**Science Department Competencies and Assessments**

**Survey of Chemistry**

**Course description:** The Survey of Chemistry course at MRHS is an overview of chemistry with a laboratory component exploring matter, changes in matter and how chemistry impacts everyday life.

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| **Course Power Standards** | **Assessment Tools** |
| **I. Lab Skill and Safety**: *Students demonstrate understanding of:*   1. all pertinent safety rules. 2. selecting and using appropriate materials for laboratory investigation. 3. obtaining, analyzing and presenting laboratory data(i.e. use of data tables, graphs, percent error) | * Quizzes * Homework * Class work * Laboratory work |
| **II. Communication** *Students demonstrate understanding of:*   1. communicating using appropriate scientific vocabulary, notations and mathematics. 2. using and defining the scientific method to investigate problems. 3. reading scientific articles critically. | * Quizzes * Homework * Class work * Tests * Article reviews * Seminar project |
| **III. Atomic Structure:** *Students demonstrate understanding of:*   1. the make-up of the atomic nucleus and differences between elemental nuclei. 2. basic electron distribution. 3. how the outermost electrons determine how atoms interact with each other. 4. the relationship between electron configuration and the properties and location of elements on periodic table of the elements. | * Quizzes * Homework * Class work * Tests * Laboratory work |
| **IV. Chemical Reactions:** *Students demonstrate understanding of:*   1. the general types of chemical reactions. 2. the Law of the Conservation of Mass 3. balancing equations based on the Law of the Conservation of Mass | * Quizzes * Homework * Class work * Tests * Laboratory work |
| **V. States of Matter:** *Students demonstrate understanding of:*   1. the difference on the atomic level of solids, liquids and gases | * Quizzes * Homework * Class work * Tests * Laboratory work |
| **VI. Thermodynamics:** *Students demonstrate understanding of:*   1. how energy is involved in chemical changes 2. how the energy from chemical changes affects society | * Quizzes * Homework * Class work * Tests * Laboratory work |
| **VI. Practical application:** *Students demonstrate understanding of:*   1. how chemistry is present in everyday life 2. how chemistry prevents/causes/solves problems in society | * Seminars * Article reviews |

**All prospective students must complete all three assessment types to the standards listed below and subsequent attachments.**

**Assessment #1- Projects and Summative Assessments**

These are based on concepts and projects that are covered with all Algebra classes during the course of each year. Prospective Students must complete all components of each project. The cooperating teacher must sign off on each component with a label of “meets expectations”.

**Assessment #2- Homework, Class work, and Formative Assessments**

Daily assessments of student performance and understanding used to inform instructional decisions.

**Assessment #3- Exam**

These are based on concepts and information that the students are exposed to each year. Each must be completed with the prospective student attaining a 65% or higher proficiency.