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# COURSE OUTLINE

## Mathematics 8

### SEPTEMBER 2015 – JUNE 2016

#### Ms. Shute

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**Student Signature:**

**Parent Signature:**



##### Mathematics 8 – 2015/2016

###### OBJECTIVES

To develop in students a mathematic literacy through:

* 1. Communication: learn and express understanding
	2. Connections: connect mathematical ideas to other concepts in mathematics, to everyday experiences and to other disciplines
	3. Mental Math & Estimation: demonstrate fluency with mental mathematics and estimation
	4. Problem Solving: develop and apply new mathematical knowledge through problem solving
	5. Reasoning: develop mathematical reasoning
	6. Technology: select and use technologies as tools for learning and for solving problems
		1. Visualization**:** develop visualization skills to assist in processing information, making connections and solving problems.

###### COURSE OUTLINE

**Unit A: NUMBER**

* Students will develop number sense
	+ They must demonstrate an understanding of perfect squares and square roots, concretely, pictorially and symbolically (limited to whole numbers).
	+ They must determine the approximate square root of numbers that are not perfect squares (limited to whole numbers)
	+ They must demonstrate an understanding of percents greater than or equal to 0%, including greater than 100%.
	+ They must demonstrate an understanding of ratio and rate
	+ They must solve problems that involve rates, ratios and proportional reasoning.
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**Unit B: Patterns & Relations - Patterns**

* Students will use patterns to describe the world and to solve problems.
	+ Graph and analyze two-variable linear relations

**Unit C: Patterns & Relations - Variables & Equations**

* Students will represent algebraic expressions in multiple ways.
	+ They must model and solve problems concretely, pictorially and symbolically, using linear equations

**Unit D: Shape & Space - Measurement**

* Students will use direct and indirect measurement to solve problems.
	+ They must develop and apply the Pythagorean theorem to solve problems.
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	+ They must determine the surface area of:
		- right rectangular prisms
		- right triangular prisms
		- right cylinders
	+ They must develop and apply formulas for determining the volume of right rectangular prisms, right triangular prisms and right cylinders

**Unit E: Shape & Space - 3-D Objects & 2-D Shapes**

* Students will describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.
	+ They must draw and interpret top, front and side views of 3-D objects composed of right rectangular prisms.

**Unit F: Shape & Space – Transformations**

* Students will describe and analyze position and motion of objects and shapes.
	+ They must demonstrate an understanding of the congruence of polygons.

**Unit G: Statistics & Probability - Data Analysis**

* Students will collect, display and analyze data to solve problems.
	+ They must critique ways in which data is presented in circle graphs, line graphs, bar graphs and pictographs.

**Unit H: Statistics & Probability - Chance & Uncertainty**

* Students will use experimental or theoretical probabilities to represent and solve problems involving uncertainty
	+ They must solve problems involving the probability of independent events

###### COURSE SET UP

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**Assignments 10%**

**Quizzes 20%**

**Exams 50%**

**Final Exam 20%**

1. **REQUIRED MATERIALS**
* Textbook
* Binder with Paper
* Pencil(s)
* Ruler
* Eraser
* Graph paper
* Scientific calculator

###### EXPECTATIONS

* Students need to attend every class and complete assigned work every evening.
* Students, who do not complete assigned work, will be expected to attend a lunch hour detention to complete the work.
* Students need to inform the office if they are away during an exam or quiz.
1. **ASSESSMENT RE – WRITE POLICY**
* **Students will not be permitted to re –write tests, (unit exams).**
* **Students will only be permitted to re – write assignments and quizzes at the discretion of the teacher.**
1. **NHI – NOT HANDED IN POLICY**
* If an assignment is not completed to the instructor’s satisfaction it will be awarded an NHI, (Not Handed In). A student will be given opportunities to turn this assignment in at a later date as long as the conditions outlined in the assessment re – write policy, (section F) are met. The student will be allowed these opportunities until completion of the unit the assignment is included in. Upon the completion of the unit, (a unit test has been taken), the mark will remain an NHI, (weighted as a zero), for the remainder of the school year.

\*\*\* Exceptions to the expectations, re – write policy and NHI policy may occur, are rare, and are at the discretion of the teacher. \*\*\*