

The Mathematics Assessment

Introductory Physics students who would like to be considered for recommendation to take Honors Chemistry must take the Mathematics Assessment being given by the Science Department.

Details:

- A student must inform his or her physics teacher, in writing, of their intent to take the assessment by the end of the day, 2:35 PM, Thursday, February 3.
- The assessment will be given during X Block on Monday, February 7th from 2:25pm until 3:20pm.
- Only students with documented accommodations for extended testing time will be allowed extra time on the assessment. Students with extended testing time will be allowed to work on the assessment until 3:40pm.
- **Calculators will not be allowed.**
- A make-up assessment will be offered on Thursday, February 12, during X Block. A student must have EITHER received prior permission from Ms. Winston (Science Department chair) to take the make-up OR been excused absent from school on February 7th.
- A #2 pencil is required for the assessment. Pencils will not be provided.

Topics – *If these do not sound familiar, ask your science teacher*

- Graph Interpretation
- Proportional Reasoning
- Estimation
- Addition, subtraction, division and multiplication of decimal numbers and fractions.
- Reduction of fractions: $4/6 = ?$
- Evaluation of proportions: $2/7 = x/28$
- Evaluation of exponents: 2^2 , 2^4 , $(x^2)^{-3}$
- Metric conversion: should be familiar with kilo, centi, milli.
- Unit conversion: Feet to meters (given all conversion factors)
- Linear equations: Evaluation, slope, intercepts $y = mx + b$
- Graphing of equations (linear, inverse and quadratic)
 - $y = mx + b$
 - $b/y = c/x$
 - $y = ax^2 + bx + c$
- Linear Inequalities – number lines: $1 - 5x > -2$
- Evaluating expressions: $g = -4$, $h = 2.5$ and $k = 10$
 - $h(-g^2 + 1.07 k)$
- Fractional equations: $(x-5)/(x+2) = 4/5$
- Radicals – finding roots: $(64)^{1/2}$ $(27)^{-1/3}$
- Quadratics – factoring
- Conservation of mechanical energy: Potential energy, kinetic energy

Note: This list is not meant to be all-inclusive. This sampling is meant to give a sense of what the assessment will be like.

Newton North HS Science Department
Guidelines for Honors Chemistry Placement

Students who demonstrate exceptional ability in Introductory Physics (614) will be considered for recommendation to enroll in Honors Chemistry in their Sophomore year. Honors placement is made by teacher recommendation. Teachers will consider the following guidelines when making recommendations:

- The student must earn a 90.0% overall average on all assigned work for Introductory Physics (the final exam and extra credit work are exempt from this requirement). This overall average may be calculated using only three terms rather than four. This average should include a significant number of “A” grades on major tests, lab reports, and/or projects.
AND
- The student must demonstrate mathematical facility through performance in physics class, achievement in math class, and performance on a mathematics assessment given by the physics team.
AND
- The student should demonstrate excellent use of Introductory Physics class skills, and excellent content understanding.
AND
- The student should complete course work thoroughly, carefully, and on time, and should participate regularly and enthusiastically in class activities and discussions.
AND
- The student should be able to write clearly and strongly, effectively analyzing and synthesizing information and drawing conclusions.
AND
- The student should have a high level of interest in the subject matter, as evidenced by enthusiasm for the material, and reading and learning outside of and beyond regular class work.

Decisions to allow entry into Honors Chemistry will be made during the regular registration period in March, but may be revoked, despite this initial approval, if the student fails to earn the 90.0% overall average by the end of the year and/or fails to meet any of the above guidelines.