Dear Parents, Guardians, and Grade 10 students: September 2016

On behalf of the grade 10 Mathematics Department, welcome to BLMS! For a successful year in mathematics, we feel that you should know about certain guidelines and expectations we have for our students. Please read these guidelines carefully, then detach, sign, and return the slip below. If you find email a convenient way of communication, feel free to provide your email address on the slip below, but please do not feel obligated to do so. There is also a list of materials required for Math 10 at the bottom of this page, and there is a detailed list of the Math 10 evaluation breakdown, units, and topics on the reverse side of this sheet.

***Guidelines and Expectations:***

* There is a curriculum set forth by the Department of Education for Math 10 to which we are legally bound. The province has two curricula for Math 10; **Number Relations & Functions 10** and **Geometry, Measurement and Finance 10**. Each course will have its own final assessment and each is awarded one credit upon successful completion of the course. Students must successfully complete both courses in order to graduate.
* A consistent method of calculating marks has been established and reviewed with students. The pass mark for all students at BLMS in all subject areas is 60%. Math assessments are held in January and June and are based on prescribed outlines.
* Test and evaluation dates are announced well in advance, and students should plan ahead for scheduled tests and assessments. Make-up tests for students who miss a test will be written at a time decided upon by the students and the teacher.
* Homework is important and necessary and counts towards each report card mark. Homework assigned allows students to discover and understand new concepts presented in class. All assigned homework must be completed; this means visible efforts was put forth for **every** question assigned in a clear manner using appropriate mathematical strategies, even for questions that may seem difficult.
* All assignments, worksheets, quizzes, tests, and exams **MUST BE COMPLETED IN PENCIL**.
* Students are expected to show **every** step involved in solving assignment, test, and exam questions. We cannot mark what we do not see.
* Students must be on time for class, bring necessary math equipment, follow the established classroom rules, behave respectfully, complete assignments on time, attend class regularly, and work to the best of their ability.
* It is the student’s responsibility to ask for extra help when experiencing difficulty or you may contact the teacher directly if you feel your child is struggling.
* Extra help is available (on a day to be announced) during lunch for those students who are attentive in class, put forth a genuine effort, and complete assigned work.

Math is **FUN**, and being successful in this subject often leads to the development of excellent problem solving skills. Please help us to do the best that we can in teaching students to be successful in mathematics!

Sincerely,

Bobby-Jo Hickey and Laura Ketch ☺

**REQUIRED MATERIALS FOR MATH 10:**

* Math notebook (a binder with loose leaf works best)
* graph paper (no more than 50 sheets required)
* **a scientific calculator**
* a ruler (15 cm or 30 cm)
* **pencils** (lots) and erasers
* **Geometry set**

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We have read and understand the grade 10 math department’s guidelines and expectations for grade 10 math students.

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Student’s name (please print clearly) Parent’s/Guardian’s signature

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Student’s signature Parent’s/Guardian’s email address (if applicable)

**Number Relations & Functions (September 2016 – January 2017):**

***Bobby-Jo Hickey and Laura Ketch***

**phone: (506) 523-7160**

***MATH 10 EVALUATION:***

 **Tests 35% Quizzes 25%**

 **Assignments 25% Homework 15%**

##

 **Note:** The January evaluation will cover material learned between September and January.

**Course Text: *(Pearson) Foundations and Pre-Calculus Mathematics 10***

***MATH 10 CURRICULUM AND TIMELINE:***

**Unit 1: Algebra and Number**

**Chapter 1: Factors and Products (13 days)** Factors: *Prime factors, Greatest Common Factor (GCF), Least Common Multiple (LCM), Square Root, Cube Root*

Polynomials: *Substitution, Multiplication of Polynomials, Common factor Polynomials, Trinomial Factoring, Difference of Squares*

**Chapter 2: Roots and Powers (12 days)** Irrational Numbers: *Real Number System, Radicals (Entire to Mixed, Different Index)*

Powers: *Integral exponents, Rational exponents, Literal exponents, Literal bases*

**Unit 2: Relations and Functions**

**Chapter 3: Relations and Functions (13 days)**

Data, Graphs & Situations: *Interpret / Describe a graph, Graph Situations, Graph given data or table of values, Domain / Range, Continuous / Discrete data*

 Relations and Functions: *Relation vs. Function, Function vs. Non-function*

 Linear Relations: *Create a Table of Values given an equation, Dependent / Independent Variables, Determine Linear Relations (Situation, Graph, Table of Values, Set of Ordered Pairs, Equation)*

**Chapter 4: Relations and Functions** (Continued) **(6 days)**

Function Notation: *Express equation to function notation and vice-versa, Solve functions for dependant and independent variables, Sketch graphs*

**Chapter 5: Linear Functions (22 days)** Slope: $\frac{rise}{run}$ ; $\frac{change in y}{change in x}$ ; $\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}$,

 *Parallel vs. Perpendicular lines*

Characteristics of Linear Relations: *Intercepts, Slope, Domain / Range*

Equations of linear Relations: *Slope Intercept Form (y=mx+b), General Form (ax+by+c=0, where a>0), Slope – Point Form [(y-y1)=m(x-x1)], Express a linear relation in each of the different forms, Rewrite one form to another form, Match graphs to different forms of linear relation equations.*

Equation of a line: *Determine the equation of a line (given*

*Graph, Point and slope, Two points, Point and an equation of a parallel or perpendicular line, A scatter plot)*

**Chapter 6: Systems of Linear Equations (11 days)**

Systems of Equations: *Model the situation, Explain point of intersection, Verify that a point is a solution, One solution, no solution, infinite number of solutions, Solve problems using systems of equations*

**Chapter 7: Distance / Midpoint (8 days)**

Distance / Midpoint:

 *Distance =* $\sqrt{(x\_{2}-x\_{1})^{2}+(y\_{2}-y\_{1})^{2}}$ *Midpoint=* $\left(\frac{x\_{1}+x\_{2}}{2} , \frac{y\_{1}+y\_{2}}{2}\right)$ *Determine the distance between two points Determine the midpoint between two points*

**Geometry, Measurement and Finance 10 (September 2016 – January 2017):**

***Bobby-Jo Hickey and Laura Ketch***

**phone: (506) 523-7160**

***MATH 10 EVALUATION:***

 **Tests 35% Quizzes 25%**

 **Assignments 25% Homework 15%**

##

 **Note:** The January evaluation will cover material learned between September and January.

**Course Text: *(Pacific Educational Press) MathWorks 10 New Brunswick Edition***

***MATH 10 CURRICULUM AND TIMELINE:***

Continuing throughout the semester: *Solving Problems requiring manipulation and application of Formulas: Perimeter, Area, Volume, Capacity, Pythagorean Theorem, Primary trig ratios, Income, Currency exchange, Interest, Finance charges*

**Chapter 1: Unit Pricing & Currency Exchange (13 days)**

Unit Pricing and currency exchange using proportional reasoning: *Compare Unit prices, Determine best buy, Compare sales promotion techniques,*

 *Increase/Decrease in price depending on*

 *percentage discounts/ extra charges,*

*Currency exchange (proportional reasoning, Selling rate / purchasing rate, Estimate cost in Canadian currency while in foreign country, Convert between Canadian and foreign currency using formulas, charts or tables)*

**Chapter 2: Earning Income (7 days)** Describe and identify various jobs that use different methods of earning income *(e.g. Hourly wage, Wage + tips, Piecework, Salary, Commission, Contract, Bonus, Shift premiums)*

 Determine in decimal form, the total time worked in hours and minutes *(Time,Time and one half, Double time)*

 Determine Gross pay *(Given: Base hourly wage with and without tips, Base hourly wages plus overtime, Base hourly wage plus commission, Single commission)*

 Gross pay vs. Net pay*: Canadian Pension Plan (CPP), Employment Insurance (EI), Income Tax deductions*

 Calculate Net Pay *(Given: Health plans, Uniforms, Union Dues, Charitable donations, Payroll tax)*

**Chapter 3: Financial Services (13 days)** Financial Institution Services: Banking services (*Online services, Types of*

 *accounts*)

 Bank Charges (*Service Charges*)

Advantages / Disadvantages of: *Online banking, Debit card purchases*

 Ways to ensure security: *Passwords, Encryption,*

 *Protection of personal identification*

 *number*

Compound Interest: *Simple Interest (I=Prt), Describe the effect of different periods, Simple vs. Compound interest, Estimate the time required for a given investment to double in value*

Credit Options:

 Advantages and disadvantages of: *Bank / Store credit cards, Personal loans, Lines of credit, Overdraft*

Issues related to credit: *Service charges, Interest, Payday loans, Sales promotions*

**Chapter 4: System of Measurement and Conversions (17 days)**

Système International (SI): *Explain how the SI system was developed, Base units, Why are decimals used?, Identify contexts that involve the SI system, Conversions*

Imperial System: *Explain how the Imperial system was developed, Base units, Why are fractions used?, Identify contexts that involve the Imperial system, Conversions*

 Solve problems using the SI and Imperial systems Determine referent measurements

 Conversions between SI and Imperial systems

**Chapter 5: Mass, Temperature, Surface Area, Volume and Capacity (26 days)**

Area of 2-D shapes: *Decimal / fraction measurements, SI and Imperial systems, Convert from one unit squared to another unit squared, Regular and composite 2-D shapes including circles*

Volume / Surface Area of 3-D shapes: *Right cone, right cylinder, right prism, right pyramid or sphere, Find an unknown dimension when given volume or surface area, Composite 3-D objects*

**Chapter 6: Trigonometry of Right Triangles (13 days)**

* Pythagorean Theorem
* Primary Trigonometric Ratios
* Parallel, Perpendicular, Transversal lines and the angles formed between them: *Identify pairs of angles and determine*

*the value of Corresponding, Vertically opposite, Alternate, interior, Alternate exterior, Interior angles on the same side of the transversal, Exterior angles on the same side of the transversal*

* Angles: *Acute, right, obtuse, straight, reflex; Draw, replicate,*

 *construct, bisect and solve problems, Referent*

 *angles: 30, 45, 60, 90, 180*

Ongoing throughout the semester: Analyzing Puzzles and Games

Problem Solving strategies: *Guess and check, Look for a pattern, Make a systematic list, Draw or model, Eliminate possibilities, Simplify the original problem, Work backwards, Develop alternative approaches*