** Mathematics 8**

**2012-2013**

**Teacher:** Mr. M Patterson

**Course Grade:** Grade 8

**Rationale:** The study of mathematics equips students with knowledge, skills, and habits of mind that are essential for successful and rewarding participation in an information-and-technology-based society. To learn mathematics in a way that will serve them well throughout their lives, students need classroom experiences that help them develop mathematical understanding; learn important facts, skills, and procedures; develop the ability to apply the processes of mathematics; and acquire a positive attitude towards mathematics. The Ontario curriculum for Grade 8 provides the framework needed to meet these goals.

**Aim:** This course is organized into twelve chapters, each with a focus on one of the five strands (Number Sense & Numeration, Measurement, Geometry & Spatial Sense, Patterning & Algebra, and Data Management & Probability). This organization facilitates assessment and reporting related to the curriculum. Students will apply problem solving, critical-thinking, and communication skills to evaluate the problems taken from each of the five strands. Student engagement is assured through central questions and discussion suggestions with real-life contexts and relevance.

**Skills:**

* *Knowledge and Understanding* – Knowledge of the content taught and the comprehension of its meaning and significance;
* *Thinking* – The use of critical and creative thinking skills and/or processes as follows:
	+ *Planning Skills* – focusing, research, gathering information, organizing an inquiry;
	+ *Processing Skills* – analyzing, evaluating, synthesizing;
	+ *Critical/Creative Thinking Processes* – inquiry, problem solving, decision making, research.
* *Communication* – The conveying of meaning through various forms as follows:
	+ *Oral* – story, role play, debate;
	+ *Written* – reports, essays, letters;
	+ *Visual* – model, map, chart, movement, video.
* *Application* – The use of knowledge and skills to make connections within and between various contexts.

**Course Overview:**

* Develop, select, apply, and compare a variety of problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding;
* Develop and apply reasoning skills (e.g., recognition of relationships, generalization through inductive reasoning, use of counter-examples) to make mathematical conjectures, assess conjectures and justify conclusions, and plan and construct organized mathematical arguments;
* Demonstrate that they are reflecting on and monitoring their thinking to help clarify their understanding as they complete an investigation or solve a problem (e.g., by assessing the effectiveness of strategies and processes used, by proposing alternative approaches, by judging the reasonableness of results, by verifying solutions);
* Make connections among mathematical concepts and procedures, and relate mathematical ideas to situations or phenomena drawn from other contexts (e.g., other curriculum areas, daily life, current events, art and culture, sports).

**Major Themes:**

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| --- | --- | --- |
| **Chapter** | **Theme** | **Strand** |
| 1 | Number Relationships | Number Sense & Numeration |
| 2 | Proportional Relationships | Number Sense & Numeration |
| 3 | Collecting, Organizing, and Displaying Data | Data Management & Probability |
| 4 | Patterns and Relationships | Patterning & Algebra |
| 5 | Measurement of Circles | Measurement |
| 6 | Integer Operations | Number Sense & Numeration |
| 7 | Transformations | Geometry & Spatial Sense |
| 8 | Equations and Relationships | Patterning & Algebra |
| 9 | Fraction Operations | Number Sense & Numeration |
| 10 | Angles and Triangles | Measurement |
| 11 | Geometry and Measurement Relationships | Geometry & Spatial Sense |
| 12 | Probability | Data Management & Probability |

**Evaluations:**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Assessment** | **Quantity\*** | **Grade** |
| 1 | Chapter Tests | 12 tests taken from each theme stated above. | 30% |
| 2 | Homework | 12 assignments from each theme stated above. | 30% |
| 3 | The Real Game | 15 on-going life/career planning projects. | 20% |
| 4 | Mad Minute Quizzes | 5 quizzes for each chapter.\*\* | 10% |
| 5 | Participation | Includes attendance and classroom work. | 10% |
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\* Homework and assignment due dates are tentative and may change throughout the year.

\*\* Five mad minute quizzes are planned per chapter of which only the highest mark will be graded.

**Schedule:** A long-range plan has been posted on the wall in the classroom with a complete breakdown of every lesson throughout the school year. Located below is a breakdown of each theme throughout the months of the academic year.

*Sept*: Number Relationships / Proportional Relationships

*Oct*: Proportional Relationships / Collecting, Organizing, and Displaying Data

*Nov*: Collecting, Organizing, and Displaying Data / Patterns and Relationships

*Dec*: Measurement of Circles

*Jan*: Integer Operations / Transformations

*Feb*: Transformations / Equations and Relationships

*Mar*: Fraction Operations

*Apr*: Angles and Triangles / Geometry and Measurement Relationships

*May*: Geometry and Measurement Relationships / Probability

*Jun*: Probability

**Student Attendance:**

 Student attendance is vital to the success of this course. Should a student miss a class due to any circumstance, all possible efforts will be made to ensure the material covered will be available to that student.

**Class Rules and Regulations**

 Every member of this class is expected to come prepared and on time. Students must bring their textbook, notebook, all other materials that have been specified, and homework to each and every class.

 Classroom participation is mandatory and will be evaluated through a variety of methods including: activities, classroom discussion, and homework. Students who struggle with classroom participation may substitute work to compensate for their lack of participation. Furthermore, every opinion and discussion will be received respectfully in class, although some opinions may be challenged.

 Homework will be assigned throughout the course to ensure your personal growth. Readings and homework are assigned to stimulate interest in the subject being taught.

 A homework or project, which is not completed on the due date, will be accepted late, but may receive a penalty. Exceptional circumstances will be considered and a deadline extension may be granted with no penalty.

 Be prepared to work hard and think hard. I look forward to learning with you.

 I have read the syllabus for ***Grade 8 Mathematics*** and am in agreement with the working methods, general philosophy, and topics that it proposes.

 Student name Date

 Student signature Parent signature