

Math 8 Course Outline

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BIG IDEAS *Students are expected to understand the following:*

Number represents, describes, and compares the quantities of ratios, rates, and percents.

Computational fluency and flexibility extend to operations with fractions.

Discrete linear relationships can be represented in many connected ways and used to identify and make generalizations

The relationship between surface area and volume of 3D objects can be used to describe, measure, and compare spatial relationships.

Analyzing data by determining averages is one way to make sense of large data sets and enables us to compare and interpret.

Curricular Competencies *Students are expected to be able to do the following:*

Reasoning and analyzing

1. Use logic and patterns to solve puzzles and play games
2. Use reasoning and logic to explore, analyze, and apply mathematical ideas
3. Estimate reasonably
4. Demonstrate and apply mental math strategies
5. Use tools or technology to explore and create patterns and relationships, and test conjectures
6. Model mathematics in contextualized experiences

Understanding and solving

7. Apply multiple strategies to solve problems in both abstract and contextualized situations
8. Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving
9. Visualize to explore mathematical concepts
10. Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures

Communicating and representing

11. Use mathematical vocabulary and language to contribute to mathematical discussions
12. Explain and justify mathematical ideas and decisions
13. Communicate mathematical thinking in many ways
14. Represent mathematical ideas in concrete, pictorial, and symbolic forms

Connecting and reflecting

15. Reflect on mathematical thinking
16. Connect mathematical concepts to each other and to other areas and personal interests
17. Use mathematical arguments to support personal choices
18. Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts

Content: *Students are expected to know the following:*

1. perfect squares and cubes
2. square and cube roots
3. percents less than 1 and greater than 100 (decimal and fractional percents)
4. numerical proportional reasoning (rates, ratio, proportions, and percent)
5. operations with fractions (addition, subtraction, multiplication, division, and order of operations)
6. discrete linear relations (extended to larger numbers, limited to integers)

7. expressions- writing and evaluating using substitution
8. two-step equations with integer coefficients, constants, and solutions
9. surface area and volume of regular solids, including triangular and other right prisms and cylinders
10. Pythagorean theorem
11. construction, views, and nets of 3D objects
12. central tendency
13. theoretical probability with two independent events
14. financial literacy — best buys

Core Competencies: Students will be accessing the Core Competencies in all their curricular areas. They may be self-assessing the Core Competencies on their Ongoing Communications. Summative reports at the end of the course will report that the student has engaged in this self-assessment.

COMMUNICATION	THINKING	PERSONAL AND SOCIAL RESPONSIBILITY
The communication competency encompasses the set of abilities that a student uses to impart and exchange information, experience and ideas, to explore the world around them, to understand and effectively engage in the use of digital media.	The thinking competency encompasses the knowledge, skills and processes we associate with intellectual development and is demonstrated through: <ul style="list-style-type: none"> creative thinking critical thinking 	The personal and social responsibly competency includes <ul style="list-style-type: none"> positive personal and cultural identity personal awareness and responsibility social responsibility

Reporting Procedure:

- There will be a minimum of 2 Ongoing Communications of Student Learning per semester
- At mid-course, there will be a Progress Report (January)
- There will be a formal, Summative Report at the end of the course (June)

Assessment:

The following strength-based Provincial proficiency scale will be used to describe student progress in relation to **grade-level expectations**. If students are not able to demonstrate their understanding within grade-level expectations then the scale will be intentionally left blank.

Emerging	Developing	Proficient	Extending
in the acquisition of knowledge, skills, strategies and processes.	the ability to apply knowledge, skills, strategies and processes.	in the consistent application of knowledge, skills, strategies and processes.	knowledge, skills, strategies and processes creatively and strategically
The student demonstrates an initial understanding of the concepts and competencies.	The student demonstrates a partial understanding of the concepts and competencies.	The student demonstrates a complete understanding of the concepts and competencies.	The student demonstrates a sophisticated understanding of the concepts and competencies.

Support:

Counseling: Crystal Lynn: A - Ge Kate Gustafson: Gi – Pa Shannon McRae: Pe - Z
Academic: Aboriginal Support: Ms. N Wedholm (C120)

Materials Required

- A three ring binder and loose-leaf paper
- Pencil and eraser
- Calculator** – Scientific
Recommended: Casio, Texas Instruments, Sharp

