Math 6 (Grade 6) (PACEs 1061-1072)

The student:

· Learns the **properties of addition** and **multiplication**—commutative, associative, identity, and zero.

· Works with **exponents** and is introduced to **expanded notation using exponents.**

· **Rounds** and **estimates** large numbers and works **mental estimation** problems.

· Learns **factoring rules (divisibility rules);** identifies **prime numbers** and **composite numbers.**

· Reviews **fractions** and fraction terms; adds, subtracts, multiplies, and divides fractions; changes **fractions to decimals** using long division; and converts **fractions to percents.**

· Reviews **decimals;** adds, subtracts, multiplies, and divides decimals; defines **repeating** and **terminating** decimals; and changes **decimals to percents.**

· Relates **percents** and decimals to fractions, learns **common percents,** changes **percents to decimals,** and finds **percent of a number.**

· Is introduced to **integers.**

· Learns **order of operation.**

· Learns the terms **equations** and **inequalities** when comparing number sentences (<, >, =).

· Defines a **variable** and **solves equations** (one variable) using inverse operations.

· Works with **ratios** and **proportions**, and uses proportions to solve problems.

· Finds the **probability** of an event, and expresses probability as a ratio.

· Uses critical thinking skills to **solve word problems.**

· Defines and interprets circle, line, bar, and double-line **graphs.**

· Builds **geometric** knowledge; measures angles; finds the perimeter, area, and volume; and defines the parts of a circle.

· Rounds **money to find estimated costs** and solves money problems.

· Compares **English** and **metric measurements,** and carries out conversions.

Math 7 (Grade 7) (PACEs 1073-1084)

The student:

- Reads, writes, and works with **whole** and **mixed numbers,** integers, and common fractions.

- Learns the proper **mathematical terminology**—dividend, multiplicand, product, simplify, minuend, quotient, numerator, and denominator; how to change fractions and decimals to percent; how to find the number when a percent is known; and data and graphs, mean, mode, median, range, rank, and read.

- Is introduced to **business** and **consumer arithmetic**—profit and loss, commission, discounts, bills and receipts, and invoices with discounts; ratio, proportions and percent.

- Studies **business methods** needed to function at home—keeping cash and household accounts, budgets, insurance, and the reading of gas and electric meters.

- Learns about **banking**—savings and checking accounts, deposits, interest, and loans.

- Reviews **English** and **metric** units of length, volume, weight, and temperature.

- Reviews basic **geometry** concepts and symbols, uses a protractor and compass to find perimeter and area of shapes and solids.

- Is introduced to **equations**—variable, sets, and set notation; vocabulary, symbols and word problems.

Optional resource: Math 1075 (video)

Math 8 (Grade 8) (PACEs 1085-1096)

The student:

- Uses **formulas.**

- Solves **equations**—one, two, and opposite operations with fractions and written problems.

- Reviews **fractions**—addition, subtraction, multiplication, and division; proper, improper, and mixed numbers; simplifying and comparing; and decimals to the millionths place.

- Finds **volume** and **surface** areas of solid figures—prisms, cylinders, pyramids, cones, and spheres.

- Reviews basic **geometry** and geometric terms.

- Prepares and uses **tables** and **graphs.**

- Learns about **rates,** time, and distance.

- Uses the **Pythagorean theorem**—using right triangles to find height and distance, and finding the hypotenuse of a right triangle.
- Learns about **square roots.**
- Uses **positive** and **negative numbers**—adds, subtracts, changes, and plots on a line graph.
- Reviews **English** and **metric** units of length, volume, weight, and temperature—compares and converts.