

Placement Test Subject Content

Biology H Placement Exam

Honors Biology is a rigorous course which is prerequisite class for IB Higher Level Biology. As such, the content is taught using a college level textbook and it is taught at a level of depth comparable to general biology in college. The course relies on an ability to think critically and apply concepts you have learned to new situations.

Physical Science Topics/units include:

- Scientific method/process
- Metric conversion
- Atoms
- Ions
- Elements
- Molecules
- Compounds
- Bonding
- Periodic table

Life Science Topics/units include:

- Cellular structure/components
- Transport across a cell membrane (active & passive; osmotic environments)
- Genetics
- Protein synthesis
- Evolution

60 minutes maximum will be allowed for this test.

There are 40 multiple choice questions.

Periodic table, scratch paper (will be collected), and Basic or Scientific calculator allowed.; No graphing calculator allowed.

Chemistry Honors Placement Exam

This assessment will determine the student's current aptitude levels in introductory physical science and algebra. The following skills and content areas will be included:

- chemical formulas
- subscripts and coefficients in chemical formulas and equations
- using a periodic table (provided) to answer questions about atoms and ions
- basic metric units
- calculations: can involve scientific notation, exponents, units
- density
- Conversions (conversion equation will be provided)
- Solving problems using logic and algebraic expressions

60 minutes maximum will be allowed for this test.

There are 36 multiple choice questions.

Scientific calculator (with sin, cos and tan functions); No graphing calculator allowed.

AP Physics Placement Exam

This assessment will determine the student's current aptitude levels in Algebra 2 and trigonometric functions. The following skills and content areas will be included:

- Metric Conversions
- Dimensional Analysis (nonmetric unit conversions with given units)
- Trigonometry using sin, cos, tan and the Pythagorean Theorem
- Solving problems using factoring and the quadratic formula
- Graphs: reading of and calculating slope
- Constant acceleration problems (formulas will be provided)
- Solving word problems using logic, algebra and trigonometric functions.

60 minutes maximum will be allowed for this test.

There are 40 multiple choice questions.

Scientific calculator (with sin, cos and tan functions); No graphing calculator allowed.

IB Biology Year 1 Placement Exam

Honors Biology is a rigorous course which is prerequisite class for IB Higher Level Biology. As such, the content is taught using a college level textbook and it is taught at a level of depth comparable to general biology in college. Topics/units include:

- Scientific method
- Biochemistry/macromolecules/polymerization
- Cellular components
- Transport across a cell membrane (active & passive; osmotic environments)
- Mitosis
- Cellular respiration (including redox reactions and fermentation)
- Photosynthesis (including redox reactions and CAM/C4)
- DNA structure & replication
- Protein synthesis
- Biotechnology (equipment & bacterial transformation)
- Meiosis
- Genetics (polygenic, multifactorial, epistasis, multiple alleles, sex-linked) & genetics problems
- Evolution (Hardy-Weinberg; Theory of Natural Selection)

75 minutes maximum will be allowed for this test.

There are 66 multiple choice questions.

Basic or Scientific calculator allowed. No graphing calculator allowed.

AP Environmental Science Placement Exam

The following content areas will be included:

- Experimental Design and the Scientific Method
- Evolution
- Cellular Respiration/photosynthesis
- Basic Genetics
- Cell Function/macromolecules
- Atomic Structure/Bonding
- Energy in food chains
- Basic Ecology
- Feedback loops
- Population growth
- Scientific Notation and conversions

60 minutes maximum will be allowed for this test.

There are 48 multiple choice questions.

No calculator allowed.

English Honors Placement Exams for students petitioning to enter 9 or 10 honors

Honors English courses at the 9th and 10th grade levels study the college prep curriculum PLUS other works that help prepare students for the reading, writing and speaking requirements for English 11 and 12 IB.

Thus, the English placement exam for those students petition to enter 9 or 10 honors will include:

- A multiple-choice test that incorporates grammar and close reading strategies
- A writing assessment that will require a response to a particular reading

60 minutes maximum will be allowed for this test

IB English Year 1 Placement Exam

Honors English is a rigorous course which is a prerequisite class for IB Higher Level English. As such, the content is taught using a college level textbook and it is taught at a level of depth comparable to general English in college.

- The writing assessment will include a passage analysis or a comparison of two different texts.
- A multiple-choice test will be given that requires close reading, vocabulary and grammar

60 minutes maximum will be allowed for this test

Social Science

Due to the similar skills required in both English and Social Science, students who intend to take AP Euro History must pass the English 9/10 English honors placement exam, and students who intend to take AP US History, AP Government, or honors Economic Systems must pass the IB English exam.

Geometry H Placement Exam General Topic List

This assessment will determine the student's current aptitude levels in Algebra 1. The following skills and content areas will be included:

Algebra

- Writing the equation of a line
- Parallel and perpendicular lines
- Solve and graph linear equations and inequalities
- Solving system of linear equations
- Polynomials (add, subtract, multiply, factoring)
- Rules of exponents
- Radical expressions
- Rational expressions (simplify, add, subtract, multiply, divide)
- Solving quadratic equations
- Pythagorean Theorem
- Distance and midpoint between two points

Geometry

- Area, perimeter/circumference formulas
- Volume of cubes/prisms
- Sum of interior angles of a triangle

The exam is multiple-choice, 30 questions, 60 minutes maximum, no calculator.

Algebra 2 H Placement Exam General Topic List

This assessment will determine the student's current aptitude levels in Algebra 1. The following skills and content areas will be included:

Algebra

- Linear equations and inequalities
- Compound Inequalities
- Absolute Value Equations
- Systems of Linear Equations
- Properties of Exponents
- Radical expressions and equations
- Rational expressions and equations
- Quadratic equations
- Factoring

Geometry

- Area formulas
- Perimeter

Functions

- Operations

The exam is multiple-choice, 39 questions, 60 minutes maximum, no calculator.

Math Analysis Honors Placement Exam General Topic List

This assessment will determine the student's current aptitude levels in Algebra 2 and trigonometric functions. The following skills and content areas will be included:

- Systems and Matrices
- Mixture and work Problems
- Simplifying expressions (rational, radical, polynomial, rational exponents, logarithmic)
- Function notation and operations (including composition of functions)
- Solving equations and inequalities by undoing, factoring, completing the square, etc. (linear, absolute value, polynomial, rational, radical, exponential, logarithmic)
- Functions (linear, absolute value, piecewise, polynomial, rational, radical, exponential, logarithmic, and inverse functions)
- Conic sections
- Counting Methods and probability
- Complex numbers
- Binomial Theorem
- Sequences and Series
- Set Theory
- Trigonometric ratios, unit circle, Law of Sines and Cosines

The exam is multiple-choice, 40 questions, 60 minutes maximum, no calculator.

Calculus AP/IB Placement Exam General Topic List

This assessment will determine the student's current aptitude levels in Math Analysis (Pre-Calculus). The following skills and content areas will be included:

Algebra

- Linear equations and inequalities
- Polynomials
- Exponential expressions and equations
- Logarithmic expressions and equations
- Radical expressions and equations
- Rational expressions and equations
- Quadratic equations and inequalities

Geometry

- Area formulas
- Volume formulas

Analytic Geometry

- Distance and midpoint formulas
- Parabolas
- Ellipses
- Circles
- Hyperbolas
- Functions
- Operations
- Composition
- Transformations
- Piece-wise

Trigonometry

- Angle measures (radians and degrees)
- Arc length, segment area, etc.
- Right triangle trigonometry
- Unit Circle
- Law of Sines and Law of Cosines
- Inverse trigonometric functions
- Graphs of trig and inverse trig functions
- Transformations: amplitude, period, phase shift, center line
- Identities: fundamental, addition/subtraction, double-angle, half-angle

The exam is multiple-choice, 25 questions, 60 minutes maximum, no calculator.