NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
ACADEMIC BIOLOGY (4280)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

Given units of study involving:

The nature of life	Biology of the invertebrates
The continuity of life	Biology of the vertebrates
Microbiology	Human biology
Multicellular plants	Ecological relationships

It is standard for students to be able to:

-demonstrate a working knowledge of various pieces of scientific equipment,
-differentiate between diffusion and osmosis in maintaining a homeostatic environment,
-describe the process of photosynthesis and its role as supplier of food for all living things,
-distinguish between mitosis and meiosis,
-explain the basic principles of heredity,
-explain the structure and function of representative micro-organisms,
-distinguish between various multicellular plants on the basis of morphology and physiology,
-list and identify, in lab, and in writing, different invertebrate organisms and their respective parts,
-differentiate between various vertebrates based on their morphology and physiology,
-describe the systems and their physiology found in the human body, and
-discuss the interaction between the biotic community and the physical environment

The following **types of data** and **weightings** will be used in determining your marking period grade:

Tests & Quizzes	**60%** [approximately]
Lab Reports	**30%** [approximately]
Class participation & Written Work	**10%** [approximately]

Per **New Milford School District Regulation #2624**,

A indicates *superior* work demonstrating a high degree of initiative, commitment, and understanding

B indicates *above average* performance which demonstrates strength in the subject

C indicates *average* performance which demonstrates a satisfactory degree of proficiency

D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*

F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

Note: **plusses** and **minuses** are used to further differentiate a student's performance

NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
HONORS BIOLOGY (4260)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

Given units of study involving:

The nature of life	Multicellular plants
The continuity of life	Biology of the invertebrates
Microbiology	Biology of the vertebrates
Cellular biology	Human biology
Molecular biology	Ecological relationships

It is standard for students to be able to:

-demonstrate technical skill in using the light microscope,
-determine the characteristics of living things,
-identify and describe cell parts and functions and cell processes,
-demonstrate technical skills in DNA analysis,
-identify DNA structure and function,
-demonstrate the basic principles of heredity,
-distinguish between various members of the plant kingdom regarding classification, structure and life processes,
-describe invertebrate and vertebrate representatives of the animal kingdom, and representative microorganisms, regarding forms and ways of life,
-describe the anatomy and workings of selected systems of the human body, and
-investigate the earth's complex ecological relationships

The following **types of data** and **weightings** will be used in determining your marking period grade:

Tests & Quizzes	**60 %** [approximately]
Laboratory reports	**20 %** [approximately]
Homework	**15 %** [approximately]
Class Participation	**5 %** [approximately]

Per **New Milford School District Regulation #2624**,

A indicates *superior* work demonstrating a high degree of initiative, commitment, and understanding

B indicates *above average* performance which demonstrates strength in the subject

C indicates *average* performance which demonstrates a satisfactory degree of proficiency

D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*

F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

Note: **plusses** and **minuses** are used to further differentiate a student's performance

NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
ADVANCED PLACEMENT BIOLOGY (4480)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

Given units of study involving:

The chemical and cellular basis of life
The biology of organisms
Internal transportation systems
Cellular reproduction and inheritance
The biology of populations and communities
The protistan kingdom
The plant kingdom
The animal kingdom

It is standard for students to be able to:

-demonstrate a working knowledge of various pieces of scientific equipment,

-differentiate between organic and inorganic hydrocarbons and their effect on biological systems,

-compare the physiology of various organelles that make up both plant and animal cells on an advanced level,

-compare and contrast chromosome behavior during mitosis and meiosis,

-explain the transformation of light energy into chemical energy during photosynthesis and carbohydrate formation,

-compare how the basic structure of roots, stems, leaves, and their grow patterns are adapted to their functions, and

-distinguish between habituation, conditioning, trial and error learning, insight learning, and imprinting

The following **types of data** and **weightings** will be used in determining your marking period grade:

Tests, Quizzes, Worksheets, Independent Work and all Assigned Work	**70%**	[approximately]
Lab Work	**30%**	[approximately]

Per **New Milford School District Regulation #2624**,
A indicates *superior* work demonstrating a high degree of initiative, commitment, and understanding
B indicates *above average* performance which demonstrates strength in the subject
C indicates *average* performance which demonstrates a satisfactory degree of proficiency
D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*
F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

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NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
CONSUMER CHEMISTRY (4453)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course AND

Given units of study involving:

Atomic Structure	Periodic Table	Chemical Bonding
Chemical Reactions	Physical States	Acids and Bases
Organic Chemistry	Biochemistry	Pharmaceuticals
Explosives	Forensics	Pollution

It is standard for students to be able to:

- understand the organization and usefulness of the periodic table
- describe the atomic particles and their location and charge
- develop an understanding of the types of chemical bonding with relevant applications
- explain how and why atoms bond the way they do
-describe the various types of chemical reactions with everyday phenomena as examples
- describe the various states of matter with modern day examples
- distinguish between acids and bases regarding their formula and reactivity
- know what daily interactions involve acids and bases
- understand the significance and calculations involved in pH
- comprehend what is involved in the world of organic chemistry
- develop an appreciation for the use or organic chemistry in their every day experiences
- know when esters, and polymers are encountered in daily habits
- develop an understanding for the role of carbohydrates, lipids and proteins in our diet
- learn the chemistry involved in pharmaceuticals, cosmetics and hygiene products
- appreciate the chemistry involved in explosives and forensic chemistry
- acquire an understanding of the role of humans in pollution

The following **types of data** and **weightings** will be used in determining your marking period grade:

Tests and Quizzes	**65%** [approximately]
Laboratory reports	**25%** [approximately]
Class Participation and Homework	**10%** [approximately]

Per **New Milford School District Regulation #2624**

A indicates *superior* work demonstrating a high degree of initiative, commitment and understanding

B indicates *above average* performance which demonstrates strength in the subject

C indicates *average* performance which demonstrates a satisfactory degree of proficiency

D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*

F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course: a final grade of F receives no credit

Note: **plusses** and **minuses** are used to further differentiate a student's performance

NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
ACADEMIC CHEMISTRY (4350)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

Given units of study involving:

Measurements and laboratory techniques	Gas laws
Stoichiometry	Chemical Energy
Types of Bonding	Acids and Bases
Types of Reactions	Nomenclature
Formula Writing	Solutions
Atomic Structure	Periodicity

It is standard for students to be able to:

-gain an understanding of the metric system, density and specific gravity
-gain an understanding of the gas laws and kinetic molecular theory
-write and balance chemical equations
-solve stoichiometry problems
-gain an understanding of exothermic and endothermic reactions
-gain an understanding of basic atomic structure, Bohr atom
-be able to write electron configurations
-name any formula
-write the formula for any compound name
-identify the characteristics unique to acids and bases
-calculate the pH of a solution
-identify the type of reaction and complete the products
-describe the behavior of solutions

The following **types of data** and **weightings** will be used in determining your marking period grade:

Tests & Quizzes	**65%** [approximately]
Labs	**25%** [approximately]
Class Discussions/Homework	**10%** [approximately]

Per **New Milford School District Regulation #2624**,
A indicates *superior* work demonstrating a high degree of initiative, commitment, and understanding
B indicates *above average* performance which demonstrates strength in the subject
C indicates *average* performance which demonstrates a satisfactory degree of proficiency
D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*
F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

Note: **plusses** and **minuses** are used to further differentiate a student's performance

NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
HONORS CHEMISTRY (4380)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

Given units of study involving:

Measurements and laboratory techniques
Gas laws
Stoichiometry
Types of Bonding
Types of Reactions
Formula Writing
Atomic Structure
Chemical Kinetics
Gas laws
Chemical Energy
Acids and Bases
Nomenclature
Solutions
Periodicity
Equilibrium

It is standard for students to be able to:

-gain an understanding of the metric system, density and specific gravity
-gain an understanding of the gas laws and kinetic molecular theory
-write and balance chemical equations
-solve stoichiometry problems
-gain an understanding of exothermic and endothermic reactions
-gain an understanding of basic atomic structure, Bohr atom
-be able to write electron configurations
-name any formula
-write the formula for any compound name
-identify the characteristics unique to acids and bases
-calculate the pH of a solution
-identify the type of reaction and complete the products
-describe the behavior of solutions
-be able to solve chemical kinetics and equilibrium problems

Final grade for each marking types of data and **weightings** will be used in determining your marking period grade:

Tests & Quizzes	**65%** [approximately]
Labs	**25%** [approximately]
Class Discussions/Homework	**10%** [approximately]

Per **New Milford School District Regulation #2624**,
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B indicates *above average* performance which demonstrates strength in the subject
C indicates *average* performance which demonstrates a satisfactory degree of proficiency
D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*
F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

Note: **plusses** and **minuses** are used to further differentiate a student's performance

NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
ADVANCED PLACEMENT CHEMISTRY (4490)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

Given units of study involving:

Measurements and laboratory techniques
Stoichiometry
Types of Bonding
Types of Reactions
Formula Writing
Atomic Structure
Chemical Kinetics
Electrochemistry
Gas laws
Chemical Energy
Acids and Bases
Nomenclature
Solutions
Periodicity
Equilibrium
Organic Chemistry

It is standard for students to be able to:

-gain an understanding of the metric system, density and specific gravity
-gain an understanding of the gas laws and kinetic molecular theory
-write and balance chemical equations
-solve stoichiometry problems
-gain an understanding of exothermic and endothermic reactions
-gain an understanding of basic atomic structure, Bohr atom
-be able to write electron configurations
-name any formula
-write the formula for any compound name
-identify the characteristics unique to acids and bases
-calculate the pH of a solution
-identify the type of reaction and complete the products
-describe the behavior of solutions
-be able to solve chemical kinetics and equilibrium problems
-understand and solve problems in electrochemistry
-be able to name and draw organic structures
-complete basic organic reactions

The following **types of data** and **weightings** will be used in determining your marking period grade:

Tests & Quizzes	**65%** [approximately]
Labs	**25%** [approximately]
Class Discussions/Homework	**10%** [approximately]

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B indicates *above average* performance which demonstrates strength in the subject
C indicates *average* performance which demonstrates a satisfactory degree of proficiency
D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*
F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

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NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
ACADEMIC PHYSICS (4460)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

Given units of study involving:

Measurement and lab techniques	Dynamics
Graphical analysis	Machines
Vector analysis	Waves and optics
Kinematics	Electricity
Astronomy	Energy

It is standard for students to be able to:

-follow instructions, collect data and analyze it,

-use graphical analysis to view kinematics,

-comprehend and test Newton's Laws,

-evaluate the relationships between v, a, t, d, f, and m,

-determine AMA, IMA, and EFF,

-diagram, analyze and locate five optic image cases,

-understand how wave phenomena relates to light and sound,

-comprehend basic electrical properties,

-apply OHMS Law to simple networks,

-apply the interaction of electricity and magnetism, and

-recognize that all of nature is governed by the laws of physics and man is just the tool for unraveling these secrets,

The following **types of data** and **weightings** will be used in determining your marking period grade:

Tests and Quizzes	**50%** [approximately]
Laboratory reports and methods	**30%** [approximately]
Classwork, (attitude, response, homework)	**20%** [approximately]

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D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*
F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

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NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
HONORS PHYSICS (4390)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

Given units of study involving:

Measurement and lab techniques	Machines
Vectors	Optics
Kinematics	Waves
Dynamics	Electricity

It is standard for students to be able to:

-analyze and predict motion through graphing,

-utilize vector analysis to explain velocity and acceleration,

-gain an understanding of Newton's Laws,

-calculate trajectory of projectiles,

-determine AMA, MIA and efficiency of machines,

-observe, calculate and compare real and virtual images,

-use comprehensive of save phenomena to explain light,

-apply OHMS Law to analyze simple networks,

-obtain a working understanding of electromagnetics, and

-obtain a literate working knowledge of special and general relativity

The following **types of data** and **weightings** will be used in determining your marking period grade:

Tests and Quizzes	**60 %** [approximately]
Laboratory reports	**30 %** [approximately]
Class Participation and Homework	**10 %** [approximately]

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B indicates *above average* performance which demonstrates strength in the subject

C indicates *average* performance which demonstrates a satisfactory degree of proficiency

D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*

F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

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NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
MARINE BIOLOGY (4450)

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

Given units of study involving:

Principles of marine science
Adaptations of marine plants and animals
Biological zonation and energy/materials flow
Ecological interactions within diverse communities
Effect of estuarine flow on continental shelf biota
Life near the surface and at various depths
Resources from the sea and the human environmental impact
The oceans and human affairs

It is standard for students to be able to:

-demonstrate a working knowledge of various pieces of scientific equipment
-compare the seasonal biotic/abiotic changes in local marine environment
-produce a field report based on a minimum of 2 on site inspections of said environment on an individual basis
-collectively and individually construct collecting, containments, and transportation devices for local marine organisms
-interact together in small groups to solve the mechanics of duplicating a marine habitat for study away from the source
-maintaining (troubleshooting) the biological viability of student collected organisms for the course duration
-select a specific organism or group by each student of a team to monitor during the length of the course
-to perform various experiments on said student collected materials and/or selected preserved organisms

The following **types of data** and **weightings** will be used in determining your marking period grade:

Tests & Quizzes	**40 %** [approximately]
Directed Labs	**20 %** [approximately]
Individual Class Participation	**15 %** [approximately]
In-house Field Set-up Maintenance, Record Keeping and Analysis	**25 %** [approximately

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D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*
F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

Note: **plusses** and **minuses** are used to further differentiate a student's performance

NEW MILFORD HIGH SCHOOL
COURSE REQUIREMENTS
FOR
Forensic Science

Given current school/class attendance regulations and the school discipline code, both of which set limits under which students can earn marks and credit in a course, AND

I. The Goals of Forensic Science
II. Physical Evidence and evidence collection
III. Fingerprinting
IV. Forensic Anthropology
VI. Hair and Fiber Analysis
VII. Bloodspatter Analysis
VIII. DNA Analysis
IX. Footwear Evidence
X. Handwriting Analysis
XI. Ballistics and Firearms
XII. Toolmark Analysis
XIII. Drugs and Toxicology

It is standard for students to be able to:

- support their ideas with research
- apply forensic principals to solve a crime
- effectively collect and catalog evidence according to police standards
- use their knowledge of forensics to think logically about solving a crime
- use current practices to apply to real world situations
-

The following **types of data** and **weightings** will be used in determining your marking period grade:

Hands-on Work and Class Participation	**60%** [approximately]
Quizzes and in-class assignments	**20%** [approximately]
Final Crime Scene	**20%** [approximately]

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D indicates poor performance which demonstrates a weak proficiency and is *minimally acceptable*
F indicates the student has *not met the minimum requirements* and has demonstrated an inability or unwillingness to master the basic elements of this course; a final grade of F receives no credit

Note: **plusses** and **minuses** are used to further differentiate a student's performance