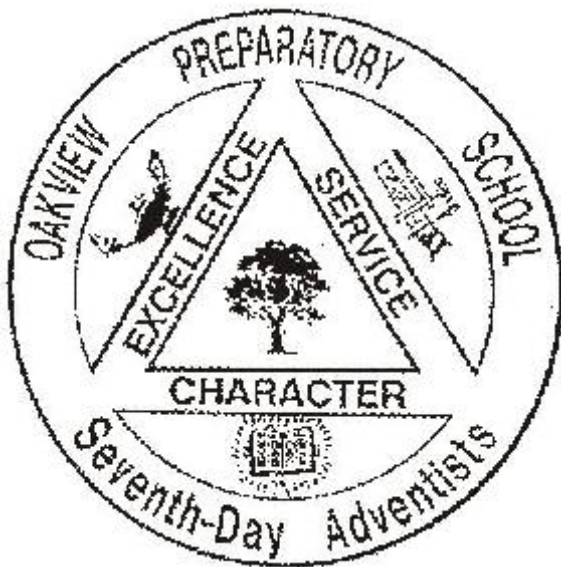


**Oakview Preparatory School of Seventh-day Adventists**



GRADE

6

**Pre-March Mathematics Units**  
2005-2006

Instructor  
Mr. Elvis Agard

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# Assessment Rubric

<b>4 = Exceeds the standards</b> (Advanced)	<b>3 = Meets the standards</b> (Proficient)	<b>2 = Approaching the standards</b> (Developing)	<b>1 = Below the standards</b> (Latent)
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	<b>- = Novice</b>	<b>√ = Apprentice</b>	<b>+ = Practitioner</b>	<b>⊕ = Expert</b>
<b>Knowledge</b>	Student is unable to attain and communicate the necessary information or shows little initiative to try.	Student shows willingness to learn the information, but is unable to meet the minimum requirement of 70% on assignments. Inconsistently meets the standards.	Student scores a minimum of 70% on tests, presentations, worksheets and projects, or a rating of proficient on a scoring guide. Consistently meets the standards.	Student demonstrates in-depth knowledge and consistently scores above 90% on assignments, or a rating of advanced on a scoring guide. Consistently exceeds the standards.
<b>Skills</b>	Student fails to attain or demonstrate the required skills to a minimum level and shows minimum initiative to learn.	Student partially demonstrates the required skill or unable to master the skill on a consistent basis.	Student can demonstrate the required skill a minimum of three times or on a consistent basis, or a rating of proficient on a scoring guide.	Student demonstrates the required skill at an exceptional level in a self-directed manner, or a rating of advanced on a scoring guide. Consistently exceeds the standards.

## The Five Process Strands (how all mathematical content is taught)

### **Problem Solving Strand (PS)** *Students will:*

- build new mathematical knowledge through problem solving;
- solve problems that arise in mathematics and in other contexts;
- apply and adapt a variety of appropriate strategies to solve problems;
- monitor and reflect on the process of mathematical problem solving.

### **Reasoning and Proof Strand (RP)** *Students will:*

- recognize reasoning and proof as fundamental aspects of mathematics;
- make and investigate mathematical conjectures;
- develop and evaluate mathematical arguments and proofs;
- select and use various types of reasoning and methods of proof.

### **Communication Strand (CM)** *Students will:*

- organize and consolidate their mathematical thinking through communication;
- communicate their mathematical thinking coherently and clearly to peers, teachers, and others;
- analyze and evaluate the mathematical thinking and strategies of others;
- use the language of mathematics to express mathematical ideas precisely.

### **Connections Strand (CN)** *Students will:*

- recognize and use connections among mathematical ideas;
- understand how mathematical ideas interconnect and build on one another to produce a coherent whole;
- recognize and apply mathematics in contexts outside of mathematics.

### **Representation Strand (R)** *Students will:*

- create and use representations to organize, record, and communicate mathematical ideas;
- select, apply, and translate among mathematical representations to solve problems;
- use representations to model and interpret physical, social, and mathematical phenomena.

# Unit 1

NB: Mandatory <b>portfolio</b> items are in <b>bold</b> . Strands addressed are shaded grey.	Standards by CONTENT STRANDS											Standards by PROCESS STRANDS				
	6N1	6N2	6N3	6N4	6N5	6N13	6N14	6N15	6N19	6N21	6N27	PS	RP	CM	CN	R
1.1 Place Value																
2.3 Algebra Properties																
2.4 Mental Math: Use The Properties																
28.1 Understand Integers																
28.2 Rational Numbers																
28.3 Compare and Order Rational Numbers																
3.3 Estimate with Decimals																
10.4 Divide Fractions																
<b>Performance Assessment Project</b>																
<b>Unit Test</b>																
Quiz 1																
Quiz 2																
Quiz 3																

## Expanded Content Strands

- 6.N.1 Read and write whole numbers to trillions
- 6.N.2 Define and identify the commutative and associative properties of addition and multiplication
- 6.N.3 Define and identify the distributive property of multiplication over addition
- 6.N.4 Define and identify the identity and inverse properties of addition and multiplication
- 6.N.5 Define and identify the zero property of multiplication
- 6.N.13 Define absolute value and determine the absolute value of rational numbers (including positive and negative)
- 6.N.14 Locate rational numbers on a number line (including positive and negative)
- 6.N.15 Order rational numbers (including positive and negative)
- 6.N.19 Identify the multiplicative inverse (reciprocal) of a number
- 6.N.21 Find multiple representations of rational numbers (fractions, decimals, and percents 0 to 100)
- 6.N.27 Justify the reasonableness of answers using estimation (including rounding)

# Unit 2

NB: Mandatory <b>portfolio</b> items are in <b>bold</b> . Strands addressed are shaded grey.	Standards by CONTENT STRANDS									Standards by PROCESS STRANDS				
	6N6	6N7	6N8	6N9	6N10	6N11	6N12	6N26	6N27	PS	RP	CM	CN	R
24.1 Ratios and Rates	■		■							■	■	■	■	■
24.2 Explore Proportions		■								■	■	■	■	■
24.3 Solve Proportions				■						■	■	■	■	■
25.1 Percent						■		■		■	■	■	■	■
25.3 Estimate and Find Percent Of A Number								■		■	■	■	■	■
Verify the proportionality using the product of the means equals the product of the extremes					■					■	■	■	■	■
25.5 Discount and sales tax							■			■	■	■	■	■
25.6 Simple Interest										■	■	■	■	■
<b>Performance Assessment Project</b>	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Unit Test</b>	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Quiz 1														
Quiz 2														
Quiz 3														
<b>Expanded Content Strands</b>														
6.N.6 Understand the concept of rate														
6.N.7 Express equivalent ratios as a proportion														
6.N.8 Distinguish the difference between rate and ratio														
6.N.9 Solve proportions using equivalent fractions														
6.N.10 Verify the proportionality using the product of the means equals the product of the extremes														
6.N.11 Read, write, and identify percents of a whole (0% to 100%)														
6.N.12 Solve percent problems involving percent, rate, and base														
6.N.26 Estimate a percent of quantity (0% to 100%)														
6.N.27 Justify the reasonableness of answers using estimation (including rounding)														

## Unit 3

NB: Mandatory <b>portfolio</b> items are in <b>bold</b> . Strands addressed are shaded grey.	Standards by CONTENT STRANDS				Standards by PROCESS STRANDS				
	6N16	6N17	6N18	6N20	PS	RP	CM	CN	R
9.3 Add and Subtract Fractions									
10.2 Multiply Fractions									
10.4 Divide Fractions									
9.4 Add and Subtract Mixed Numbers									
9.5 Subtract Mixed Numbers									
10.3 Multiply Mixed Numbers									
10.5 Divide Fractions and Mixed Numbers									
8.5 Fractions, Decimals, and Percents									
<b>Performance Assessment Project</b>									
<b>Unit Test</b>									
Quiz 1									
Quiz 2									
Quiz 3									
<b>Expanded Content Strands</b>									
6.N.16 Add and subtract fractions with unlike denominators									
6.N.17 Multiply and divide fractions with unlike denominators									
6.N.18 Add, subtract, multiply and divide mixed numbers with unlike denominators									
6.N.20 Represent fractions as terminating or repeating decimals									

# Unit 4

NB: Mandatory <b>portfolio</b> items are in <b>bold</b> . Strands addressed are shaded grey.	Standards by CONTENT STRANDS				Standards by PROCESS STRANDS				
	6N22	6N23	6N24	6N25	PS	RP	CM	CN	R
2.6 Order Of Operations									
2.5 Exponents									
11.2 Evaluate Expressions									
11.3 Squares and Square Roots									
11.4 Expressions With Squares and Square Roots									
<b>Performance Assessment Project</b>									
<b>Unit Test</b>									
Quiz 1									
Quiz 2									
Quiz 3									
<b>Expanded Content Strands</b>									
6.N.22 Evaluate numerical expressions using order of operations (may include exponents of two and three)									
6.N.23 Represent repeated multiplication in exponential form									
6.N.24 Represent exponential form as repeated multiplication									
6.N.25 Evaluate expressions having exponents where the power is an exponent of one, two, or three									

## Unit 5

NB: Mandatory <b>portfolio</b> items are in <b>bold</b> . Strands addressed are shaded grey.	Standards by CONTENT STRANDS			Standards by PROCESS STRANDS				
	6A1	6A6		PS	RP	CM	CN	R
11.1 Write Expressions								
21.1 Estimate and Find Area								
21.2 Areas Of Parallelograms and Trapezoids								
21.3 Area Of A Circle								
20.4 Circumference								
23.1 Surface Area								
<b>Performance Assessment Project</b>								
<b>Unit Test</b>								
Quiz 1								
Quiz 2								
Quiz 3								
<b>Expanded Content Strands</b>								
6.A.1 Translate two-step verbal expressions into algebraic expressions								
6.A.6 Evaluate formulas for given input values (circumference, area, volume, distance, temperature, interest, etc.)								

# Unit 6

NB: Mandatory <b>portfolio</b> items are in <b>bold</b> . Strands addressed are shaded <b>grey</b> .	Standards by CONTENT STRANDS										Standards by PROCESS STRANDS				
	6G1	6G11	6G2	6G3	6G5	6G6	6G7	6G8	6G9	6G10	PS	RP	CM	CN	R
24.5 Proportions and Similar Figures	■										■	■	■	■	■
21.1 Estimate and Find Area			■	■							■	■	■	■	■
21.2 Areas Of Parallelograms and Trapezoids			■	■							■	■	■	■	■
16.6 Circles					■	■			■		■	■	■	■	■
20.4 Circumference							■				■	■	■	■	■
21.4 Area Of Circles							■				■	■	■	■	■
Calculate the sector of a circle							■	■			■	■	■	■	■
<b>Performance Assessment Project</b>	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
<b>Unit Test</b>	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Quiz 1															
Quiz 2															
Quiz 3															
<b>Expanded Content Strands</b>															
6.G.1 Calculate the length of corresponding sides of similar triangles, using proportional reasoning															
6.G.2 Determine the area of triangles and quadrilaterals (squares, rectangles, rhombi, and trapezoids) and develop formulas															
6.G.3 Use a variety of strategies to find the area of regular and irregular polygons															
6.G.5 Identify radius, diameter, chords and central angles of a circle															
6.G.6 Understand the relationship between the diameter and radius of a circle															
6.G.7 Determine the area and circumference of a circle, using the appropriate formula															
6.G.8 Calculate the area of a sector of a circle, given the measure of a central angle and the radius of the circle															
6.G.9 Understand the relationship between the circumference and the diameter of a circle															
6.G.10 Identify and plot points in all four quadrants															
6.G.11 Calculate the area of basic polygons drawn on a coordinate plane (rectangles and shapes composed of rectangles having sides with integer lengths)															

# Unit 7

NB: Mandatory <b>portfolio</b> items are in <b>bold</b> . Strands addressed are shaded grey.	Standards by CONTENT STRANDS									Standards by PROCESS STRANDS					
	6G4	6M1	6M2	6M3	6M4	6M5	6M6	6M7	6M8	6M9	PS	RP	CM	CN	R
23.2 Estimate and Find Volume															
19.1 Customary Measures															
19.2 Metric Measures															
19.4 Appropriate Tools and Units															
21.2 Areas Of Parallelograms and Trapezoids															
21.3 Area Of A Circle															
23.1 Surface Area															
Determine personal references for capacity															
<b>Performance Assessment Project</b>															
<b>Unit Test</b>															
Quiz 1															
Quiz 2															
Quiz 3															
<b>Expanded Content Strands</b>															
6.G.4 Determine the volume of rectangular prisms by counting cubes and develop the formula															
6.M.1 Measure capacity and calculate volume of a rectangular prism															
6.M.2 Identify customary units of capacity (cups, pints, quarts, and gallons)															
6.M.3 Identify equivalent customary units of capacity (cups to pints, pints to quarts, and quarts to gallons)															
6.M.4 Identify metric units of capacity (liter and milliliter)															
6.M.5 Identify equivalent metric units of capacity (milliliter to liter and liter to milliliter)															
6.M.6 Determine the tool and technique to measure with an appropriate level of precision: capacity															
6.M.7 Estimate volume, area, and circumference (see figures identified in geometry strand)															
6.M.8 Justify the reasonableness of estimates															
6.M.9 Determine personal references for capacity															

## Unit 8

NB: Mandatory <b>portfolio</b> items are in <b>bold</b> . Strands addressed are shaded grey.	Standards by CONTENT STRANDS				Standards by PROCESS STRANDS				
	6S5	6S6	6S7	6S8	PS	RP	CM	CN	R
5.4 Mean Median and Mode									
5.3 Frequency Tables and Line Plots									
6.2 Make and Analyze Graphs									
<b>Performance Assessment Project</b>									
<b>Unit Test</b>									
Quiz 1									
Quiz 2									
Quiz 3									
<b>Expanded Content Strands</b>									
6.S.5 Determine the mean, mode and median for a given set of data									
6.S.6 Determine the range for a given set of data									
6.S.7 Read and interpret graphs									
6.S.8 Justify predictions made from data									