**CPA logo CHARLES P. ALLEN HIGH SCHOOL ∞ MATHEMATICS DEPARTMENT ∞**

**MATH @ WORK 11 COURSE OUTLINE**

**Teaching Staff 2015 – 2016:**

* S. Young
* K. McPherson [kmcpherson@hrsb.ca](mailto:kmcpherson@hrsb.ca) Room 330

**Prerequisite:** Successful completion of Mathematics@ Work 10 or Mathematics 10

**Textbook:** Math @ Work 11 (McGraw - Hill Ryerson)

**Course Overview:** Mathematics at Work 11 is a high school mathematics course which demonstrates the application and importance of key math skills. This course is designed to provide students with the mathematical understandings and critical-thinking skills identified for direct entry into the work force or for entry into programs of study that do not require *academic* mathematics. Course content includes measurement systems, volume, 2-D and 3-D geometry, scale, exploded diagrams, numerical reasoning, personal budgets, compound interest, financial institution services, and formula manipulation for various contexts.

**Course Outline:**

**Surface Area and Scale of 3D objects** **Assessment: 25%**

Students will be expected to:

* solve problems that involve SI and imperial units in surface area measurements and verify the solutions.
* solve problems that involve scale.
* model and draw 3-D objects and their views.
* draw and describe exploded views, component parts and scale diagrams of simple 3-D objects.
* solve problems that require the manipulation and application of formulas related to

• surface area

**Volume and Capacity** **Assessment: 15%**

Students will be expected to:

* solve problems that involve SI and imperial units in volume and capacity measurements.
* solve problems that require the manipulation and application of formulas related to

• volume and capacity

**Interpreting Graphs Assessment: 10%**

Students will be expected to:

* solve problems that involve creating and interpreting graphs, including bar graphs, histograms, line graphs, and circle graphs.

**Banking and Budgeting Assessment: 20%**

Students will be expected to:

* solve problems that involve personal budgets.
* demonstrate an understanding of compound interest.
* demonstrate an understanding of financial institution services used to access and manage finances.
* demonstrate an understanding of credit options, including credit cards and loans.
* solve problems that require the manipulation and application of formulas related to

• simple interest

• finance charges

**Slope and Right Triangle Trig** **Assessment: 25%**

Students will be expected to:

* solve problems that involve two and three right triangles.
* solve problems that require the manipulation and application of formulas related to
  + slope and rate of change
* demonstrate an understanding of slope

• as rise over run

• as rate of change

• by solving problems

* solve problems by applying proportional reasoning and unit analysis.

**Numerical Reasoning** **Assessment: 5%**

Students will be expected to:

* analyze puzzles and games that involve numerical reasoning, using problem-solving strategies.

**Assessment:**

**Assessment** is the process of gathering, from a variety of sources, information that accurately reflects how well a student is achieving the learning outcomes in a subject or course.

A) **Formative assessment** is to show growth over time, determine student needs, plan next steps in instruction, and provide students with descriptive feedback.

B) **Summative assessment** is to determine the extent to which learning has occurred for students.

**Evaluation** is the process of analyzing, reflecting upon, and summarizing assessment information and making judgements and / or decisions based on the information gathered.

Unit assessments will consist of multiple opportunities for a student to demonstrate their understanding of the outcomes. Such opportunities include (but are not limited to) tests, quizzes, in-class assignments, portfolios, comprehension questions, and projects. Teachers will employ both formative and summative assessments in gathering information to determine a student grade. No one method of assessment will be worth more than 50% of the unit.

Throughout the semester, students may feel that they have not successfully demonstrated their understanding of particular outcomes and would like another opportunity to demonstrate that they now “Get It”. Please refer to the Multiple Opportunities document on teacher/school website for more details.

Mathematics courses require commitment and students must take responsibility for achieving the outcomes. Students need to make sure that they keep up with the work and seek help early if they encounter difficulties before they become insurmountable. Extra help is available, please check with your teacher for times.

***Students are NOT permitted to exempt the final exam.***

**Final Assessment:** 80% Course Outline

20% Final Exam

**Continuous School Improvement (CSI):**

*Literacy Goal: Students will develop their critical thinking skills.*

*Math Goal: Students will develop their mathematical critical thinking skills with a focus on improving achievement on Analysis questions (formerly called level three questions).*

Levels of cognitive demand include **Knowledge, Application and Analysis**. Analysis, a level 3 question, is one in which students have the necessary skills/tools to solve a problem which is unfamiliar. This requires higher order thinking skills and problem solving techniques. Throughout the course of this year, as part of our CSI goal, teachers in the math department will expose their students to these types of problems and give them strategies that will help refine their critical thinking skills.

**Communication of Student Achievement:**

A collaborative effort of all stakeholders (student / parent/ teacher) is important to ensure student academic success. In an effort to maintain communications, a number of avenues are available.

* Class Web sites are updated daily
* Marks and attendance can be checked at any time on the Parent/ Student Portal of Powerschool. (If you do not have a password for the portal, please contact the main office)
* The Auto-dialer calls home regarding unexcused absences and upcoming events.
* Parents and students are encouraged to contact the teacher via email if they have any concerns regarding academic progress.
* Important dates include:
  + Curriculum night: , 2016
  + Parent/teacher interviews: April 22 , 215
  + Multiple Opportunity Testing week: June 1 - 12, 2015