data about self and others to answer questions.	Under review	Grade 2 Space and Shape
Statistics and Probability	Data Analysis	MB.2.SP.2	Construct and interpret concrete graphs and pictographs to solve problems.	Tallies Making Graphs Sorting Data Add and Subtract Using Graphs Pictographs	Grade 2 Chance and Data



# Manitoba Curriculum

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### Manitoba Grade 3

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Number Sense	MB.3.N.1	Say the number sequence from 0 to 1000.	Counting by Fives Counting by Tens Skip Counting Money Who has the Money? Skip Counting with Coins	Grade 2 Numbers
Number	Number Sense	MB.3.N.2	Represent and describe numbers to 1000, concretely, pictorially, and symbolically.	Model Numbers How many Blocks?	Grade 3 Reading and Understanding Whole Numbers
Number	Number Sense	MB.3.N.3	Compare and order numbers to 1000.	Which is Bigger? Which is Smaller? Compare Numbers to 100 Ascending Order Descending Order	Grade 3 Reading and Understanding Whole Numbers
Number	Number Sense	MB.3.N.4	Estimate quantities less than 1000 using referents.	Nearest 10? Nearest 100?	Under review
Number	Number Sense	MB.3.N.5	Illustrate, concretely and pictorially, the meaning of place value for numerals to 1000.	How many Blocks? Model Numbers Understanding Place Value 1 Place value 2	Grade 3 Reading and Understanding Whole Numbers
Number	Number Sense	MB.3.N.6	Describe and apply mental mathematics strategies for adding two 2-digit numerals.	Add Two 2-Digit Numbers Add Two 2-Digit Numbers: Regroup Complements to 50 and 100 Columns that Add Magic Mental Addition Column Addition Add Numbers: Regroup a Ten Strategies for Column Addition Addition Properties Fact Families: Add and Subtract	Grade 3 Addition and Subtraction
Number	Number Sense	MB.3.N.7	Describe and apply mental mathematics strategies for subtracting two 2-digit numerals.	2-Digit Differences 2-Digit Differences: Regroup Subtract Numbers: Regroup Subtraction Facts to 18 Subtract Numbers Decompose Numbers to Subtract Columns that Subtract Column Subtraction Magic Mental Subtraction	Grade 3 Addition and Subtraction



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 3

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Number Sense	MB.3.N.8	Apply estimation strategies to predict sums and differences of two 2-digit numerals in a problem-solving context.	Estimation: Add and Subtract Estimate Sums Estimate Differences	Grade 3 Addition and Subtraction
Number	Number Sense	MB.3.N.9	Demonstrate an understanding of addition and subtraction of numbers with answers to 1000 (limited to 1-, 2-, and 3-digit numerals).	Add Two 2-Digit numbers 2-Digit Differences Problems: Add and Subtract	Grade 3 Addition and Subtraction
Number	Number Sense	MB.3.N.10	Apply mental math strategies to determine addition facts and related subtraction facts (to 18).	Addition Properties Subtraction Facts to 18 Commutative Property of Addition Facts Fact Families: Add and Subtract Related Facts 1	Grade 3 Addition and Subtraction
Number	Number Sense	MB.3.N.11	Demonstrate an understanding of multiplication to $5 \times 5$ .	Multiplication Arrays Multiplication Facts Groups of Two Groups of Three Groups of Four Groups of Five	Grade 3 Multiplication and Division
Number	Number Sense	MB.3.N.12	Demonstrate an understanding of division.	Fill the Jars Making Equal Groups Divide Into Equal Groups Dividing Twos Dividing Threes Dividing Fours Dividing Fives	Grade 3 Multiplication and Division
Number	Number Sense	MB.3.N.13	Demonstrate an understanding of fractions.	Shape Fractions Model Fractions Compare Fractions 1a Compare Fractions 1b Halves and Quarters Thirds and Sixths Is it Half?	Grade 3 Fractions
Patterns and Relations	Patterns	MB.3.PR.1	Demonstrate an understanding of increasing patterns.	Simple Patterns Pattern Error Increasing Patterns Colour Patterns Count Forward Patterns Describing Patterns	Grade 3 Patterns and Relationships







# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 3



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Patterns and Relations	Patterns	MB.3.PR.2	Demonstrate an understanding of decreasing patterns.	Simple Patterns Pattern Error Describing Patterns Decreasing Patterns Colour Patterns Count Backward Patterns	Grade 3 Patterns and Relationships
Patterns and Relations	Variables and Equations	MB.3.PR.3	Solve one-step addition and subtraction equations involving symbols representing an unknown number.	Problems: Add and Subtract Word Problems with Letters Bar Model Problems 1 Bar Model Problems 2 Missing Values	Grade 3 Addition and Subtraction
Shape and Space	Measurement	MB.3.SS.1	Relate the passage of time to common activities using non-standard and standard units (minutes, hours, days, weeks, months, years).	Days of the Week Months of the Year Hour Times Half Hour Times What is the Time? Time Mentals Elapsed Time What Time Will it Be? Tell Time to the Half Hour Five Minute Times	Grade 3 Time
Shape and Space	Measurement	MB.3.SS.2	Relate the number of seconds to a minute, the number of minutes to an hour, and the number of days to a month in a problem-solving context.	Using a Calendar	Grade 3 Time
Shape and Space	Measurement	MB.3.SS.3	Demonstrate an understanding of measuring length (cm, m).	Comparing Length Everyday Length Measuring Length How Long is That? Compare Length Compare Length 1	Grade 3 Measurement
Shape and Space	Measurement	MB.3.SS.4	Demonstrate an understanding of measuring mass (g, kg).	How Heavy? Everyday Mass	Grade 3 Measurement
Shape and Space	Measurement	MB.3.SS.5	Demonstrate an understanding of perimeter of regular and irregular shapes.	Perimeter of Shapes Perimeter	Grade 3 Measurement
Shape and Space	3-D Objects and 2-D Shapes	MB.3.SS.6	Describe 3-D objects according to the shape of the faces, and the number of edges and vertices.	How many Faces? How many Edges? How many Corners? Faces, Edges and Vertices	Grade 3 Space, Shape and Position



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 3



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Shape and Space	3-D Objects and 2-D Shapes	MB.3.SS.7	Sort regular and irregular polygons.	Collect the Shapes 2 Collect the Polygons	Grade 3 Space, Shape and Position
Statistics and Probability	Data Analysis	MB.3.SP.1	Collect first-hand data and organize it.	Sorting Data 1 Tallies Bar Graphs 1 Bar Graphs 2 Interpreting Tables Line Graphs: Interpretation Line Graphs: Interpretation 1	Grade 3 Chance and Data
Statistics and Probability	Data Analysis	MB.3.SP.1	Construct, label, and interpret bar graphs to solve problems.	Sorting Data 1 Tallies Bar Graphs 1 Interpreting Tables Line Graphs: Interpretation Bar Graphs 2	Grade 3 Chance and Data



# Manitoba Curriculum

## Alignment with Mathletics



### Manitoba Grade 4

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop number sense	MB.4.N.1	Represent and describe whole numbers to 10 000, pictorially and symbolically.	Expanded Notation Understanding Place Value 2 Partition and rename 1 Partition and rename 2 Place Value to Thousands Expanding Numbers Numbers from Words to Digits 1 Numbers from Words to Digits 2	Grade 4 Reading and Understanding Whole Numbers
Number	Develop number sense	MB.4.N.2	Compare and order numbers to 10 000.	Greater Than or Less Than? Ascending Order Descending Order Which is Greater? Which is Less?	Grade 4 Reading and Understanding Whole Numbers
Number	Develop number sense	MB.4.N.3	Demonstrate an understanding of addition of numbers with answers to 10 000 and their corresponding subtractions (limited to 3- and 4-digit numerals), concretely, pictorially, and symbolically.	Adding Colossal Columns Estimation: Add and Subtract Add Three 2-Digit Numbers Add Three 2-Digit Numbers: Regroup Add 3-Digit Numbers Add 3-Digit Numbers: Regroup Add Multi-Digit Numbers 1 Add Three 3-Digit Numbers: Regroup Subtracting Colossal Columns 3-Digit Differences 3-Digit Differences: 1 Regrouping 3-Digit Differences: 2 Regroupings 3-Digit Differences with Zeros Budgeting Estimate Differences Estimate Sums	Grade 4 Addition and Subtraction
Number	Develop number sense	MB.4.N.4	Explain the properties of 0 and 1 for multiplication, and the property of 1 for division.	Under review	Under review



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 4



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop number sense	MB.4.N.5	Describe and apply mental mathematics strategies to develop an understanding of basic multiplication facts to $9 \times 9$ and related division facts.	Dividing Twos Dividing Fives Dividing Tens Dividing Threes Dividing Fours Dividing Sixes Dividing Sevens Dividing Eights Dividing Nines Problems: Multiply and Divide Problems: Times and Divide Short Division Divide: 1-Digit Divisor 2 Long Division Divisibility Tests Divide: 1-Digit Divisor, Remainder Divide: 1-Digit Divisor 1	Grade 4 Multiplication and Division
Number	Develop number sense	MB.4.N.6	Demonstrate an understanding of multiplication (2- or 3-digit numerals by 1-digit numerals) to solve problems.	Multiplication Arrays Fact Families: Multiply and Divide Problems: Multiply and Divide Multiply and Divide Problems 1 Multiply Multiples of 10 Multiply More Multiples of 10 Multiply: 1-Digit Number, Regroup Groups of Ten Multiplication Facts Times Tables Multiplication Properties Multiply: 1-Digit Number Multiply: 2-Digit by 1-Digit Multiply: 2-Digit Number, Regroup Groups of Six Groups of Seven Groups of Eight Groups of Nine	Grade 4 Multiplication and Division



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 4



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop number sense	MB.4.N.7	Demonstrate an understanding of division (1-digit divisor and up to 2-digit dividend) to solve problems.	Division Facts Remainders by Arrays Divide: 1-Digit Divisor 1 Divide: 1-Digit Divisor 2 Divide: 1-Digit Divisor, Remainder Estimation: Multiply and Divide Dividing Twos Dividing Threes Dividing Fours Dividing Fives Dividing Sixes Dividing Sevens Dividing Eights Dividing Nines Dividing Tens Times Tables	Grade 4 Multiplication and Division
Number	Develop number sense	MB.4.N.8	Demonstrate an understanding of fractions less than or equal to one by using concrete and pictorial representations.	Partition into Equal Parts Fractions of a Collection Fraction Fruit Sets 1 Equivalent Fraction Wall 1 Fractions to Decimals Counting with Fractions on a Number Line Identifying Fractions on a Number Line What Fraction is Shaded? Equivalent Fractions Compare Fractions 2 Comparing Fractions 1 Ordering Fractions	Grade 4 Fractions
Number	Develop number sense	MB.4.N.9	Describe and represent decimals (tenths and hundredths) concretely, pictorially, and symbolically.	Decimals from Words to Digits 1 Decimal Order 1 Decimals on the Number Line Decimal Place Value Comparing Decimals 1	Grade 4 Fractions
Number	Develop number sense	MB.4.N.10	Relate decimals to fractions (to hundredths).	Decimals to Fractions 1 Decimals to Fractions 2 Fractions to Decimals	Grade 4 Fractions
Number	Develop number sense	MB.4.N.11	Demonstrate an understanding of addition and subtraction of decimals (limited to hundredths).	Add Decimals 1 Nearest Whole Number Rounding Decimals 1 Decimal Complements Subtract Decimals 1	Grade 4 Fractions



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 4



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Patterns and Relations	Use patterns to describe the world and solve problems	MB.4.PR.1	Identify and describe patterns found in tables and charts, including a multiplication chart.	Increasing Patterns Decreasing Patterns Missing it! Pick the Next Number Describing Patterns Pattern Error	Grade 4 Patterns and Algebra
Patterns and Relations	Use patterns to describe the world and solve problems	MB.4.PR.2	Reproduce a pattern shown in a table or chart using concrete materials.	Increasing Patterns Decreasing Patterns Missing it! Pick the Next Number Describing Patterns Pattern Error Caroll Diagram	Grade 4 Patterns and Algebra
Patterns and Relations	Use patterns to describe the world and solve problems	MB.4.PR.3	Represent and describe patterns and relationships using charts and tables to solve problems.	Increasing Patterns Decreasing Patterns Missing it! Pick the Next Number Describing Patterns Pattern Error Caroll Diagram	Grade 4 Patterns and Algebra
Patterns and Relations	Use patterns to describe the world and solve problems	MB.4.PR.4	Identify and explain mathematical relationships using charts and diagrams to solve problems.	Venn Diagram1 Caroll Diagram	Under review
Patterns and Relations	Represent algebraic expressions in multiple ways	MB.4.PR.5	Express a problem as an equation in which a symbol is used to represent an unknown number.	Missing Values Missing Values: Decimals Find the Missing Number 1 I am Thinking of a Number! Missing Numbers: Variables	Grade 4 Patterns and Algebra
Patterns and Relations	Represent algebraic expressions in multiple ways	MB.4.PR.6	Solve one-step equations involving a symbol to represent an unknown number.	Problems: Multiply and Divide 1 Problems: Add and Subtract 2	Grade 4 Patterns and Algebra
Shape and Space	Measurement	MB.4.SS.1	Read and record time using digital and analog clocks, including 24-hour clocks.	What is the Time? Time Mentals Elapsed Time 24 Hour Time What Time Will it Be? Hours and Minutes Five Minute Times	Grade 4 Time



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 4

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Shape and Space	Use direct or indirect measurement to solve problems	MB.4.SS.2	Read and record calendar dates in a variety of formats.	Using a Calendar	Grade 4 Time
Shape and Space	Use direct or indirect measurement to solve problems	MB.4.SS.3	Demonstrate an understanding of area of regular and irregular 2-D shapes.	Area of Shapes Equal Areas Area: Squares and Rectangles	Grade 4 Length, Area and Perimeter
Shape and Space	Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them	MB.4.SS.4	Solve problems involving 2-D shapes and 3-D objects.	Area of Shapes Equal Areas Area: Squares and Rectangles	Grade 4 Length, Area and Perimeter
Shape and Space	Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them	MB.4.SS.5	Describe and construct rectangular and triangular prisms.	How Many Faces? How Many Edges? How Many Corners? What Prism am I? Faces, Edges and Vertices Faces, Edges and Vertices 1	Grade 4 Shape, Space and Position
Shape and Space	Describe and analyze position and motion of objects and shapes	MB.4.SS.6	Demonstrate an understanding of line symmetry.	Symmetry Symmetry or Not?	Grade 4 Shape, Space and Position
Statistics and Probability	Collect, display, and analyze data to solve problems	MB.4.SP.1	Demonstrate an understanding of many-to-one correspondence.	Under review	Under review
Statistics and Probability	Collect, display, and analyze data to solve problems	MB.4.SP.2	Construct and interpret pictographs and bar graphs involving many-to-one correspondence to draw conclusions.	Bar Graphs 1 Bar Graphs 2 Pictographs Divided Bar Graphs Reading from a Bar Chart	Grade 4 Chance and Data







# Manitoba Curriculum

## Alignment with Mathletics



### Manitoba Grade 5

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop Number Sense	MB.5.N.1	Represent and describe whole numbers to 1 000 000.	Numbers in Words Numbers from Words to Digits 1 Numbers from Words to Digits 2 Numbers from Words to Digits 3 Place Value to Millions Expanding Numbers Partition and rename 3 Expanded Notation Rounding Numbers Nearest 100? Nearest Thousand? Nearest Whole Number Place Value 3	Grade 5 Reading and Understanding Whole Numbers
Number	Develop Number Sense	MB.5.N.2	Apply estimation strategies in problem solving contexts.	Estimation: Add and Subtract Estimation: Multiply and Divide Estimate Products Estimate Sums Estimate Differences Estimate Quotients Estimate Decimal Differences 1 Estimate Decimal Sums 1 Estimate Decimal Differences 2 Estimate Decimal Sums 2	Grade 5 Reading and Understanding Whole Numbers
Number	Develop Number Sense	MB.5.N.3	Apply mental math strategies to determine multiplication and related division facts to 81 ( $9 \times 9$ ).	Multiplication Arrays Multiplication Facts Multiplication Properties Mental Methods Multiplication Division Facts Related Facts 2	Grade 5 Multiplication and Division
Number	Develop Number Sense	MB.5.N.4	Apply mental mathematics strategies for multiplication.	Multiplying by 10, 100, 1000 Multiplication Arrays Double and Halve to Multiply Multiply 2 Digits Area Model Multiplication Facts Multiplication Properties Mental Methods Multiplication Mental Methods Multiplication 2 Mental Methods Multiplication 3	Grade 5 Multiplication and Division
Number	Develop Number Sense	MB.5.N.5	Demonstrate an understanding of multiplication (1- and 2-digit multipliers and up to 4-digit multiplicands), concretely, pictorially, and symbolically.	Multiply: 1-Digit Number Multiply: 1-Digit Number, Regroup Multiply: 2-Digit by 1-Digit Multiply: 2-Digit Number, Regroup	Grade 5 Multiplication and Division



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 5



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop Number Sense	MB.5.N.6	Demonstrate an understanding of division (1- and 2-digit divisors and up to 4-digit dividends), concretely, pictorially, and symbolically, and interpret remainders.	Division Facts Mental Methods Division Mental Methods Division 1 Mental Methods Division 2 Divide: 1-Digit Divisor 1 Divide: 1-Digit Divisor 2 Divide: 1-Digit Divisor, Remainder Compatible Numbers Divisibility Tests Tests of Divisibility 1 Divisibility Tests (2, 5, 10) Divisibility Tests (3, 4, 9) Remainders by Arrays Short Division	Grade 5 Multiplication and Division
Number	Develop Number Sense	MB.5.N.7	Demonstrate an understanding of fractions by using concrete and pictorial representations.	Shading Equivalent Fractions Ordering Fractions Simplifying Fractions Decimals to Fractions 1 Decimals to Fractions 2 Comparing Fractions 1 Comparing Fractions 2 Equivalent Fractions Equivalent Fraction Wall 2 Fraction Fruit Sets 2 Equivalent Fractions on a Number Line 2	Grade 5 Fractions, Decimals and Percentages
Number	Develop Number Sense	MB.5.N.8	Describe and represent decimals (tenths, hundredths, thousandths) concretely, pictorially, and symbolically.	Rounding Decimals Rounding Decimals 1 Rounding Decimals 2 Decimal Complements Decimals on a Number Line Decimals on the Number Line Decimals from Words to Digits 2 Decimal Place Value	Grade 5 Fractions, Decimals and Percentages



# Manitoba Curriculum

## Alignment with Mathletics



### Manitoba Grade 5

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop Number Sense	MB.5.N.9	Relate decimals to fractions (tenths, hundredths, thousandths).	Decimals to Fractions 1 Decimals to Fractions 2 Fractions to Decimals Fractions to Decimals 2 Fraction to Terminating Decimal	Grade 5 Fractions, Decimals and Percentages
Number	Develop Number Sense	MB.5.N.10	Compare and order decimals (tenths, hundredths, thousandths).	Decimal Order Comparing Decimals Comparing Decimals 1 Comparing Decimals 2	Grade 5 Fractions, Decimals and Percentages
Number	Develop Number Sense	MB.5.N.11	Demonstrate an understanding of addition and subtraction of decimals (limited to thousandths).	Subtract Decimals 1 Subtract Decimals 2 Subtracting Decimals Add Decimals 1 Add Decimals 2 Adding and Subtracting Decimals Adding Decimals	Grade 5 Fractions, Decimals and Percentages
Patterns and Relations	Patterns	MB.5.PR.1	Determine the pattern rule to make predictions about subsequent elements.	Describing Patterns I am Thinking of a Number! Pattern Error	Grade 5 Patterns and Algebra
Patterns and Relations	Variables and Equations	MB.5.PR.2	Solve problems involving single-variable (expressed as symbols or letters), one-step equations with whole-number coefficients, and whole-number solutions.	Solve Equations: Add, Subtract 1 Solve Equations: Multiply, Divide 1 Problems: Multiply and Divide 1 Problems: Add and Subtract 1 Find the Missing Number 1 Find the Missing Number 2 Missing Values Missing Numbers	Grade 5 Patterns and Algebra
Shape and Space	Measurement	MB.5.SS.1	Design and construct different rectangles given either perimeter or area, or both (whole numbers), and draw conclusions.	Perimeter of Shapes Perimeter Perimeter: Squares and Rectangles Perimeter Detectives 1 Perimeter, Area, Dimension Change Equal Areas Areas of Shapes	Grade 5 Length, Perimeter and Area
Shape and Space	Measurement	MB.5.SS.2	Demonstrate an understanding of measuring length (mm).	Converting cm and mm Converting Units of Length Centimetres and Metres Measuring Length	Grade 5 Length, Perimeter and Area



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 5



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Shape and Space	Measurement	MB.5.SS.3	Demonstrate an understanding of volume.	Volume: Cuboid 1 Volume: Rectangular Prisms 1	Grade 5 Volume, Capacity and Mass
Shape and Space	Measurement	MB.5.SS.4	Demonstrate an understanding of capacity.	Millilitres and Litres Capacity Word Problems	Grade 5 Volume, Capacity and Mass
Shape and Space	3-D Objects and 2-D Shapes	MB.5.SS.5	Describe and provide examples of edges and faces of 3-D objects, and sides of 2-D shapes.	Faces, Edges and Vertices 1 Faces, Edged and Vertices 1	Grade 5 Geometry
Shape and Space	3-D Objects and 2-D Shapes	MB.5.SS.6	Identify and sort quadrilaterals.	Collect the Shapes 2 Collect the Objects 2 Collect the Polygons Shapes	Grade 5 Geometry
Shape and Space	3-D Objects and 2-D Shapes	MB.5.SS.7	Perform a single transformation (translation, rotation, or reflection) of a 2-D shape, and draw and describe the image.	Transformations Flip, Slide, Turn	Grade 5 Geometry
Shape and Space	3-D Objects and 2-D Shapes	MB.5.SS.8	Identify a single transformation (translation, rotation, or reflection) of 2-D shapes.	Transformations Flip, Slide, Turn	Grade 5 Geometry
Statistics and Probability	Data Analysis	MB.5.SP.1	Differentiate between first-hand and second-hand data.	Under Review	Grade 5 Chance and Data
Statistics and Probability	Data Analysis	MB.5.SP.2	Construct and interpret double bar graphs to draw conclusion.	Bar Graphs 2 Interpreting Tables	Grade 5 Chance and Data
Statistics and Probability	Chance and Uncertainty	MB.5.SP.3	Describe the likelihood of a single outcome occurring.	What are the Chances? How many Combinations? Most Likely and Least Likely Possible Outcomes Fair Games	Grade 5 Chance and Data
Statistics and Probability	Chance and Uncertainty	MB.5.SP.4	Compare the likelihood of two possible outcomes occurring.	What are the Chances? How many Combinations? Most Likely and Least Likely Possible Outcomes Fair Games	Grade 5 Chance and Data



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 6



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Place Value	MB.6.N.1	Demonstrate an understanding of place value for numbers.	Place Value to Billions Place value 3 Comparing Numbers Decimal Order 1 Decimal Order 2 Comparing Decimals 2 Understanding Place Value 3 Numbers from Words to Digits 3	Grade 6 Reading and Understanding Whole Numbers
Number	Place Value	MB.6.N.2	Solve problems involving large numbers.	Estimate Decimal Differences 2 Estimate Decimal Sums 2 Estimate Sums Estimate Products Estimate Quotients Estimate Decimal Operations Estimate Differences Adding Colossal Columns Subtracting Colossal Columns Long Multiplication Multiplying by 10, 100, and 1000 Dividing by 10, 100, 1000 Rounding Numbers Order of Operations 1 (BEDMAS)	Grade 6 Fractions, Decimals and Percentages
Number	Factors and Multiples	MB.6.N.3	Demonstrate an understanding of factors and multiples.	Least Common Multiple Multiples Product of Prime Factors Factors Find the Factor Greatest Common Factor Prime or Composite? Prime Factoring	Grade 7 Whole Numbers
Number	Improper Fractions Mixed Numbers	MB.6.N.4	Relate improper fractions to mixed numbers.	Converting Mixed and Improper Mixed to Improper Improper to Mixed Comparing Fractions 2 Identifying fractions beyond 1 Mixed and Improper Numbers on a Number Line What Mixed Number is Shaded?	Grade 6 Fractions, Decimals and Percentages



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 6

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Ratios	MB.6.N.5	Demonstrate an understanding of ratio, concretely, pictorially, and symbolically.	Ratio Ratios Equivalent Ratios Dividing a Quantity in a Ratio Ratio Word Problems Ratio and Proportion Solve Proportions Unitary Method Best Buy Fractions to Decimals Fractions to Decimals 2	Grade 9 Decimals
Number	Percents	MB.6.N.6	Demonstrate an understanding of percent (limited to whole numbers), concretely, pictorially, and symbolically.	Calculating Percentages Percent of a Number Decimal to Percentage Percents and Decimals Percentage of a Quantity Percents to Fractions Percent Increase and Decrease Percentage Composition Percentage Word Problems Solve Percent Equations Modelling Percentages Match Decimals and Percentages What Percentage?	Grade 6 Fractions, Decimals and Percentages
Number	Integers	MB.6.N.7	Demonstrate an understanding of integers, concretely, pictorially, and symbolically.	Integers: Add and Subtract Add Integers Ordering Integers Comparing Integers More with Integers Integers on a Number Line Integers: Order of Operations (BEDMAS) Order of Operations 1 (BEMAS) Subtract Integers	Grade 7 Directed Numbers







# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 6



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Decimals	MB.6.N.8	Demonstrate an understanding of multiplication and division of decimals (involving 1-digit whole-number multipliers, 1-digit natural number divisors, and multipliers and divisors that are multiples of 10), concretely, pictorially, and symbolically.	Decimal by Whole Number Multiply Decimals and Powers of 10 Multiply Decimals: 10, 100, 1000 Divide Decimals: 10, 100, 1000 Divide by Powers of 10 Divide Decimal by Whole Number Decimal by Whole Number Missing Values: Decimals Rounding Decimals 1 Rounding Decimals 2	Grade 6 Multiplication and Division
Number	Number	MB.6.N.9	Explain and apply the order of operations, excluding exponents (limited to whole numbers).	Integers: Order of Operations (BEDMAS) Order of Operations 1: (BEDMAS)	Under review
Patterns and Relations	Patterns	MB.6.PR.1	Demonstrate an understanding of the relationships within tables of values to solve problems.	Table of Values Find the Pattern Rule Find the Function Rule Pattern Rules and Tables Function Rules and Tables	Grade 6 Patterns and Algebra
Patterns and Relations	Patterns	MB.6.PR.2	Represent and describe patterns and relationships using graphs and tables.	Ordered Pairs Coordinate Graphs Coordinate Graphs: 1st Quadrant Graphing from a Table of Values	Grade 6 Position Grade 7 The Number Plane
Patterns and Relations	Variables and Equations	MB.6.PR.3	Represent generalizations arising from number relationships using equations with letter variables.	Commutative Property of Addition Multiplication Properties Write an Equation: Word Problems Writing Equations Writing Algebraic Expressions Solving Simple Equations Missing Numbers: Variables Magic Symbols 2 Pyramid Puzzles 2	Grade 6 Patterns and Algebra
Patterns and Relations	Variables and Equations	MB.6.PR.4	Demonstrate and explain the meaning of preservation of equality.	Writing Equations Writing Algebraic Expressions Write an Equation: Word Problems	Grade 6 Patterns and Algebra





# Manitoba Curriculum Alignment with Mathletics



## Manitoba Grade 6

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Shape and Space	Measurement	MB.6.SS.1	Demonstrate an understanding of angles.	Equal Angles Comparing Angles Classifying Angles Measuring Angles Estimating Angles Labelling Angles Triangles: Acute, Right, Obtuse	Grade 6 Geometry
Shape and Space	Measurement	MB.6.SS.2	Sum of interior angles is the same for all triangles and quadrilaterals.	Angle Sum of a Triangle Angle Measures in a Triangle Angle Sum of a Quadrilateral	Grade 7 Angles and Polygons
Shape and Space	Measurement	MB.6.SS.3	Develop and apply a formula for determining the perimeter of polygons, area of rectangles and volume of right rectangular prisms.	Perimeter: Squares and Rectangles Perimeter: Composite Shapes Perimeter Detectives 1 Perimeter Detectives 2 Perimeter: Triangles Perimeter: Triangles 2 Area: Squares and Rectangles Area: Squares and Rectangles 1 Area: Squares and Rectangles 2 Volume: Rectangular Prisms 2 Volume: Rectangular Prisms 1	Grade 6 Length, Perimeter and Area Grade 6 Volume, Capacity and Mass
Shape and Space	3-D Objects and 2-D Shapes	MB.6.SS.4	Construct and compare triangles.	Angle Sum of a Triangle Angle Measures in a Triangle	Grade 7 Angles and Polygons
Shape and Space	3-D Objects and 2-D Shapes	MB.6.SS.5	Describe and compare the sides and angles of regular and irregular polygons.	Under review	Grade 6 Geometry
Shape and Space	Transformations	MB.6.SS.6	Perform a combination of transformations (translations, rotations, or reflections) on a single 2-D shape, and draw and describe the image.	Congruent Figures	Grade 6 Geometry
Shape and Space	Transformations	MB.6.SS.7	Perform a combination of successive transformations of 2-D shapes to create a design, and identify and describe the transformations.	Flip, Slide, Turn Transformations	Grade 6 Geometry



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 6



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Shape and Space	Transformations	MB.6.SS.8	Identify and plot points in the first quadrant of a Cartesian plane using whole-number ordered pairs.	Ordered Pairs Coordinate Graphs Coordinate Graphs: 1st Quadrant	Grade 6 Position Grade 7 The Number Plane
Shape and Space	Transformations	MB.6.SS.9	Perform and describe single transformations of a 2-D shape in the first quadrant of a Cartesian plane (limited to whole-number vertices).	Transformations: Coordinate Plane	Grade 6 Position Grade 7 The Number Plane
Statistics and Probability	Data Analysis	MB.6.SP.1	Create, label, and interpret line graphs to draw conclusions.	Line Graphs: Interpretation	Grade 6 Position Grade 7 The Number Plane
Statistics and Probability	Data Analysis	MB.6.SP.2	Select, justify, and use appropriate methods of collecting data.	Under review	Under review
Statistics and Probability	Data Analysis	MB.6.SP.3	Graph collected data and analyze the graph to solve problems.	Pie Charts Pie Chart Calculations Circle Graphs Stem and Leaf Introduction Bar Graphs 1 Column Graphs Bar Graphs 2 Divided Bar Graphs Compound Bar Chart Stem-and-Leaf Plots	Grade 9 Data
Statistics and Probability	Chance and Uncertainty	MB.6.SP.4	Demonstrate an understanding of probability.	What are the Chances? Will it Happen? Probability Scale	Grade 6 Chance and Probability Grade 7 Chance



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 7



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop Number Sense	MB.7.N.1	Determine and explain why a number is divisible by 2, 3, 4, 5, 6, 8, 9, or 10, and why a number cannot be divided by 0.	Divisibility Tests Divisibility Tests (2, 5, 10) Divisibility Tests (3, 4, 9) Product of Prime Factors Factors Tests of Divisibility 1 Prime or Composite? Greatest Common Factor	Under review
Number	Develop Number Sense	MB.7.N.2	Demonstrate an understanding of the addition, subtraction, multiplication, and division of decimals to solve problems (for more than 1-digit divisors or 2-digit multipliers, technology could be used).	Adding Decimals Add Decimals 2 Subtract Decimals 1 Decimal Complements Subtract Decimals 2 Multiply Decimals: 10, 100, 1000 Divide Decimals: 10, 100, 1000 Divide Decimal by Whole Number Multiply Decimals and Powers of 10 Missing Values: Decimals Adding and Subtracting Decimals Decimal by Whole Number Decimal by Decimal Divide Decimal by Decimal Divide by Powers of 10 Estimate Decimal Sums 1 Estimate Decimals Sums 2 Estimate Decimal Differences 1 Estimate Decimal Differences 2 Rounding Decimals Rounding Decimals 1 Rounding Decimals 2 Estimate Decimal Operations	Grade 7 Decimals
Number	Develop Number Sense	MB.7.N.3	Solve problems involving percents from 1% to 100%.	Percents to Fraction Percentage to Fraction Decimal to Percentage Percents and Decimals Percentage Word Problems Percentage of a Quantity Percent Increase and Decrease Calculating Percentages Percent of a Number	Grade 7 Percentage Basics



# Manitoba Curriculum

## Alignment with Mathletics



### Manitoba Grade 7

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop Number Sense	MB.7.N.4	Demonstrate an understanding of the relationship between repeating decimals and fractions, and terminating decimals and fractions.	Fraction to Terminating Decimal Fractions to Decimals Fractions to Decimals 2 Recurring Decimals Decimals to Fractions 1 Decimals to Fractions 2 Recurring Decimals and Series	Grade 7 Percentage Basics
Number	Develop Number Sense	MB.7.N.5	Demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators, concretely, pictorially, and symbolically (limited to positive sums and differences).	Add: Common Denominator Add Mixed Numbers: Same Sign Add Like Mixed Numbers Add Unlike Mixed Numbers Add Unlike Fractions Subtract Unlike Fractions Mixed to Improper Improper to Mixed Subtract: Common Denominator Subtract: No Common Denominator Subtract Unlike Mixed Numbers Simplifying Fractions Add: No Common Denominator Add Subtract Fractions 1 Subtract Like Mixed Numbers One Take Fraction Subtract Mixed Numbers: Renaming Equivalent Fractions	Grade 7 Fractions
Number	Develop Number Sense	MB.7.N.6	Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially, and symbolically.	Directed Numbers Integers: Add and Subtract More with Integers Integers on a Number Line Add Integers Subtract Integers Negative or Positive?	Grade 7 Directed Numbers
Number	Develop Number Sense	MB.7.N.7	Compare and order fractions, decimals (to thousandths), and integers.	Ordering Fractions Ordering Integers Comparing Integers Decimals on a Number Line Decimal Order 1 Comparing Decimals Comparing Fractions 1 Comparing Fractions 2	Grade 7 Fractions Grade 7 Decimals





# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 7

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Patterns and Relations	Patterns	MB.7.PR.1	Demonstrate an understanding of oral and written patterns and their corresponding relations.	Under Review	Under Review
Patterns and Relations	Patterns	MB.7.PR.2	Construct a table of values from a relation, graph the table of values, and analyze the graph to draw conclusions and solve problems.	Pattern Rules and Tables Table of Values Find the Pattern Rule	Grade 7 Algebra Basics Grade 8 Linear Relationships
Patterns and Relations	Variables and Equations	MB.7.PR.3	Demonstrate an understanding of preservation of equality by modelling preservation of equality, concretely, pictorially, and symbolically and applying preservation of equality to solve equations.	Graphing from a Table of Values Which Straight Line? Ordered Pairs Equation of a Line 1 Equation of a Line 2 Equation of a Line 3 Reading Values from a Line $y=ax$ Patterns, Rules and Equations	Grade 7 Algebra Basics Grade 8 Linear Relationships
Patterns and Relations	Variables and Equations	MB.7.PR.4	Explain the difference between an expression and an equation.	Write an Equation: Word Problems Writing Algebraic Expressions Writing Equations	Grade 7 Algebra Basics Grade 8 Linear Relationships
Patterns and Relations	Variables and Equations	MB.7.PR.5	Evaluate an expression given the value of the variable(s).	Simple Substitution 1	Grade 7 Algebra Basics
Patterns and Relations	Variables and Equations	MB.7.PR.6	Model and solve problems that can be represented by one-step linear equations of the form $x + a = b$ , concretely, pictorially, and symbolically, where $a$ and $b$ are integer.	Solving Simple Equations More Substitution in Formulae Solving More Equations Solve Equations: Add, Subtract 2 Solve Equations: Multiply, Divide 2	Grade 8 Equations

### Manitoba Grade 7



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Patterns and Relations	Variables and Equations	MB.7.PR.7	Model and solve problems that can be represented by linear equations.	Solving Simple Equations Solving More Equations Equations: Variables, Both Sides Solve Multi-Step Equations Solve Two-Step Equations Missing Numbers: Variables Equations with Fractions Equations with Decimals Equations to Solve Problems Checking Solutions	Grade 8 Equations
Shape and Space	Measurement	MB.7.SS.1	Demonstrate an understanding of circles by describing the relationships among radius, diameter, and circumference of circles relating circumference to $\pi$ , determining the sum of the central angles, constructing circles with a given radius or diameter, solving problems involving the radii, diameters, and circumferences of circles.	Circle Terms Circumference: Circles Labelling Circles Identify Parts of Circles 1 Identify Parts of Circles 2	Under review
Shape and Space	Measurement	MB.7.SS.2	Develop and apply a formula for determining the area of triangles, parallelograms and circles.	Area: Triangles Area: Right Angled Triangles Area: Quadrilaterals Area: Circles Area: Parallelograms	Grade 7 Area and Perimeter
Shape and Space	3-D objects and 2-D shapes	MB.7.SS.3	Perform geometric constructions, including perpendicular line segments, parallel line segments, perpendicular bisectors and angle bisectors.	Parallel Lines What Line am I?	Grade 7 The Number Plane
Shape and Space	Transformations	MB.7.SS.4	Identify and plot points in the four quadrants of a Cartesian plane using ordered pairs.	Ordered Pairs	Grade 7 The Number Plane





# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 7



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Shape and Space	Transformations	MB.7.SS.5	Perform and describe transformations of a 2-D shape in all four quadrants of a Cartesian plane (limited to integral vertices).	Transformations Rotations: Coordinate Plane Transformations: Coordinate Plane Flip, Slide, Turn Symmetry Symmetry or Not? Rotational Symmetry	Under review
Statistics and Probability	Data Analysis	MB.7.SP.1	Demonstrate an understanding of central tendency and range by determining the measures of central tendency (mean, median, mode) and range and determining the most appropriate measures of central tendency to report findings.	Mean Median Mode Mean from Frequency Table Median from Frequency Mode from Frequency Table	Grade 9 Data
Statistics and Probability	Data Analysis	MB.7.SP.2	Determine the effect on the mean, median, and mode when an outlier is included in a data set.	Under review	Under review
Statistics and Probability	Data Analysis	MB.7.SP.3	Construct, label, and interpret circle graphs to solve problems.	Creating a Sector Graph Sector Graph Calculations Sector Graph Angles Sector Graphs	Grade 9 Data
Statistics and Probability	Chance and Uncertainty	MB.7.SP.4	Express probabilities as ratios, fractions, and percents.	Probability Scale Ratios Simple Probability Find the Probability	Grade 7 Chance
Statistics and Probability	Chance and Uncertainty	MB.7.SP.5	Identify the sample space (where the combined sample space has 36 or fewer elements) for a probability experiment involving two independent events.	Dice and Coins Two-way Table Probability Tree Diagrams Venn Diagrams	Grade 7 Chance
Statistics and Probability	Chance and Uncertainty	MB.7.SP.6	Conduct a probability experiment to compare the theoretical probability (determined using a tree diagram, table, or another graphic organizer) and experimental probability of two independent events.	Dice and Coins Two-way Table Probability Probability Tables Probability With Replacement Probability Without Replacement Complementary Events	Grade 7 Chance





# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 8



Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop number sense	MB.8.N.1	Demonstrate an understanding of perfect squares and square roots, concretely, pictorially, and symbolically (limited to whole numbers).	Square Roots Equations with Square Roots	Under review
Number	Develop number sense	MB.8.N.2	Determine the approximate square root of numbers that are not perfect squares (limited to whole numbers).	Estimating Square Roots Estimate Square Roots	Under review
Number	Develop number sense	MB.8.N.3	Demonstrate an understanding of percents greater than or equal to 0%.	Percentage of a Quantity Calculating Percentages Percentage to Fraction Decimal to Percentage Percents and Decimals Decimals to Fractions 2 Fraction to Terminating Decimal Fractions to Decimals 2 Percentage Word Problems Percentage Increase and Decrease Solve Percent Equations Percentage Composition	Grade 8 Percentage Calculations
Number	Develop number sense	MB.8.N.4	Demonstrate an understanding of ratio and rate.	Rate Word Problems Ratios Rates Rates Word Problems Equivalent Ratios Dividing a Quantity in a Ratio Ratio Word Problems Rates Calculation Ratio and Proportion Solve Proportions	Grade 8 Percentage Calculations
Number	Develop number sense	MB.8.N.5	Solve problems that involve rates, ratios, and proportional reasoning.	Ratio Word Problems Percentage Word Problems Rate Word Problems	Grade 7 Fractions



# Manitoba Curriculum

## Alignment with Mathletics



### Manitoba Grade 8

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Number	Develop number sense	MB.8.N.6	Demonstrate an understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially, and symbolically.	Operations with Fractions Converting Mixed and Improper Add Unlike Mixed Numbers Subtract Unlike Mixed Numbers Model Fractions to Multiply Multiply Mixed Numbers Divide Fractions by Fractions 1 Divide Fractions by Fractions 2 Divide Mixed Numbers Fraction Word Problems Divide by a Unit Fraction Divide Fractions Visual Model Multiplying Fractions Multiply Two Fractions 1 Multiply Two Fractions 2	Grade 7 Fractions
Number	Develop number sense	MB.8.N.7	Demonstrate an understanding of multiplication and division of integers, concretely, pictorially, and symbolically.	Integers: Multiply and Divide Integers: Multiply and Divide 1 Integers: Order of Operations (BEDMAS) More with Integers Order of Operations 1 (BEDMAS)	Grade 7 Whole Numbers
Number	Develop number sense	MB.8.N.8	Solve problems involving positive rational numbers.	Fraction Word Problems Ratio Word Problems Percentage Word Problems Rate Word Problems	Grade 7 Fractions
Patterns and Relations	Use patterns to describe the world and solve problems	MB.8.PR.1	Graph and analyze two-variable linear relations.	Pattern Rules and Tables Find the Pattern Rule Find the Function Rule Ordered Pairs Table of Values Reading Values from a Line Graphing from a Table of Values 2 $y=ax$ Determining a Rule for a Line Which Straight Line? Equation of a Line 2	Grade 8 Linear Relationships
Patterns and Relations	Represent algebraic expressions in multiple ways	MB.8.PR.2	Model and solve problems using linear equations.	Equations to Solve Problems Solving More Equations Solve Equations: Add, Subtract 2 Solve Equations: Multiply, Divide 2 Equations with Fractions Equations with Grouping Symbols	Grade 8 Equations
Shape and Space	Use direct or indirect measurement to solve problems	MB.8.SS.1	Develop and apply the Pythagorean theorem to solve problems.	Pythagoras' Theorem Pythagorean Triads Hypotenuse of a Right Triangle	Grade 8 Pythagors' Theorem



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 8

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Shape and Space	Use direct or indirect measurement to solve problems	MB.8.SS.2	Draw and construct nets for 3-D objects.	Nets	Grade 9 Measuring Solids
Shape and Space	Use direct or indirect measurement to solve problems	MB.8.SS.3	Determine the surface area of right rectangular prisms, right triangular prisms and right cylinders to solve problems.	Surface Area: Cylinders Surface Area: Triangular Prisms Surface Area: Rectangular Prisms	Grade 9 Measuring Solids
Shape and Space	Use direct or indirect measurement to solve problems	MB.8.SS.4	Develop and apply formulas for determining the volume of right prisms and right cylinders.	Volume: Cylinders Volume: Prisms Volume: Rectangular Prisms 2 Volume: Triangular Prisms	Grade 9 Measuring Solids
Shape and Space	Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them	MB.8.SS.5	Draw and interpret top, front, and side views of 3-D objects composed of right rectangular prisms.	Under Review	Under Review
Shape and Space	Describe and analyze position and motion of objects and shapes	MB.8.SS.6	Demonstrate an understanding of tessellation by explaining the properties of shapes that make tessellating, creating tessellations and identifying tessellations in the environment.	Under Review	Under Review
Statistics and Probability	Collect, display, and analyze data to solve problems	MB.8.SP.1	Critique ways in which data are presented.	Frequency Histograms Histograms Histogram or Polygon? Cumulative Frequency Histogram Dot Plots Line Plots Pie Charts Divided Bar Graphs Step Graphs	Grade 9 Data
Statistics and Probability	Use experimental or theoretical probabilities to represent and solve problems involving uncertainty	MB.8.SP.2	Solve problems involving the probability of independent events.	Dice and Coins Probability Scale Simple Probability Two-way Table Probability Probability With Replacement Probability Without Replacement Probability Without Replacement 1 Simple Probability 1 Probability Tables Probability with Replacement 1 Find the Probability	Grade 7 Chance Grade 9 Probability



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 9 (10F)



Strand	Substrand	Outcome	Outcome Description	Activities	eBooks
Number	Develop Number Sense	MB.9.N.1	Demonstrate an understanding of powers with integral bases (excluding base 0) and whole-number exponents.	Exponent Notation Exponent Form to Numbers The Zero Exponent Simplifying with Exponent Laws 1 Simplifying with Exponent Laws 2 Irrational Number to Exponent Form	Grade 9 Exponents
Number	Develop Number Sense	MB.9.N.2	Demonstrate an understanding of operations on powers with integral bases (excluding base 0) and whole-number exponents.	Simplifying with Exponent Laws 1 Simplifying with Exponential Laws 2	Grade 9 Exponents
Number	Develop Number Sense	MB.9.N.3	Demonstrate an understanding of rational numbers.	Ordering Fractions Comparing Fractions 2 Decimals on a Number Line Comparing Fractions with Signs Equivalent Fractions Multiplying Fractions Common Denominator Converting Mixed and Improper No Common Denominator Decimal Order Add Like Mixed Numbers Subtract Like Mixed Numbers Divide Fractions by Fractions 1 Decimal by Decimal Divide Decimal by Decimal	Grade 7 Fractions
Number	Develop Number Sense	MB.9.N.4	Explain and apply the order of operations, including exponents.	Integers: Order of Operations (BEDMAS) Order of Operation 1 (BEDMAS)	Grade 9 Exponents
Number	Develop Number Sense	MB.9.N.5	Determine the square root of positive rational numbers that are perfect squares.	Square Roots 1 Estimate Square Roots	Grade 9 Exponents
Number	Develop Number Sense	MB.9.N.6	Determine an approximate square root of positive rational numbers that are non-perfect squares.	Estimate Square Roots	Grade 9 Exponents



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 9 (10F)

Strand	Substrand	Outcome	Outcome Description	 Activities	 eBooks
Patterns and Relations	Use patterns	MB.9.PR.1	Generalize a pattern arising from a problem solving context using linear equations and verify by substitution.	Table of Values Find the Pattern Rule Pattern Rules and Tables $y=ax$	Grade 9 Linear Relationships
Patterns and Relations	Use patterns	MB.9.PR.2	Graph linear relations, analyze the graph and interpolate or extrapolate to solve problems.	Graphing from a Table of Values 2 Horizontal and Vertical Lines $y=ax$ Which Straight Line? Equation of a Line 2 Equation of a Line 3 Reading Values from a Line Conversion Graphs	Grade 9 Linear Relationships
Patterns and Relations	Represent algebraic expressions	MB.9.PR.3	Model and solve problems using linear equations.	Solving Simple Equations Solving More Equations Equations with Grouping Symbols Equations with Decimals Equations with Fractions Equations to Solve Problems Equations with Fractions 2 Checking Solutions	Grade 9 Equations and Inequalities
Patterns and Relations	Represent algebraic expressions	MB.9.PR.3	Model and solve problems using linear equations.	Checking Solutions	Grade 9 Equations and Inequalities
Patterns and Relations	Represent algebraic expressions	MB.9.PR.4	Solve single variable linear inequalities with rational coefficients.	Solving Inequalities 1 Checking Solutions Solving Inequalities 2 Graphing Inequalities 1 Graphing Inequalities 3	Grade 9 Equations and Inequalities
Patterns and Relations	Represent algebraic expressions	MB.9.PR.4	Determine if a given rational number is a possible solution of a given linear inequality.	Checking Solutions	Grade 9 Equations and Inequalities
Patterns and Relations	Represent algebraic expressions	MB.9.PR.5	Identify the variables, degree, number of terms, and coefficients, including the constant term, of a given simplified polynomial expression.	Solving Simple Equations Solving More Equations Equations with Grouping Symbols Equations with Decimals Equations with Fractions Equations to Solve Problems Order of Operations 1 (BEDMAS)	Grade 9 Equations and Inequalities
Patterns and Relations	Represent algebraic expressions	MB.9.PR.6	Addition and subtraction of polynomial expressions.	Recognizing Like Terms Like Terms: Add, Subtract	Grade 7 Algebra Basics



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 9 (10F)

Strand	Substrand	Outcome	Outcome Description	Activities	eBooks
Patterns and Relations	Represent algebraic expressions	MB.9.PR.7	Multiplication and division of polynomial expressions (limited to polynomials of degree less than or equal to 2).	Algebraic Multiplication Expanding Brackets Using the Distributive Property Expanding with Negatives Expand then Simplify Dividing Expressions Algebraic Fractions 1	Grade 7 Algebra Basics
Shape and Space	Use direct or indirect measurement	MB.9.SS.1	Solve problems and justify the solution strategy using circle properties.	Circle Terms Circle Theorem	Grade 10 Chords and Angles Grade 10 Tangents and Secants
Shape and Space	3-D objects and 2-D shapes	MB.9.SS.2	Determine the surface area of composite 3-D objects to solve problems.	Surface Area: Rectangular Prisms Surface Area: Triangular Prisms Surface Area: Cylinders	Grade 9 Measuring Solids
Shape and Space	3-D objects and 2-D shapes	MB.9.SS.3	Similarity of polygons	Similar Figures 1 Similar Figures 2 Using Similar Triangles Using Similar Triangles 1 Similarity Proofs	Grade 9 Similarity and Congruence
Shape and Space	position and motion	MB.9.SS.4	Draw and interpret scale diagrams of 2-D shape.	Scale Factor Using Similar Triangles	Grade 9 Similarity and Congruence
Shape and Space	position and motion	MB.9.SS.5	Demonstrate an understanding of line and rotation symmetry.	Symmetry or Not? Transformations Symmetry Rotational Symmetry Flip, Slide, Turn Rotations: Coordinate Plane	Under review
Statistics and Probability	theoretical probabilities	MB.9.SP.4	Demonstrate an understanding of the role of probability in society.	Simple Probability Simple Probability 1 Probability Scale Probability Tables Probability With Replacement Probability Without Replacement Find the Probability Probability without Replacement 1 Two-way Table Probability	Grade 9 Probability







# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 10 Applied & Pre-Calculus (20S)



Strand	Outcome	Outcome Description	 Activities	 eBooks
Measurement	MB.10I.M.1	Solve problems that involve linear measurement, using si and imperial units of measure estimation strategies measurement strategies.	Converting Units of Length Metres and Kilometres Converting Units of Mass Millilitres and Litres Grams and Kilograms Capacity Addition Converting Units of Area Converting Volume Customary Units of Length Customary Units of Weight 1 Customary Units of Capacity Customary Units of Weight 2	Grade 7 Converting Units
Measurement	MB.10I.M.2	Apply proportional reasoning to problems that involve conversions within and between si and imperial units of measure.	Converting Units of Length Metres and Kilometres Converting Units of Mass Millilitres and Litres Grams and Kilograms Capacity Addition Converting Units of Area Converting Volume Customary Units of Length Customary Units of Weight 1 Customary Units of Capacity Customary Units of Weight 2	Grade 7 Converting Units
Measurement	MB.10I.M.3	Solve problems, using si and imperial units, that involve the surface area and volume of 3-D objects, including right cones, right cylinders, right prisms, right pyramids and spheres.	Surface Area: Rectangular Prisms Surface Area: Triangular Prisms Surface Area: Cylinders Surface Area: Square Pyramids Surface Area: Cones Surface Area: Spheres Surface Area: Rearrange Formula Volume: Rectangular Prisms 1 Volume: Triangular Prisms Volume: Cylinders Volume: Pyramids Volume: Cones Volume: Spheres Properties of Solids Mass Addition Volume: Rectangular Prisms 2 Volume: Rearrange Formula	Grade 9 Measuring Solids





# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 10 Applied & Pre-Calculus (20S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Measurement	MB.10I.M.4	Develop and apply the primary trigonometric ratios (sine, cosine, tangent) to solve problems that involve right triangles.	Sin A Cos A Tan A Find Unknown Sides Find Unknown Angles Hypotenuse, Adjacent, Opposite Elevation and Depression Pythagoras' Theorem Pythagorean Triads	Grade 9 Trigonometry
Algebra and Number	MB.10I.A.1	Demonstrate an understanding of factors of whole numbers by determining, prime factors, greatest common factor, least common multiple, square root and cube root.	Product of Prime Factors Prime or Composite? Greatest Common Factor Least Common Multiple Square Roots Estimate Square Roots Estimating Cube Roots	Grade 7 Whole Numbers
Algebra and Number	MB.10I.A.2	Demonstrate an understanding of irrational numbers by representing, identifying, simplifying irrational numbers and ordering irrational numbers.	Simplifying Irrational Number Adding and Subtracting Irrational Numbers	Grade 9 Exponents Grade 10 Radicals and Exponents
Algebra and Number	MB.10I.A.3	Demonstrate an understanding of powers with integral and rational exponents.	Irrational Number to Exponent Form Negative Exponents Fractional Exponents Simplifying with Exponent Laws 1 Simplifying with Exponential Laws 2	Grade 9 Exponents Grade 10 Radicals and Exponents
Algebra and Number	MB.10I.A.4	Demonstrate an understanding of the multiplication of polynomial expressions (limited to monomials, binomials, and trinomials), concretely, pictorially, and symbolically.	Simple Substitution Simple Substitution 2 Complex Substitution Expanding Binomial Products Special Binomial Products	Grade 8 Expanding and Factoring
Algebra and Number	MB.10I.A.5	Demonstrate an understanding of common factors and trinomial factoring, concretely, pictorially, and symbolically.	Factoring Expressions Factoring with Negatives Factoring Factoring with Exponents Highest Common Algebraic Factor Factoring Quadratics 1 Factoring Quadratics 2 Special Binomial Products	Grade 8 Expanding and Factoring Grade 10 Factoring Quadratic Equations



# Manitoba Curriculum Alignment with Mathletics



## Manitoba Grade 10 Applied & Pre-Calculus (20S)

Strand	Outcome	Outcome Description	Activities	eBooks
Relations and Functions	MB.10I.R.1	Interpret and explain the relationships among data, graph and contexts.	Graphing from a Table of Values Graphing Parabolas Graphing Cubics	Grade 9 Linear Relationships Grade 10 Straight Lines Parabolas Exponential and Power Graphs simple Nonlinear Graphs
Relations and Functions	MB.10I.R.2	Demonstrate an understanding of relations and functions.	Scatter Plots	Under review
Relations and Functions	MB.10I.R.3	Demonstrate an understanding of slope with respect to rise and run, line segments and lines, rate of change, parallel lines and perpendicular lines.	Slope of a Line Gradient Determining a Rule for a Line Horizontal and Vertical Lines Equation from Point and Gradient Equation of a line 2 Equation of a line 3 Which straight line? Are they Parallel? Are they Perpendicular?	Grade 9 Linear Relationships Grade 10 Straight Lines
Relations and Functions	MB.10I.R.4	Describe and represent linear relations, using words, ordered pairs, tables of values, graphs and equations.	Under review	Grade 9 Linear Relationships Grade 10 Straight Lines
Relations and Functions	MB.10I.R.5	Determine the characteristics of the graphs of linear relations, including the intercepts, slope, domain and range.	Intercepts	Grade 9 Linear Relationships Grade 10 Straight Lines
Relations and Functions	MB.10I.R.6	Relate linear relations expressed in slope-intercept form ( $y = mx + b$ ) general form ( $Ax + By + C = 0$ ) slope-point form ( $y - y' = m(x - x')$ ) to their graphs.	General Form of a Line Which Straight Line? What Type of Function?	Grade 9 Linear Relationships Grade 10 Straight Lines



# Manitoba Curriculum Alignment with Mathletics


## Manitoba Grade 10 Applied & Pre-Calculus (20S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Relations and Functions	MB.10I.R.7	Determine the equation of a linear relation, given a graph, a point and the slope, two points, a point and the equation of a parallel or perpendicular line.	Which Straight Line? Determining a Rule for a Line General Form of a Line Equation of a Line 2 Equation from Two Points Equation of a line 3 Equation from Point and Gradient	Grade 9 Linear Relationships Grade 10 Straight Lines
Relations and Functions	MB.10I.R.8	Represent a linear function, using function notation.	Function Notation 1 Function Notation 2	Grade 10 Functions
Relations and Functions	MB.10I.R.9	Solve problems that involve systems of linear equations in two variables, graphically and algebraically.	Simultaneous Linear Equations Breakeven Point Simultaneous Equations 1 Simultaneous Equations 2 Simultaneous Equations 3	Grade 9 Equations and Inequalities Grade 10 Quadratic Equations
Relations and Functions	MB.10I.R.10	Solve problems that involve the distance between two points and the midpoint of a line segment.	Distance Between Two Points Midpoint by Formula Coordinate Methods in Geometry	Grade 9 Coordinate Geometry



# Manitoba Curriculum Alignment with Mathletics



## Manitoba Grade 10 Essential Mathematics (20S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Analysis of Games and Numbers	MB.10E1.A.1	Analyze puzzles and games that involve spatial reasoning, using problem-solving strategies.	Under review	Under review
Analysis of Games and Numbers	MB.10E2.A.1	Analyze puzzles and games that involve spatial reasoning, using problem-solving strategies.	Under review	Under review
Personal Finance	MB.10E1.P.1	Demonstrate an understanding of calculations for gross pay and net pay earned through income sources including wages, salary, contracts, commissions and piecework.	Wages and Salaries Commission Working Overtime Budgeting	Grade 9 Earning Money
Personal Finance	MB.10E1.P.2	Solve problems that require the manipulation and application of formulas related to income.	Wages and Salaries Commission Working Overtime Budgeting	Grade 9 Earning Money
Measurement	MB.10E1.M.1	Demonstrate an understanding of the système international (SI) by describing relationships of the units for length, area, volume, capacity, and mass.	Compare Length Centimeters and Meters Converting cm and mm Grams and Kilograms Milliliters and Liters Kilogram Conversions Grams and Milligrams	Grade 7 Converting Units
Measurement	MB.10E1.M.2	Demonstrate an understanding of the imperial system by describing the relationships of the units for length, area, volume, capacity, and mass and comparing the American and British imperial units for capacity, and applying strategies to convert between imperial and SI units.	How Long Is That (Customary)? Customary Units of Weight 1 Customary Units of Capacity Customary Units of Length Customary Units of Weight 2 Units of Weight 2	Grade 7 Converting Units
Measurement	MB.10E1.M.3	Solve and verify problems that involve si and imperial linear measurements, including decimal and fractional measurements.	Perimeter: Triangles 2 Perimeter Perimeter of Shapes Perimeter Detectives 1 Perimeter Detectives 2 Perimeter: Squares and Rectangles Perimeter: Triangles Circumference: Circles	Grade 9 Perimeter and Area
Measurement	MB.10E1.M.4	Solve problems that require the manipulation and application of formulas related to converting measurement.	Real Formulae Rearranging the Equation Changing the Subject	Under review



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 10 Essential Mathematics (20S)



Strand	Outcome	Outcome Description	 Activities	 eBooks
2-D Geometry	MB.10E1.G.1	Solve problems that involve si and imperial area measurements of regular, composite, and irregular 2-D shapes including decimal and fractional measurements.	Area: Parallelograms Area of Shapes Area: Squares and Rectangles Area: Triangles Area: Right Triangles Converting Units of Area Area: Composite Shapes Area: Circles 1 Area: Circles 2	Grade 9 Perimeter and Area
2-D Geometry	MB.10E1.G.2	Solve problems that require the manipulation and application of formulas related to and area.	Perimeter, Area, Dimension Change	Grade 9 Perimeter and Area Similarity and Congruence
Trigonometry	MB.10E2.TG.1	Solve problems involving right triangles using the Pythagorean theorem.	Pythagorean Triads Pythagoras' Theorem Hypotenuse of a Right Triangle	Grade 8 Pythagoras's Theorem
Trigonometry	MB.10E2.TG.2	Demonstrate an understanding of primary trigonometric ratios (sine, cosine, tangent) by applying similarity to right triangles, generalizing patterns from similar right triangles and solving problems.	Hypotenuse, Adjacent, Opposite Sin A Cos A Tan A Find Unknown Angles Find Unknown Sides Elevation and Depression	Grade 9 Trigonometry
Trigonometry	MB.10E2.TG.3	Solve problems that require the manipulation and application of formulas related to the Pythagorean theorem and primary trigonometric ratios.	Find Unknown Angles Find Unknown Sides Elevation and Depression Sign of the Angle	Grade 9 Trigonometry
Consumer Decisions	MB.10E2.C.1	Solve problems that involve unit pricing and currency exchange, using proportional reasoning.	Best Buy	Under review
Transformations	MB.10E2.TF.1	Demonstrate an understanding of transformations on a 2-D shape, including translations, rotations, reflections and dilations.	Scale Factor Transformations Flip, Slide, Turn Symmetry or Not?	Grade 9 Similarity and Congruence
Angle Construction	MB.10E2.AC.1	Demonstrate an understanding of angles, including acute, right, obtuse, straight, and reflex.	Equal Angles Comparing Angles Classifying Angles Measuring Angles Estimating Angles	Grade 7 Angles
Angle Construction	MB.10E2.AC.2	Solve problems that involve parallel, perpendicular, and transversal lines, and pairs of angles formed between them.	Equal, Complement or Supplement? Angles and Parallel Lines Parallel Lines	Grade 7 Angles



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 11 Applied Mathematics (30S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Measurement	MB.11A.M.1	Solve problems that involve the application of rates.	Converting Rates Rates Calculations Rates Word Problems Average Speed Time Taken Distance Travelled	Grade 9 Decimals
Measurement	MB.11A.M.2	Solve problems that involve scale diagrams, using proportional reasoning.	Scale Factor Floor Plans	Under review
Measurement	MB.11A.M.3	Demonstrate an understanding of the relationships among scale factors, areas, surface areas and volumes of similar 2-D shapes and 3-D objects.	Surface Area: Triangular Prisms Surface Area: Cylinders Surface Area: Square Pyramids Surface Area: Rectangular Pyramids Surface Area: Cones Surface Area: Spheres Surface Area: Rectangular Prisms Volume: Rectangular Prisms 1 Volume: Rectangular Prisms 2 Volume: Triangular Prisms Volume: Cylinders Volume: Composite Figures Volume: Spheres Volume: Cones Volume: Pyramids Volume: Prisms Area: Squares and Rectangles Area: Triangles Area: Right Angled Triangles Area: Composite Shapes Area: Circles Converting Units of Area Converting Volume Similar Areas and Volumes	Grade 9 Perimeter and Area Measuring Solids Similarity and Congruence
Geometry	MB.11A.G.1	Derive proofs that involve the properties of angles and triangles.	Parallel Lines Angles and Parallel Lines Equal, Complement or Supplement? Interior and Exterior Angles Angle Sum of a Triangle Exterior Angles of a Triangle Angle Sum of a Quadrilateral Plane Figure Theorems Area: Parallelograms Area: Quadrilaterals Nets	Grade 7 Angles Grade 9 Polygons and Angles







# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 11 Applied Mathematics (30S)



Strand	Outcome	Outcome Description	 Activities	 eBooks
Geometry	MB.11A.G.2	Solve problems that involve the properties of angles and triangles.	Interior and Exterior Angles Angle Sum of a Triangle Labelling Angles Classifying Angles Angles in a Revolution Exterior Angles of a Triangle Angle Sum of a Quadrilateral Euler's Formula Parallel Lines Angles and Parallel Lines Equal, Complement or Supplement?	Grade 7 Angles Grade 9 Polygons and Angles
Geometry	MB.11A.G.3	Solve problems that involve the cosine law and the sine law, including the ambiguous case.	Cosine Rule 1 Cosine Rule 2 Find Unknown Sides Find Unknown Angles Area Problems Sine Rule 1 Sine Rule 2 Sin A Cos A Tan A Trigonometry Problems 1 Trigonometry Problems 2 Elevation and Depression Area Rule 1 Area Rule 2	Grade 9 Trigonometry Grade 10 Non Right Angled Triangles Trigonometric Relationships
Logical Reasoning	MB.11A.L.1	Analyze and prove conjectures, using inductive and deductive reasoning, to solve problems.	Terms: Arithmetic Progressions Sum: Arithmetic Progressions Terms: Geometric Progressions 1 Terms: Geometric Progressions 2 Sum: Geometric Progressions Divisibility Tests Tests of Divisibility 1	Grade 11 Sequence and Series: Arithmetic Sequence and Series: Geometric
Logical Reasoning	MB.11A.L.2	Analyze puzzles and games that involve spatial reasoning, using problem-solving strategies.	Transformations: Coordinate Plane Rotations: Coordinate Plane Dice and Coins Financial Expectation	Under review
Statistics	MB.11A.S.1	Demonstrate an understanding of normal distribution, including standard deviation z-scores.	Calculating Standard Deviation Interpreting Standard Deviation Mean Mean from Frequency Table Median Median from Frequency Median and Cumulative Frequency Mode from Frequency Table Mode Normal Distribution Calculating z-scores Comparing z-scores Equivalent z-scores	Grade 9 Data Grade 10 Interpreting Data





# Manitoba Curriculum Alignment with Mathletics



## Manitoba Grade 11 Applied Mathematics (30S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Statistics	MB.11A.S.2	Interpret statistical data, using confidence intervals confidence levels margin of error.	Calculating Standard Deviation Interpreting Standard Deviation Mean Mean from Frequency Table Median Median from Frequency Median and Cumulative Frequency Mode from Frequency Table Mode Normal Distribution Calculating z-scores Comparing z-scores Equivalent z-scores	Grade 9 Data Grade 10 Interpreting Data
Relations and Functions	MB.11A.R.1	Model and solve problems that involve systems of linear inequalities in two variables.	Solving Inequalities 1 Solving Inequalities 2 Solving Inequalities 3 Linear Regions Intersecting Linear Regions	Grade 9 Equations and Inequalities
Relations and Functions	MB.11A.R.2	Demonstrate an understanding of the characteristics of quadratic functions, including vertex, intercepts, domain and range and axis of symmetry.	Quadratic Equations 1 Quadratic Equations 2 Graphing Parabolas Roots of the Quadratic Factoring Quadratics 1 Factoring Quadratics 2 Checking Solutions Quadratic Formula Vertex of a Parabola Domain and Range The Discriminant Parabolas and Marbles Parabolas and Rectangles Domain	Grade 10 Quadratic Equations Parabolas
Relations and Functions	MB.11A.RP.1.	Research and give a presentation on a historical event or an area of interest that involves mathematics.	Data Terms Finding the Average Mean Median Mode Mean from Frequency Mode from Frequency Table Median from Frequency Table Median and Cumulative Frequency Data Extremes and Range	Grade 9 Data Grade 10 Interpreting Data



# Manitoba Curriculum Alignment with Mathletics



## Manitoba Grade 11 Essential Mathematics (30S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Analysis of Games and Numbers	MB.11E3.A.1	Analyze puzzles and games that involve numerical reasoning, using problem-solving strategies.	Under review	Under review
Interest and Credit	MB.11E3.I.1	Demonstrate an understanding of compound interest.	Compound Interest Compound Interest by Formula	Grade 10 Interest
Interest and Credit	MB.11E3.I.2	Demonstrate an understanding of credit options, including credit cards and loans.	Comparing Loans Comparing Home Loans Credit Card Repayments	Grade 10 Interest
Interest and Credit	MB.11E3.I.3	Solve problems that require the manipulation and application of formulas related to simple interest and finance charges.	Effective Interest Rate Simple Interest	Grade 10 Interest
3-D Geometry	MB.11E3.G.1	Solve problems that involve SI and imperial units in surface area measurements.	Nets Surface Area: Rearrange Formula Surface Area: Square Pyramids Surface Area: Spheres Surface Area: Cones Surface Area: Rectangular Pyramids Surface Area: Rectangular Prisms Surface Area: Cuboids Surface Area: Cylinders Surface Area: Triangular Prisms	Grade 9 Measuring Solids
3-D Geometry	MB.11E3.G.2	Solve problems that involve SI and imperial units in volume and capacity measurements.	Volume: Prisms Volume: Pyramids Volume: Cones Volume: Spheres Volume: Rearrange Formula Volume: Rectangular Prisms 1 Converting Volume Volume: Rectangular Prisms 2 Volume: Cylinders Volume: Triangular Prisms Volume: Composite Figures	Grade 9 Measuring Solids



# Manitoba Curriculum Alignment with Mathletics



## Manitoba Grade 11 Essential Mathematics (30S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
3-D Geometry	MB.11E3.G.3	Solve problems that require the manipulation and application of formulas related to volume and capacity surface area.	Volume: Rearrange Formula Surface Area: Rearrange Formula	Grade 9 Measuring Solids
Statistics	MB.11E3.S.1	Solve problems that involve creating and interpreting graphs, including bar graphs, histograms, line graphs and circle graphs.	Histograms Divided Bar Graphs Bar Graphs 1 Circle Graphs Frequency Histograms Histogram or Polygon? Dot Plots	Grade 10 Interpreting Data
Managing Money	MB.11E4.M.1	Solve problems that involve personal budgets.	Budgeting Wages and Salaries Commission Best Buy	Grade 9 Earning Money
Managing Money	MB.11E4.M.2	Demonstrate an understanding of financial institution services used to access and manage finances.	Comparing Loans Comparing Home Loans	Grade 10 Interest
Relations and Patterns	MB.11E4.R.1	Demonstrate an understanding of slope as rise over run, as rate of change by solving problems.	Gradients for Real Gradient $y=ax$ Slope of a Line	Grade 9 Linear Relationships Coordinate Geometry
Relations and Patterns	MB.11E4.R.2	Solve problems by applying proportional reasoning and unit analysis.	Best Buy Direct Variation Rates Word Problems Rates	Grade 9 Decimals
Relations and Patterns	MB.11E4.R.3	Solve problems that require the manipulation and application of formulas related to slope and rate of change.	Slope of a Line Gradient $y=ax$ Which straight line? Equation from Point and Gradient Equation from Two Points	Grade 9 Linear Relationships Coordinate Geometry Grade 10 Straight Lines
Relations and Patterns	MB.11E4.R.4	Solve problems that involve scale.	Scale Measurement Scale Factor Perimeter, Area, Dimension Change	Under review



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 11 Essential Mathematics (30S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Relations and Patterns	MB.11E4.R.5	Demonstrate an understanding of linear relations by recognizing patterns and trends, graphing, creating tables of values, writing equations, interpolating and extrapolating and solving problems.	Table of Values Pattern Rules and Tables Find the Pattern Rule $y=ax$ Which Straight Line? Graphing from a Table of Values Graphing from a Table of Values 2 Scatter plots What Type of Function? Find the Function Rule Reading Values from a Line Determining a Rule for a Line Intercepts	Grade 9 Linear Relationships Coordinate Geometry Grade 10 Straight Lines
Trigonometry	MB.11E4.TG.1	Solve problems that involve two and three right triangles.	Sin A Cos A Tan A Find Unknown sides Find Unknown Angles Elevation and Depression Trigonometry Problems 1 Trigonometry Problems 2	Grade 9 Trigonometry Grade 10 Trigonometric Relationships
Design Modelling	MB.11E4.D.1	Model and draw 3-D objects and their views.	Nets	Under review
Design Modelling	MB.11E4.D.2	Draw and describe exploded views, component parts, and scale diagrams of simple 3-D objects.	Nets	Under review



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 11 Pre-Calculus Mathematics (30S)

Strand	Outcome	Outcome Description	Activities	eBooks
Algebra and Number	MB.11P.A.1	Demonstrate an understanding of the absolute value of real numbers.	Absolute Value Expressions Absolute Value	Under review
Algebra and Number	MB.11P.A.2	Solve problems that involve operations on radicals and radical expressions with numerical and variable radicands.	Adding and Subtracting Irrational Numbers Expanding Irrational Number Expressions Dividing Expressions Multiplying Irrational Numbers Dividing Irrational Numbers Simplifying Irrational Numbers Square Roots Irrational Number Form to Index Form Rationalizing the Denominator Rationalizing and Binomials Domain and Range	Grade 9 Exponents Grade 10 Radicals and Exponents
Algebra and Number	MB.11P.A.3	Solve problems that involve radical equations (limited to square roots).	Domain Domain and Range Equations with Square Roots Equations with Cube Roots	Grade 10 Functions
Algebra and Number	MB.11P.A.4	Determine equivalent forms of rational expressions (limited to numerators and denominators that are monomials, binomials, or trinomials).	Algebraic Fractions 1 Algebraic Fractions 2 Algebraic Fractions 3	Grade 10 Factoring
Algebra and Number	MB.11P.A.5	Perform operations on rational expressions (limited to numerators and denominators that are monomials, binomials, or trinomials).	Factoring and Fractions 1 Factoring and Fractions 2	Grade 10 Factoring
Algebra and Number	MB.11P.A.6	Solve problems that involve rational equations (limited to numerators and denominators that are monomials, binomials, or trinomials).	Equations with Fractions Equations with Fractions 2	Grade 10 Factoring
Trigonometry	MB.11PT.1	Demonstrate an understanding of angles in standard position $[0^\circ$ to $360^\circ]$ .	Trig Equations 1 Trig Equations 2 Find Unknown Angles Find Unknown Sides Trig Equations 3 Trigonometric Relationships Which Quadrant? Sign of the Angle Elevation and Depression Trigonometry Problems 1 Trigonometry Problems 2 Area Rule 2	Grade 9 Trigonometry Grade 10 Trigonometric Relationships

### Manitoba Grade 11 Pre-Calculus Mathematics (30S)



Strand	Outcome	Outcome Description	Activities	eBooks
Trigonometry	MB.11PT.2	Solve problems, using the three primary trigonometric ratios (sine, cosine, and tangent) for angles from $0^\circ$ to $360^\circ$ in standard position.	Distance Between Two Points Pythagorean Theorem Pythagorean Triads Sign of the Angle Trig Equations 1 Trig Equations 2 Exact Trigonometric Ratios	Grade 9 Coordinate Geometry Trigonometry Grade 10 Trigonometric Relationships
Trigonometry	MB.11PT.3	Solve problems, using the cosine law and sine law, including the ambiguous case.	Area Rule 1 Area Problems Sine rule 1 Sine rule 2 Cosine rule 1 Cosine rule 2	Grade 10 Non Right Angled Triangles
Relations and Functions	MB.11PR.1	Factor polynomial expressions of the form $ax^2 + bx + c, a \neq 0$ $a^2x^2 - b^2y^2, a \neq 0, b \neq 0$ $a(f(x))^2 + b(f(x)) + c, a \neq 0$ $a^2(f(x))^2 - b^2(g(y))^2, a \neq 0, b \neq 0$ where $a, b$ and $c$ are rational numbers.	Highest Common Algebraic Factor Factoring Factoring Expressions Factoring Quadratics 1 Factoring Quadratics 2 Special Binomial Products Equations Reducible to Quadratics	Grade 8 Expanding and Factoring Grade 10 Quadratic Equations Factoring
Relations and Functions	MB.11PR.2	Graph and analyze absolute value functions (limited to linear and quadratic functions) to solve problems.	Absolute Value Graphs	Under review
Relations and Functions	MB.11PR.3	Analyze quadratic functions of the form $y = a(x - p)^2 + q$ and determine the vertex, domain and range, direction of opening, axis of symmetry, $x$ - and $y$ -intercepts.	Completing the square Completing the Square 2 Graphing Parabolas Vertex of a Parabola Quadratic Equations 1 Quadratic Equations 2	Grade 10 Quadratic Equations Parabolas
Relations and Functions	MB.11PR.4	Analyze quadratic functions of the form $y = ax^2 + bx + c$ to identify characteristics of the corresponding graph, including vertex, domain and range, direction of opening, axis of symmetry, $x$ - and $y$ -intercepts.	Graphing Parabolas	Grade 10 Quadratic Equations Parabolas
Relations and Functions	MB.11PR.5	Solve problems that involve quadratic equations.	Roots of the Quadratic Quadratic Equations 1 Quadratic Equations 2 Quadratic Formula The Discriminant	Grade 10 Quadratic Equations Parabolas





# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 11 Pre-Calculus Mathematics (30S)



Strand	Outcome	Outcome Description	 Activities	 eBooks
Relations and Functions	MB.11P.R.6	Solve, algebraically and graphically, problems that involve systems of linear-quadratic and quadratic-quadratic equations in two variables.	Solve Systems by Graphing Simultaneous Equations 1 Simultaneous Equations 2 Simultaneous Equations 3 Simultaneous Linear Equations	Grade 10 Quadratic Equations Parabolas
Relations and Functions	MB.11P.R.7	Solve problems that involve linear and quadratic inequalities in two variables.	Linear Regions Non Linear Regions Intersecting Linear Regions Intersecting Non Linear Regions Quadratic Inequalities Graphing Inequalities 2	Under review
Relations and Functions	MB.11P.R.8	Solve problems that involve quadratic inequalities in one variable.	Quadratic Inequalities	Under review
Relations and Functions	MB.11P.R.9	Analyze arithmetic sequences and series to solve problems.	Terms: Arithmetic Progressions Sum: Arithmetic Progressions	Grade 11 Sequence and Series: Arithmetic Sequence and Series: Geometric
Relations and Functions	MB.11P.R.10	Analyze geometric sequences and series to solve problems.	Terms: Geometric Progressions 1 Terms: Geometric Progressions 2 Sum: Geometric Progressions Limiting Sum	Grade 11 Sequence and Series: Arithmetic Sequence and Series: Geometric
Relations and Functions	MB.11P.R.11	Graph and analyze reciprocal functions (limited to the reciprocal of linear and quadratic functions).	Under review	Under review





# Manitoba Curriculum Alignment with Mathletics



## Manitoba Grade 12 Applied Mathematics (40S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Financial Maths	MB.12A.FM.1	Solve problems that involve compound interest in financial decision making.	Simple Interest Compound Interest Compound Interest by Formula Depreciation Declining Balance Depreciation Future Value of Investments 1 Future Value of Investments 2	Grade 10 Interest Depreciation
Financial Maths	MB.12A.FM.2	Analyze costs and benefits of renting, leasing, and buying.	Depreciation Declining Balance Depreciation	Grade 10 Depreciation
Financial Maths	MB.12A.FM.3	Analyze an investment portfolio in terms of interest rate, rate of return and total return	Simple Interest Compound Interest Compound Interest by Formula Depreciation Declining Balance Depreciation Future Value of Investments 1 Future Value of Investments 2	Grade 10 Interest Depreciation
Logical Reasoning	MB.12A.L.1	Analyze puzzles and games that involve numerical and logical reasoning, using problem-solving strategies.	Financial Expectation	Under review
Logical Reasoning	MB.12A.L.2	Solve problems that involve the application of set theory.	Venn Diagrams Tree Diagrams Dice and Coins Probability Tables Two-way Table Probability	Grade 9 Probability
Logical Reasoning	MB.12A.L.3	Solve problems that involve conditional statements.	Venn Diagrams Tree Diagrams Dice and Coins Probability Tables Two-way Table Probability	Grade 9 Probability
Probability	MB.12A.P.1	Interpret and assess the validity of odds and probability statements.	Simple Probability Complementary Events Probability With Replacement Probability Without Replacement Probability Tables Two-way Table Probability Relative Frequency Financial Expectation Venn Diagrams Tree Diagrams	Grade 9 Probability



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 12 Applied Mathematics (40S)



Strand	Outcome	Outcome Description	 Activities	 eBooks
Probability	MB.12A.P.2	Solve problems that involve the probability of mutually exclusive and non-mutually exclusive events.	Complementary Events Venn Diagrams	Grade 9 Probability
Probability	MB.12A.P.3	Solve problems that involve the probability of independent and dependent events.	Probability With Replacement Probability Without Replacement	Grade 9 Probability
Probability	MB.12A.P.4	Solve problems that involve the fundamental counting principle.	Counting Principle Counting Techniques 1 Counting Techniques 2	Under review
Probability	MB.12A.P.5	Solve problems that involve permutations.	Permutations and Probability	Under review
Probability	MB.12A.P.6	Solve problems that involve combinations.	Combinations and Probability	Under review
Relations and Functions	MB.12A.R.1	Represent data, using polynomial functions (of degree $\leq 3$ ), to solve problems.	Graphing from a Table of Values Graphing Parabolas Graphing Cubics	Grade 10 Sketching Polynomials Simple Nonlinear Graphs Exponential and Power Graphs
Relations and Functions	MB.12A.R.2	Represent data, using exponential and logarithmic functions, to solve problems.	Graphing Exponentials Exponential or Log Graph? Exponential Growth and Decay	Grade 10 Simple Nonlinear Graphs Exponential and Power Graphs
Relations and Functions	MB.12A.R.3	Represent data, using sinusoidal functions, to solve problems.	Sine and Cosine Curves Period and Amplitude	Under review
Mathematics research Project	MB.12A.RP.1	Research and give a presentation on a current event or an area of interest that involves mathematics.	Data Terms Finding the Average Mean Median Mode Mean from Frequency Table Mode from Frequency Table Median from Frequency Median and Cumulative Frequency Data Extremes and Range	Grade 9 Data



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 12 Applied Mathematics (40S)


Strand	Outcome	Outcome Description	 Activities	 eBooks
Design and Measurement	MB.12A.D. 1	Analyze objects, shapes, and processes to solve cost and design problems.	Perimeter: Composite Shapes Area: Composite Shapes Area: Circles 1 Area: Sectors (Degrees) Area: Annulus Volume: Prisms Volume: Cylinders Volume: Pyramids Volume: Cones Volume: Spheres Volume: Composite Figures Volume: Rearrange Formula Ratio Unitary Method Ratio and Proportion Dividing a Quantity in a Ratio Rates Word Problems Elevations Field Diagrams Floor Plans House Plan Symbols Offset Diagrams	Grade 9 Perimeter and Area Measuring Solids Decimals



# Manitoba Curriculum

## Alignment with Mathletics



### Manitoba Grade 12 Essential Mathematics (40S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Analysis of Games and Numbers	MB.12E5.A.1	Analyze puzzles and games that involve logical reasoning, using problem-solving strategies.	Dice and Coins Financial Expectation	Grade 9 Probability
Vehicle Finance	MB.12E5.V1	Solve problems that involve the acquisition, operation, and maintenance of a vehicle, when <ul style="list-style-type: none"> <li>• buying</li> <li>• leasing</li> <li>• leasing to buy.</li> </ul>	Under review	Under review
Statistics	MB.12E5.S.1	Solve problems that involve measures of central tendency, including <ul style="list-style-type: none"> <li>• mean</li> <li>• median</li> <li>• mode</li> <li>• weighted mean</li> <li>• trimmed mean.</li> </ul>	Mean Median Mode Mean from Frequency Table Median from Frequency Mode from Frequency Table Median and Cumulative Frequency Data Extremes and Range Box-and-Whisker Plots 1 Box-and-Whisker Plots 2	Grade 9 Data Grade 10 Interpreting Data
Statistics	MB.12E5.S.2	Analyze and describe percentiles.	Box-and-Whisker Plots 1 Box-and-Whisker Plots 2	Grade 10 Interpreting Data
Precision Measurement	MB.12E5.P1	Demonstrate an understanding of the limitations of measuring instruments, including <ul style="list-style-type: none"> <li>• precision</li> <li>• accuracy</li> <li>• uncertainty</li> <li>• tolerance.</li> </ul>	Error in Measurement Percentage Error	Under review
Career Life	MB.12E5.C.1	Create a plan for the future including possible career choices and their requirements.	Wages and Salaries Commission Working Overtime Special Allowances Bonuses and Leave Loading Piecework and Royalties Calculating Income Tax Deductions and Tax Instalments Reading from a Bill Calculating Dividends Credit Card Repayments Shares Budgeting Purchase Options Net Pay Deductions and Net Pay	Grade 9 Earning Money



# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 12 Essential Mathematics (40S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Analysis of Games and Numbers	MB.12E6.A.1	Analyze puzzles and games that involve logical reasoning, using problem-solving strategies.	Dice and Coins Financial Expectation	Under review
Home Finance	MB.12E6.H.1	Solve problems involving the purchase and maintenance of a house.	Comparing Loans Comparing Home Loans	Grade 10 Interest
Geometry and Trigonometry	MB.12E6.G.1	Solve problems by using the sine law and cosine law, excluding the ambiguous case.	Sine Rule 1 Sine Rule 2 Cosine Rule 1 Cosine Rule 2	Grade 10 Non Right Angle Triangles
Geometry and Trigonometry	MB.12E6.G.2	Solve problems that involve <ul style="list-style-type: none"> <li>triangles</li> <li>quadrilaterals</li> <li>regular polygons.</li> </ul>	Plane Figure Theorems Angle Sum of a Triangle Exterior Angles of a Triangle Area: Triangles Area: Squares and Rectangles Area: Right Triangles Area: Quadrilaterals Area: Parallelograms Area: Composite Shapes Area: Compound Figures Angle Sum of a Quadrilateral Interior and Exterior Angles	Grade 9 Perimeter and Area Polygons and Angles
Business Finance	MB.12E6.B.1	Critique the viability of small business options by considering <ul style="list-style-type: none"> <li>expenses</li> <li>sales</li> <li>profit or loss.</li> </ul>	Breakeven Point Linear Modelling	Grade 9 Linear Relationships
Business Finance	MB.12E6.B.2	Demonstrate an awareness of the government taxation forms and procedures involved in owning a business.	Breakeven Point Linear Modelling	Grade 9 Linear Relationships
Probability	MB.12E6.B.1	Analyze and interpret problems that involve probability.	Probability Scale Simple Probability Complementary Events Dice and Coins Probability Tables Two-way Table Probability Relative Frequency Financial Expectation Venn Diagrams Tree Diagrams	Grade 9 Probability



# Manitoba Curriculum

## Alignment with Mathletics

### Manitoba Grade 12 Pre-Calculus Mathematics (40S)

Strand	Outcome	Outcome Description	Activities	eBooks
Trigonometry	MB.PT.1	Demonstrate an understanding of angles in standard position, expressed in degrees and radians.	Length of an Arc Converting Radians and Degrees	Under review
Trigonometry	MB.PT.2	Develop and apply the equation of the unit circle.	Graphing Circles	Grade 10 Circle Graphs
Trigonometry	MB.PT.3	Solve problems, using the six trigonometric ratios for angles expressed in radians and degrees.	Exact Trigonometric Ratios Sign of the Angle	Grade 9 Trigonometry Grade 10 Trigonometric Relationships
Trigonometry	MB.PT.4	Graph and analyze the trigonometric functions sine, cosine, and tangent to solve problems.	Sine and Cosine Curves Trig Graphs in Radians Sine and Cosine Curves Period and Amplitude	Grade 10 Trigonometric Relationships
Trigonometry	MB.PT.5	Solve, algebraically and graphically, first and second degree trigonometric equations with the domain expressed in degrees and radians.	Trig Equations 1 Trig Equations 2 Trig Equations 3 Trig Equations 4	Grade 10 Trigonometric Relationships
Trigonometry	MB.PT.6	Prove trigonometric identities, using reciprocal identities quotient identities, Pythagorean identities, sum or difference identities (restricted to sine, cosine, and tangent), double-angle identities (restricted to sine, cosine, and tangent).	Converting Radians and Degrees Trigonometric Relationships Double Angles Exact Trigonometric Ratios Sign of the Angle Which Quadrant? Trig Equations 1 Trig Equations 2 Trig Equations 3 Trig Equations 4	Under review
Relations and Functions	MB.P.R.1	Demonstrate an understanding of operations on, and compositions of, functions.	Composition of functions 1	Grade 10 Functions
Relations and Functions	MB.P.R.2	Demonstrate an understanding of the effects of horizontal and vertical translations on the graphs of functions and their related equations.	Under review	Grade 10 Functions
Relations and Functions	MB.P.R.3	Demonstrate an understanding of the effects of horizontal and vertical compressions and stretches on the graphs of functions and their related equations.	Under review	Grade 10 Functions





# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 12 Pre-Calculus Mathematics (40S)



Strand	Outcome	Outcome Description	Activities	eBooks
Relations and Functions	MB.P.R.4	Apply translations, compressions and stretches to the graphs and equations of functions.	Under review	Grade 10 Functions
Relations and Functions	MB.P.R.5	Demonstrate an understanding of the effects of reflections on the graphs of functions and their related equations, including reflections through the $x$ -axis, $y$ -axis and line $y = x$ .	Under review	Grade 10 Functions
Relations and Functions	MB.P.R.6	Demonstrate an understanding of inverses of relations.	Under review	Grade 10 Functions
Relations and Functions	MB.P.R.7	Demonstrate an understanding of logarithms.	Log Laws	Grade 10 Logarithms
Relations and Functions	MB.P.R.8	Demonstrate an understanding of the product, quotient, and power laws of logarithms.	Log Laws	Grade 10 Logarithms
Relations and Functions	MB.P.R.9	Graph and analyze exponential and logarithmic functions.	Graphing Exponentials Domain and Range Exponential or Log Graph?	Grade 10 Logarithms Exponential and Power Graphs
Relations and Functions	MB.P.R.10	Solve problems that involve exponential and logarithmic equations.	Exponential Equations Equations with Logs Exponential Growth and Decay	Grade 10 Logarithms Exponential and Power Graphs
Relations and Functions	MB.P.R.11	Demonstrate an understanding of factoring polynomials of degree greater than 2 (limited to polynomials of degree $\leq 5$ with integral coefficients).	Polynomial Long division	Grade 10 Polynomials
Relations and Functions	MB.P.R.12	Graph and analyze polynomial functions (limited to polynomial functions of degree $\leq 5$ ).	Identifying Graphs Non Linear Graphs Graphing Parabolas Graphing Cubics Graphing from a Table of Values 2 Intercepts	Grade 10 Simple Nonlinear Graphs Sketching Polynomials
Relations and Functions	MB.P.R.13	Graph and analyze radical functions (limited to functions involving one radical).	Domain and Range	Grade 10 Functions
Relations and Functions	MB.P.R.14	Graph and analyze rational functions (limited to numerators and denominators that are monomials, binomials, or trinomials).	Domain and Range	Grade 10 Functions





# Manitoba Curriculum Alignment with Mathletics

## Manitoba Grade 12 Pre-Calculus Mathematics (40S)

Strand	Outcome	Outcome Description	 Activities	 eBooks
Permutations, Combinations and Binomial Theorem	MB.P.P.1	Apply the fundamental counting principle to solve problems.	Counting Techniques 1 Counting Techniques 2	Under review
Permutations, Combinations and Binomial Theorem	MB.P.P.2	Determine the number of permutations of $n$ elements taken $r$ at a time to solve problems.	Under review	Under review
Permutations, Combinations and Binomial Theorem	MB.P.P.3	Determine the number of combinations of $n$ different elements taken $r$ at a time to solve problems.	Under review	Under review
Permutations, Combinations and Binomial Theorem	MB.P.P.4	Expand powers of a binomial in a variety of ways, including using the binomial theorem (restricted to exponents that are natural numbers).	Pascal's Triangle, Expansion Tree Diagrams	Grade 12 The Binomial Theorem



# Notes





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