



## Grade 8 Mathematics

Inspired education.  
Inspiring students.

**Description and Overall Expectations:** This curriculum is designed to help students build the solid conceptual foundation in mathematics that will enable them to apply their knowledge and further their learning successfully. It is based on the belief that students learn mathematics most effectively when they are given opportunities to investigate ideas and concepts through problem solving and are then guided carefully into an understanding of the mathematical principles involved. At the same time, it promotes a balanced program in mathematics. The acquisition of operational skills remains an important focus of the curriculum. Attention to the *processes* that support effective learning of mathematics is also considered to be essential to a balanced mathematics program.

**Math Processes:** problem-solving, reasoning and proving, reflecting, selecting tools and computational strategies, connecting, representing, and communicating.

**Number Sense and Numeration:** represent, compare, and order equivalent representations of numbers, including those involving positive exponents; solve problems involving whole numbers, decimal numbers, fractions, and integers, using a variety of computational strategies; solve problems by using proportional reasoning in a variety of meaningful contexts.

**Measurement:** research, describe, and report on applications of volume and capacity measurement; determine the relationships among units and measurable attributes, including the area of a circle and the volume of a cylinder.

**Geometry and Spatial Sense:** demonstrate an understanding of the geometric properties of quadrilaterals and circles and the applications of geometric properties in the real world; develop geometric relationships involving lines, triangles, and polyhedra, and solve problems involving lines and triangles; represent transformations using the Cartesian coordinate plane, and make connections between transformations and the real world.

**Patterning and Algebra:** represent linear growing patterns (where the terms are whole numbers) using graphs, algebraic expressions, and equations; model linear relationships graphically and algebraically, and solve and verify algebraic equations, using a variety of strategies, including inspection, guess and check, and using a “balance” model.

**Management and Probability:** collect and organize categorical, discrete, or continuous primary data and secondary data and display the data using charts and graphs, including frequency tables with intervals, histograms, and scatter plots; apply a variety of data management tools and strategies to make convincing arguments about data; use probability models to make predictions about real-life events.

**Subject Resources:** See teacher and school for the list of key resources, digital tools, sites, passwords, including replacement cost for resources if lost or damaged.

**Catholic Graduate Expectations:** Our goal for all students is to experience an education based on our Catholic Graduate Expectations. <http://www.iceont.ca>

We work in community to develop graduates that are:

- Discerning Believers Formed in the Catholic Faith Community
- Effective Communicators
- Reflective and Creative Thinkers
- Self-Directed, Responsible, Life-Long Learners
- Collaborative Contributors

- Caring Family Members
- Responsible Citizens

**Assessment, Evaluation and Reporting:** The primary purpose of assessment and evaluation is to improve student learning. Students will understand what is expected of them, using learning goals, and success criteria, based on the overall expectations. Feedback (self, peer, teacher) supports learning, and plays a critical role in academic achievement and success.

The development of learning skills and work habits is a key indicator of future success. The following learning skills and work habits will be developed, assessed, and reported during this course:

1. Responsibility fulfills responsibilities and commitments (*e.g. accepts and acts on feedback*)
2. Organization manages time to complete tasks and achieve goals (*e.g. meets goals, on time*)
3. Independent work uses class time appropriately to complete tasks (*e.g. monitors own learning*)
4. Collaboration works with others, promotes critical thinking (*e.g. provides feedback to peers*)
5. Initiative demonstrates curiosity and an interest in learning (*e.g. sets high goals*)
6. Self-Regulation sets goals, monitors progress towards achieving goals (*e.g. sets, reflects goals*)

Group work supports collaboration, an important 21<sup>st</sup> century skill. This will be assessed only as a learning skill. Homework may also be assessed as a learning skill. Evaluation completed in class will be based only on individual student work. Regular attendance is important to support group work, various forms of feedback, and to allow students to demonstrate evidence of their learning. Students are responsible for providing evidence of their own learning in class, within given timelines. Next steps in response to academic integrity issues, such as lack of work completion, plagiarism, or other forms of cheating, range from providing alternate opportunities, to a deduction of marks.

The achievement chart identifies four levels, based on achievement of the overall expectations:

Level 1	achievement falls below the provincial standard	(50-59%)
Level 2	achievement approaches the provincial standard	(60-69%)
Level 3	achievement is at the provincial standard	(70-79%)
Level 4	achievement surpasses the provincial standard	(80-100%)

### **Reporting on Student Learning:**

Student learning will include a variety of assessment tasks designed to demonstrate students' development in their knowledge and understanding, thinking, communication and application of all overall expectations.

The fall progress report gives feedback on learning skills (i.e, needs improvement, satisfactory, good or excellent) and emerging student achievement (i.e. progressing with difficulty, progressing well, progressing very well)

The report card grade will be based on evidence of student learning, including observations, conversations and student products. Consideration will be given to more recent evidence (skill development) and the most consistent level of achievement.

### **Student and Parent/Guardian Acknowledgement**

We have read the above course outline and are aware of the student responsibilities to attend class on a regular basis and to provide evidence of learning within the established timelines.

Student's Name (print): \_\_\_\_\_ Student's Signature: \_\_\_\_\_

Parent/Guardian Name (print): \_\_\_\_\_ Parent/Guardian Signature: \_\_\_\_\_