Senior 1 Transitional Mathematics

Outcomes by Unit

Half Course I

Unit A: Learning to Learn

Demonstrate, through discussion and written work, the following behaviours:
- **persistence**
- **managing impulsivity**
- **listening with empathy and understanding**
- **flexibility in thinking**
- **thinking about thinking**

Use specific strategies in different problem solving situations.	(A-1)
Demonstrate a willingness to work independently as well as to work interdependently as a team member	(A-2)
Use questioning/clarifying to improve creative thinking	(A-3)

Unit B: Smart Math

Develop number sense by explaining mental strategies for calculating and estimating solutions to problems.

Use a visual model to make reasonable estimates of percent and corresponding number values.	(B-1)
Use reasoning to mentally calculate 50% of a variety of numbers, and explain the method.	(B-2)
Use $\frac{1}{2}$ and 0.50 along with 50% to perform mental calculations.	(B-3)
Use reasoning to mentally calculate 100% when 50% is known and explain the strategies for calculation.	(B-4)
Use reasoning to mentally calculate 25% (including $\frac{1}{4}$ and 0.25) of a variety of numbers and explain the strategies for calculation.	(B-5)
Use reasoning to mentally calculate $12\frac{1}{2}$ % (including $\frac{1}{8}$ and 0.125) of a variety of numbers and explain the method(s) used to solve the problems.	(B-6)

Use a concrete model to build and develop an understanding of addition and subtraction of integers

Use a "charges model" to represent operations involving signed numbers.	(B-7)
Model and explain addition involving integers and understand the need to apply the "zero principle" to model some situations.	(B-8)
Model and explain subtraction involving integers and understand the need to apply the "zero principle" to model some situations.	(B-9)

Use concrete, pictorial and symbolic representations of algebraic expressions

Recognize patterns and use them to develop oral expressions	(B-10)
Model, sketch, and represent symbolically an algebraic expression.	(B-11)

Unit C: Investigations

Develop and use mathematical strategies, concepts, and skills in the context of mathematical investigations.

Conduct and analyze mathematical investigations	(C-1)
Use forms to outline procedures used, difficulties encountered, and patterns discovered.	(C-2)

Unit D: Activities for Skill Development

Complete activities intended to motivate and remediate concepts and skills in arithmetic and geometry

Visualize, compare and explain fractions	(D-1)
Round and estimate whole numbers and decimals	(D-2)
Apply arithmetic operations on fractions	(D-3)
Identify the operation(s) needed in problem solving	(D-4)
Understand and apply concepts and vocabulary related to triangles	(D-5)
Read and interpret various line graphs	(D-6)

Unit E: Money Management

Develop and use mathematical strategies, concepts, and/or skills to solve problems in real-life contexts.

Make decisions concerning purchasing and justify those decisions using a five-step purchasing process	(E-1)
Prepare a written report outlining an item to be purchased, researching the best buy, investigating options, and summarizing the final decisions.	(E-2)

Unit F: Scheme-A-Team

Develop and use mathematical strategies, concepts, and/or skills to solve problems in real-life contexts.

Make decisions concerning the operation of a team and justify those decisions both practically and mathematically	(F-1)
Prepare and present a written report outlining and justifying facility selection, league expenses, tournament expenses, and total expenses for a team project	(F-2)

Half Course II

Unit A: Learning to Learn

Demonstrate, through discussion and written work, the following behaviours:
- **persistence**
- **managing impulsivity**
- **listening with empathy and understanding**
- **flexibility in thinking**
- **thinking about thinking**
- **checking for accuracy and precision**
- **drawing on past knowledge**
- **questioning and problem posing**
- **precision of language and thought**

Use specific strategies in different problem solving situations.	(A-1)
Demonstrate a willingness to work independently as well as to work interdependently as a team member	(A-2)
Use questioning/clarifying to improve creative thinking	(A-3)
Recognize a preference for learning through the theory of multiple intelligences.	(A-4)

Unit B: Smart Math

Use a variety of methods including concrete models, to develop an understanding of variables, expressions, and equations

Use a concrete model to demonstrate the concept of balance in algebra	(B-1)
Substitute and determine the values for first-degree algebraic expressions and equations given the value for the variable.	(B-2)
Simplify algebraic expressions through the collection of like terms.	(B-3)
Solve one- and two-step first-degree linear equations containing one variable.	(B-4)
Model and solve one- and two-step first-degree linear equations using Algebra Tiles	(B-5)

Use a concrete model to build and develop an understanding of multiplication and division of integers

Model and explain multiplication involving integers	(B-6)
Use inverse operations to explain division of integers	(B-7)

Develop number sense by explaining mental strategies for calculating and estimating solutions to problems

Review Half Course 1 benchmarks (100%, 50%, 25%, $12\frac{1}{2}$ %)	(B-8)
Use reasoning to mentally calculate 10% of a variety of numbers and explain the method(s) used to solve the problems	(B-9)
Use reasoning to mentally calculate 5% of a variety of numbers and explain the strategies for the calculations	(B-10)
Use established percent benchmarks and reasoning to mentally calculate answers to number problems, and explain the methods used.	(B-11)

Unit C: Investigations in Algebra

Develop and use mathematical strategies, concepts, and skills in the context of mathematical investigations in algebra

Conduct and analyze mathematical investigations to determine the pattern and express the relationship algebraically	(C-1)
Write a formal report about an investigation	(C-2)

Unit D: Activities for Skill Development

Complete activities that are intended to motivate as well as remediate introductory algebra

Translate between written and algebraic expressions or between algebraic and written expressions	(D-1)
Substitute and determine the values for first degree algebraic expressions, given the value of one or more variables	(D-2)
Simplify algebraic expressions through the collection of like terms.	(D-3)
Multiply monomials by monomials	(D-4)
Multiply polynomials by a constant using the distributive property	(D-5)
Solve and verify solutions to one- and two-step linear equations containing one variable	(D-6)
Identify the number of different terms in any given polynomial	(D-7)

Unit E: Nutrition and Fitness

Develop and use mathematical strategies, concepts, and/or skills to solve problems in real-life contexts

Make decisions concerning nutrition and activity and justify those decisions both practically and mathematically	(E-1)
Prepare a written report outlining and justifying a fitness program including nutrition, realistic activity or exercise, and whether a person would gain or lose weight using this fitness program	(E-2)

Unit F: Probability and Sampling

Develop and use mathematical strategies, concepts and/or skills to solve problems concerning the measurement of perimeter and area, and the use of percent, ratio, scale and proportions in real-life contexts.

Make decisions concerning room renovations and justify those decisions both practically and mathematically	(F-1)
Prepare and present a written report outlining and justifying design considerations including measurements, scale drawings, and the cost of materials for a room renovation project	(F-2)

http://www.edu.gov.mb.ca/ks4/cur/math/mathcurr.html