



MATHEMATICS

OVERVIEW:

From Ministry of Education, 2005

“Grade 6: Mathematical Process Expectations

The mathematical process expectations are to be integrated into student learning associated with all the strands. Throughout Grade 6, students will:

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PROBLEM SOLVING

- develop, select, and apply problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding;

REASONING AND PROVING

- develop and apply reasoning skills (e.g., classification, recognition of relationships, use of counter-examples) to make and investigate conjectures and construct and defend arguments;

REFLECTING

- 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 comparing and adjusting strategies used, by explaining why they think their results are reasonable, by recording their thinking in a math journal);

SELECTING TOOLS AND COMPUTATIONAL STRATEGIES

- select and use a variety of concrete, visual, and electronic learning tools and appropriate computational strategies to investigate mathematical ideas and to solve problems;

CONNECTING

- 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, sports);

REPRESENTING

- create a variety of representations of mathematical ideas (e.g., by using physical models, pictures, numbers, variables, diagrams, graphs, onscreen dynamic representations), make connections among them, and apply them to solve problems;

COMMUNICATING

- communicate mathematical thinking orally, visually, and in writing, using everyday language, a basic mathematical vocabulary, and a variety of representations, and observing basic mathematical conventions.

There are five strands in Grade 6 Mathematics:

- A) Number Sense and Numeration
- B) Measurement
- C) Geometry and Spatial Sense
- D) Patterning and Algebra
- E) Data Management and Probability

EQAO Testing

As you are probably aware, near the end of Grade 6, students will be writing the provincial Standardized Test EQAO for Mathematics and Language. IFS has routinely scored high on both EQAO sections, and as such, students will be prepared throughout the year In'shaa Allah for the test. I have planned for the curriculum to be covered completely by the end of April In'shaa Allah, so that the month of May can be devoted to revision, as has been done by previous Grade 6 teachers in previous years.

I will be holding math remedial twice a week, on Mondays and Wednesdays In'shaa Allah. Any student who has been struggling with any math concept or requires extra help will be using this dedicated time to In'shaa Allah catch up and become proficient in the subject! I am here to help!

Further details regarding EQAO testing will be sent home for parents and discussed in class with students as time goes on, In'shaa Allah.



A) NUMBER SENSE AND NUMERATION

Overall Expectations

By the end of Grade 6, students will:

- read, represent, compare, and order whole numbers to 1 000 000, decimal numbers to thousandths, proper and improper fractions, and mixed numbers;
- solve problems involving the multiplication and division of whole numbers, and the addition and subtraction of decimal numbers to thousandths, using a variety of strategies;
- demonstrate an understanding of relationships involving percent, ratio, and unit rate.

B) MEASUREMENT

Overall Expectations

By the end of Grade 6, students will:

- estimate, measure, and record quantities, using the metric measurement system;
- determine the relationships among units and measurable attributes, including the area of a parallelogram, the area of a triangle, and the volume of a triangular prism.

C) GEOMETRY AND SPATIAL SENSE

Overall Expectations

By the end of Grade 6, students will:

- classify and construct polygons and angles;

- sketch three-dimensional figures, and construct three-dimensional figures from drawings;
- describe location in the first quadrant of a coordinate system, and rotate two-dimensional shapes.

D) PATTERNING AND ALGEBRA

Overall Expectations

By the end of Grade 6, students will:

- describe and represent relationships in growing and shrinking patterns (where the terms are whole numbers), and investigate repeating patterns involving rotations;
- use variables in simple algebraic expressions and equations to describe relationships.

E) DATA MANAGEMENT AND PROBABILITY

Overall Expectations

By the end of Grade 6, students will:

- collect and organize discrete or continuous primary data and secondary data and display the data using charts and graphs, including continuous line graphs;
- read, describe, and interpret data, and explain relationships between sets of data;
- determine the theoretical probability of an outcome in a probability experiment, and use it to predict the frequency of the outcome.

TENTATIVE OUTLINE FOR THE YEAR (IN'SHAA ALLAH):

Math is scheduled for 8 times a week in 2014-2015

#	UNIT	LESSONS ALLOTTED
1	Number Patterns	9
2	Whole Numbers	18
3	Decimals	20
4	Fractions, percents, ratios and rates	24
5	Data Management	24
6	Geometry	22
7	Measurement	24
8	Perimeter, area and volume	26
9	Transformational geometry	20
10	Patterns in numbers and geometry	16
11	Probability	24
-	EQAO Review	4 weeks

Please note that lessons will be added as the need arises. I will not move on until concepts are clear In'shaa Allah.

Sample Resources used:

- Morrow, Peggy et al. Math Makes Sense 6. Canada: Pearson Education Canada Inc., 2006 (textbook, student workbook, teacher resource binder)
- Popular Book Company (Canada) Ltd. Complete Mathsmart 6. Richmond Hill: PBC Ltd., 2014.
- Popular Book Company (Canada) Ltd. Ontario Provincial Testing Practice 6: Math. Richmond Hill: PBC Ltd., 2014.
- Turnbull, Demetra. EQAO Test Ready: Math Skills 6. Canada: Chalkboard Publishing Inc., 2014.
- D'Angela, Julian et al. Tree House Ontario Math 6. Hamilton: Tree House Press Inc., 2007.
- American Education Publishing. Comprehensive Curriculum of Basic Skills 6. North Carolina: American Education Publishing, 2011.

Sample Teaching/Learning Strategies		
Lecture/presentation	Teacher analysis	Investigations/lab/inquiry
Student presentation	Small group discussion	Digital media/technology
Class discussion	Hands-on activity/materials	Cooperative learning/group work
Problem solving	Critical analysis	Demonstrations/modelling
PowerPoint	Peer Analysis	Brainstorming
Graphic organizers (e.g. fish bone, mind map, concept map, Venn diagram, timeline, flow chart)		
Debates	Games/competitions	Journals
Role playing/drama	Think-Pair-Share	Learning styles
Multiple Intelligences	Brainstorming	Field trip
Guest speaker	Gallery walk	Online research
Video creation	Homework	Guided/independent practice
Jigsaw	4 Corners	Tribes activities
Case studies	Tribes activities	Other (subject specific)

Sample Evaluation/Assessment Strategies		
Formative/summative assessments	KWL chart	Graphic organizers (see above)
Pre-test/Quiz/Test	Larger assignment/project	Models/dioramas
Presentations	Handout/Worksheet Activity	Table
Diagrams	Self-evaluation	Investigations
Checklist	Rubric	Ticket out the door/variation
Conference	Peer review	Observations
Assigned questions	Lab report/notebook	Technology
Culminating activity	Debates/drama	Class/small-group discussion
Inquiry activity	Online work	Check for understanding
Anecdotal report	Larger assignments/projects	Journals
Group assessment	Independent study	Binder check
Portfolio	Letters/other narrative structures	Other (subject specific)

Assessment Types		
Assessment for Learning	Assessment as Learning	Assessment of Learning

Central Assessment Strategies		
Student Work	Conversation	Observation

The tables above provide an overview of some of the strategies I will be using in my Mathematics lessons In'shaa Allah, as well as how I will be assessing and evaluating my students. For a more detailed look at my teaching strategies, please see the appropriate sections on the class website (srmariam6b.weebly.com). Jazakallah!