

NEW MILFORD BOARD OF EDUCATION
New Milford Public Schools
50 East Street
New Milford, Connecticut 06776

COMMITTEE ON LEARNING
MEETING NOTICE

DATE:	November 16, 2010
TIME:	7:30 P.M.
PLACE:	Lillis Administration Building – Room 2

AGENDA

New Milford Public Schools Mission Statement

The mission of the New Milford Public Schools, a collaborative partnership of students, educators, family, and community is to prepare each and every student to compete and excel in an ever-changing world, embrace challenges with vigor, respect and appreciate the worth of every human being, and contribute to society by providing effective instruction and dynamic curriculum, offering a wide range of valuable experiences, and inspiring students to pursue their dreams and aspirations.

A. CALL TO ORDER

B. PUBLIC COMMENT

The Board welcomes public participation and asks that speakers please limit their comments to 3 minutes. Speakers may offer objective comments of school operations and programs that concern them. The Board will not permit any expression of personal complaints or defamatory comments about Board of Education's personnel and students, nor against any person connected with the New Milford Public School System.

C. DISCUSSION AND POSSIBLE ACTION

1. Technology Curriculum
2. Approve Five-Year Curriculum Plan

D. ITEMS FOR DISCUSSION

1. Chemical Hygiene Plan
2. Professional Development Plan for 2011-2012

E. ADJOURN

Sub-Committee Members:

Mrs. Alexandra Thomas, Chair

Mr. David A. Lawson

Mrs. Lynette Celli Rigdon

Mrs. Nancy C. Tarascio-Latour

Alternates:

Mr. Thomas McSherry

Mr. Rodney Weinberg

NEW MILFORD, CT

New Milford Public Schools
Office of the Assistant Superintendent
Five-Year Curriculum Plan 2010-2015

Subject/Area	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Business & Practical Arts/ Technology	Revise: Computer Programming '04 Marketing I '05 Marketing II '05 Marketing Work Program Propose New Course: "Personal Finance" Estimated Cost: \$4200	Revise: Arch. Drafting II '00 Basic Auto Cad '05 Business Computer App. '05 Business Law '05 Keyboarding '99 Develop: General Woodworking Introductory Woodworking Estimated Cost: \$4800	Revise: Practical Arts 7-8: Foods & Nutrition Metal Sewing & Textile Tech Woods Develop: Projects Unlimited	Revise: Arch. Drafting I '07 Arch. Drafting II '00 Arch. Drafting III '06 Website Design I '07 Website Design II	Revise: Accounting I '09 Accounting II College '07 Adv. Auto CAD '09 Machine Drafting '03 Technical Drafting '04
English/ Language Arts K-12	Continue to Develop: Grades K-8 LA English I English II English III Revise: English IV (A/B) '07 Estimated Cost: \$21,625	Continue to Develop: Grades K-8 LA English I English II English III Revise: AP English '07 Creative Writing '07 SAT Prep Writing Workshop '07 Estimated Cost: \$22,170	Continue to Develop: English I English II English III Revise: Fiction: Science '07 Short '07 Journalism I & II '07 Modern Poetry '07 World Literature: British Literature I & II '08 Humanities I & II '07 Shakespeare '07	Revise: Children's Literature '08 Public Speaking '08 SAT Prep Video Production '08	Revise: Adv. Creative Writing '08 American Studies '09 Drama Workshop '08
Fine Arts	Revise: Ceramics I Ceramics II Estimated Cost: \$1570	Revise: Advertising Art & Design Crafts '98 Estimated Cost: \$1180	Revise: Cut, Paste & Copy '91 Design Foundations I '04 Design Foundations II '04 Studio Art & AP '05	Revise: AP Art History '05	Revise: Portfolio '09 Sculpture '09

**New Milford Public Schools
Office of the Assistant Superintendent
Five-Year Curriculum Plan 2010-2015**

Subject/Area	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Library Media					Revise: K-12 Library-Media
Mathematics K-12	Revise: Grade 8 Algebra III '04 Calculus Honors '04 Integrated Math '09 Estimated Cost: \$5100	Revise: Grades K-6 Adv. Algebra & Trig. '06 Algebra II '07 Geometry '05 Intermediate Algebra II '06 SAT Prep Estimated Cost: \$13,110	Revise: Applications Math '07 AP Statistics '08 Consumer Math '07 Geometry Honors '07	Revise: Algebra II Honors '09 Applied Geometry '07 Pre Calculus Honors '08 SAT Prep Statistics '07	Revise: Algebra I '08 Algebra I Honors '09 AP Calculus '08 Elementary Algebra '07

New Milford Public Schools
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Five-Year Curriculum Plan 2010-2015

Subject/Area	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Music K-12	Revise: General Music Grade 8 Estimated Cost: \$790	Revise: Choral Music Grades 4-12 History of Am. Music Theater Estimated Cost: \$2300	Revise: Inst. Music Grades 4-12 Electronic Music Tech. 	Revise: General Music Grades K-7 History of Jazz 	Revise: Music Appreciation Music Theory
PE/Health K-12	 Propose New Elective: "Early Childhood" Estimated Cost: \$2420	Revise: Health I & II '96 PE I '97 PE II '97 PE III & IV '97 Estimated Cost: \$1425	Revise: Allied Health Careers '97 EMT '06 Medical Technology '00 Sports Medicine '08 Propose New Elective: "Wellness"	Revise: Adventure Ed. (7-12) '08 PE Leader Propose New Elective: "Sports Performance"	Revise: Child Development '10 Propose New Elective: "Outdoor Education"
Science K-12	Coordinate K-8 with GLE's and CCSS Estimated Cost: -0-	Coordinate K-8 with GLE's and CCSS Revise: Ecology/Fall '06 Ecology/Spring '06 Exper. Chemistry '02 Estimated Cost: \$2060	Coordinate K-8 with GLE's and CCSS Revise: AP Biology '07 Astronomy '06 Biology '07 Environ. Earth Science '06	Revise: AP Chemistry '08 Physics '07 Physics Honors '07	Revise: Anat./Phys. Honors I&II '09 AP Physics '09 Chemistry '08 Chemistry Honors '06 Forensic Science '09 Plant Science I & II '08

**New Milford Public Schools
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Subject/Area	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Social Studies K-12	Revise: Grades 7-8 Revise: Civics '02 Estimated Cost: \$790	Revise: Global Studies '00 Sociology '04 Western Civilization '98 Propose new electives: "Forensic Psychology" Estimated Cost: \$5750	Revise: AP Psychology '04 Civics Economics '07 History Through Film '05	Revise: AP US History '07 Chinese Studies Honors '07 Modern America '05 Propose new electives: "Macro Economics"	Revise: Am. Studies Honors '09 Intellectual History '09 Introduction to Psych. '10 Russian Studies '06 US History '09 US History Honors '09
World Languages 7-12	Revise: German I '05 German II '05 German III '05 Estimated Cost: \$2545	Revise: AP German '05 German IV '05 Spanish I & II '06 Estimated Cost: \$3820	Revise: AP Spanish '07 Spanish III, IV '07	Revise: French I '08 French II '08	Revise: AP French '09 French III & IV '09 Russian Studies '06

Schaghticoke Middle School

Chemical Hygiene Plan

Final Draft

11.05.10

Gary Barker; Science Department Chair
Susan Stoughton, Chemical Hygiene Officer



Schaghticoke Middle School

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(860) 354-2204 Fax (860)-210-2216

Chemical Hygiene Plan

For Science Department of Schaghticoke Middle School

The Chemical Hygiene Plan for Science Department of Schaghticoke Middle School is written to comply with criteria applicable to the school science laboratory found in:

OSHA "Occupational Exposure to Hazardous Chemicals in Laboratories"
(29 CFR 1910.1450) or "Laboratory Standard" took effect in 1990.

And

Connecticut Middle School Science Safety: Prudent Practices and Regulations
Connecticut State Department of Education

And

American National Standards Institute (ANSI)

And

National Fire Protection Association (NFPA)

And

International Code Council (ICC)

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School District Responsibilities

The school board and the school district superintendent have the ultimate responsibility to ensure the institution complies with the Laboratory Standard. Several of these tasks are the following:

- 1) Record all employee exposures to hazardous chemicals.
 - a) Record all chemical exposures and use monitoring instruments to get hard data. Obtain and keep up-to-date information provided by a medical examination.
 - b) Keep these records and allow employee access to these records, including all employee exposure and medical records.
- 2) Train employees to do the following:
 - a) Understand the hazards of chemicals they use in the laboratory.
 - b) Recognize signs and symptoms associated with overexposure to hazardous chemicals.
 - c) Properly use personal protective equipment (fume hoods, respirators, goggles, etc.)
 - d) Protect themselves from chemical exposure by following good laboratory procedures.
 - e) Understand the content of the Chemical Hygiene Plan.
- 3) Provide access to all employees of the following:
 - a) MSDS (Material Safety Data Sheets).
 - b) Previous exposure records (if any).
 - c) Previous medical records (if any).
 - d) The Laboratory Standard and Chemical Hygiene Plan.
 - e) Permissible exposure limits of hazardous chemicals used in the laboratory.

Chemical Hygiene Officer

The Chemical Hygiene Officer shall be a member of the science department or administrative staff as assigned annually by the Department Chair.

_____ has been appointed Chemical Hygiene Officer at Schaghticoke Middle School.

Science Department Chair

Date

Although the New Milford Public Schools are designating _____ to be our Chemical Hygiene Officer, we realize the success or lack of success of our Chemical Hygiene Plan rests with all our employees. The ultimate responsibility of the Chemical Hygiene Plan rests with the School Board and the School District's Superintendent.

Superintendent of Schools

Date

A copy of this completed form is to be filed with the Chemical Hygiene Plan in the Department Chair's office of Schaghticoke Middle School.

Chemical Hygiene Officer Duties

Role:

Chemical Hygiene Officer has the duty and responsibility of monitoring the Chemical Hygiene Plan at Schaghticoke Middle School. A Chemical Hygiene Officer will be appointed at the school on an annual basis by the Department Chair.

Duties will include the following:

1. Being familiar with all aspects of the Chemical Hygiene Plan, especially chemical storage and safety provisions in the science area.
2. Being a contact person for disseminating information involving chemical safety to employees of the school. This will include an annual in-service for employees (See the Employee Training component).
3. Being a resource for employees at the school on matters involving the use of chemicals in the science laboratory.
4. Inspecting safety equipment at the beginning of each semester and cooperating with the annual inspection of laboratories and chemical storage areas. (See page 4 – Compliance and page 13 – Facilities and Safety Equipment of Science Laboratories).
5. Reporting to the school principal and any other persons deemed necessary, any conditions involving chemicals that pose risks to health or safety.
6. Monitoring science, chemical inventories and updating the school, chemical inventory list when necessary.
7. Making requests to the maintenance department for disposal of unwanted chemicals from the science area. A request for disposal of unwanted chemicals includes the name of the chemical, if known, and the quantity of the chemical.

While the appointment of a Chemical Hygiene Officer is intended to enhance safety for employees, it does not lessen the responsibility of any employee to learn and practice safe procedures for working and teaching in a school science laboratory.

Chemical Hygiene Plan Overview

Purpose: The Chemical Hygiene Plan has been developed to provide employees of Schaghticoke Middle School with information necessary to safely work in the school science laboratory.

Access: All components of the Chemical Hygiene Plan will be available to all employees as follows:

1. The school has copies of the Chemical Hygiene Plan, the school chemical inventory, and the Materials Safety Data Sheets in the science chemical storage room.
2. Each science teacher will be given access to a copy of the Chemical Hygiene Plan through the common shared staff folder on the SMS server. The plan is located in the Chemical Hygiene Plan folder. In addition the Chemical Hygiene Plan and Materials Safety Data Sheets will be given to the school nurse, the school custodian, and the maintenance department and kept in a location known and accessible to all custodians.
3. Records of previous exposure or medical records related to hazardous chemicals in the science laboratory will be available from the Human Resources office.

Revisions: All components of the Chemical Hygiene Plan will be reviewed annually and necessary revisions will be made and disseminated.

Compliance: An annual evaluation of compliance to the OSHA Laboratory Standards and an inspection of the science chemical storage areas of the school will be conducted. A written report will be completed noting any conditions not in compliance with the OSHA Hazardous Chemicals in Laboratories Standards and the Chemical Hygiene Plan for the Science Department of Schaghticoke Middle School. Problems indicated by the inspection will be noted and corrective measures will be taken in a timely manner with the cooperation of the school. A copy of the inspection report and any notations will be kept by the school Chemical Hygiene Officer and the Department Chair and may be viewed by other employees of the school upon request.

Standard Operating Procedures

I. General Rules for Employees

All employees involved in the science laboratory environment or teaching a science lesson involving chemicals must read and adhere to the provisions of the Science Safety Guidelines for Teachers and model the same correct, safe behaviors expected of students in the Science Safety Acknowledgement (See Appendix C).

No teachers or other employees should attempt a laboratory experiment unless they are appropriately trained in that science discipline, are fully aware of possible hazards, and are willing to follow all procedures necessary for a safe laboratory experience. No experiment is justified if the safety of an employee or student is in doubt.

In addition **employees should do the following:**

1. Minimize all chemical exposure.
2. Not underestimate chemical hazards.
3. Know and understand the hazards of each chemical reactant and each of the products of chemical experiments as stated in the MSDS and lab directions. Have MSDS sheets for each specific lab in the classroom when lab is being performed (See Appendix D).
4. Wear appropriate eye protection **at all times**.
5. Use protective safety equipment to reduce potential exposure (i.e., gloves, fume hood, etc.). A safety shield or fume hood must be used for hazardous demonstrations.
6. Never perform a first-time chemical demonstration in front of your class. Always perform first-time demonstrations in front of other instructors to evaluate the safety of the demonstration.
7. Know the locations for all personal safety and emergency equipment such as eye wash, shower, fire extinguisher, and spill control materials.
8. Know appropriate emergency procedures, waste disposal, spill clean up, evacuation routes, and fire emergency notification.
9. Only teachers/staff may handle concentrated materials requiring mixing or dilution.
10. Exercise great care in moving chemicals from room to room. Use trays or carts with raised edges for moving glassware and chemicals.
11. Wash hands thoroughly after handling any chemicals or materials.

II. Specific Procedures and Guidelines for Safety in the Schaghticoke Middle School Science Laboratory

The procedures and guidelines below are designed to avoid a number of hazardous situations, however, it must be realized that some employees may be exposed to chemicals on a daily basis for a long period of time. These employees should be especially aware of the toxicological information on the Material Safety Data Sheets for chemicals they frequently use.

1. Laboratories will be used only by persons with proper qualification and training. The SMS lab/lecture classrooms were designed to accommodate twenty-four (24) students and one teacher. **In situations where the safe occupancy load (twenty-five) relative to the lab being performed is exceeded, including other participating staff members such as co-teachers and/or paraprofessionals, the teacher must either not perform the lab or students must be removed from the room on a rotating basis until a safe number is achieved.**
2. It is the teachers' responsibility to know any hazards that might be associated with a laboratory experiment or demonstration and to take steps to protect themselves and their students against such hazards. Only demonstrate experiments and/or have students perform experiments that are very familiar. If there is any doubt about the safety of an experiment, consult the designated Chemical Hygiene Officer.
3. Never perform laboratory experiments without a review of potential hazards. When possible, perform chemical experiments from a published procedure.
4. Students must be under the active supervision of a teacher during any science experiment. Teachers are never to leave the room while students are engaged in a laboratory exercise or when chemicals or equipment are in use in the room.
5. Teachers must be familiar with all safety equipment and emergency procedures.
6. Personal protective equipment (i.e., safety goggles, aprons, gloves, foot wear, etc.) appropriate to the laboratory experiment must be used at all times (**see Facilities and Safety Equipment for Science Laboratories on pages 12 to 13 of this document**). If students are observing a chemistry demonstration, particularly with flammable substances, a protective **safety shield** must be used in addition to the safety goggles.
7. The teaching environment should be appropriate for the science activities performed. (**see No. 1 above and Facilities and Safety Equipment for Science Laboratories on page 12 of this document**). Student maturity and behavior should be taken into consideration when selecting laboratory exercises.
8. Know the location and proper use of fire extinguishers and spill kits.

9. At the start of the year, students must be instructed and evaluated on general safety in the laboratory as well as specific safety equipment in their classrooms. They must be given the Schaghticoke Middle School "Safety Acknowledgement" (Appendix C) to be read and signed by both student and parent.
10. Safety rules specific to the experiment must be reviewed and general safety precautions posted and reinforced before all lab activities.
11. Students must be instructed in procedures for leaving the science room under emergency conditions.
12. Teachers must keep all exits, shower and eyewash areas, fire extinguisher, and aisles clear and free of clutter.
13. Post emergency telephone numbers in the classroom and chemical storage area. Have a telephone or other means of emergency communication in the laboratory.
14. Any chemical spill will be treated as potentially hazardous until the chemical(s) have been identified and the MSDS information regarding proper handling and precautions have been reviewed by the science teacher, Department Chair, and/or Chemical Hygiene Officer. Chemical spill kits will be available in each laboratory and in the chemical storage room to handle small chemical spills. Large amounts of potentially hazardous substances will not be kept in the chemical storage room. If a chemical spill or leak is considered to be hazardous based upon the MSDS information and does require evacuation, immediate contact of the local fire department's hazmat team will be made and existing evacuation procedures will be followed. Training regarding the use of the spill kits will be provided annually.
15. The use or storage of mercury or mercury compounds is **prohibited**.
 - a. Thermometers, barometers, or other devices containing mercury are not to be used. Although slightly less accurate, non-mercury thermometers remove a serious safety hazard and a troublesome clean up procedure. The use of electronic substitutes, such as probeware is encouraged.
 - b. Notify the Department Chair (Ext. 246) to dispose mercury-containing devices
 - c. In the event of spilled mercury, do the following:
 - Remove students from classroom while avoiding walking in the area or dispersing the mercury in any way
 - Maximize ventilation, open windows, doors, use fans
 - Notify Department Chair
 - Access Mercury Spill Kit located in the science prep room
 - Do not use brooms, brushes, mops, or vacuum cleaners on the spill. Wearing gloves gently push the mercury beads together with stiff paper. Larger beads may be picked up with a medicine dropper and the medicine dropper put into a seamless plastic bottle. Glass fragments can be scooped up with stiff paper (do not use your fingers) and put into the bottle also.
16. Do not use chipped, etched, or cracked glassware. Glassware that is chipped or scratched presents a serious breakage hazard when heated or handled.

17. Do not pipette by mouth. Always use a pipette bulb or other appropriate suction device.
18. Wash thoroughly after any chemical exposure or before leaving the laboratory.
19. Never smell chemicals directly; always waft the odors to your nose using your hand.
20. Food should not be consumed or stored in the laboratory.
21. Read all labels carefully; the names of many chemicals look alike at first glance.
22. Handle toxic, corrosive, flammable, and noxious chemicals under a fume hood.
23. Do not expose flammable liquids to open flame, sparks, heat, or any source of ignition.
24. At least every semester inspect all shelf clips in your acid cabinet to check for possible corrosion. Corroded shelf clips can lead to a shelf collapsing and causing dangerous spills.
25. Use extreme caution when handling finely divided (dust-like) material. Finely divided materials may form explosive mixtures with air and also make inhalation of toxic materials more likely.
26. Discourage the use of contact lenses in areas where chemicals are used or stored.
27. Do not operate and do not allow a student to operate any piece of equipment that is not thoroughly familiar to you. Be sure that you have thoroughly explained the operation procedures to the student.
28. Instruct students in the proper use of flames or heating elements before use in an experiment. The use of alcohol burners is prohibited in the middle school. The use of open flames should be cleared with the Chemical Hygiene Officer and/or Department Chair.
29. Magnifying glasses can cause eye damage if a student looks through them at the sun.
30. Inspect all electrical cords before use. Keep areas around electrical cord, outlets, and equipment dry.
31. **No lab exercises involving the collecting or use of blood or other bodily fluids are to be performed.** Blood experiments are to be done with commercially available blood substitutes, and microscopy of human blood is to be done with commercially prepared slides and not fresh smears.

32. The deliberate culture of microorganisms should be done only if the teacher is familiar with safe culture procedures. Bacterial cultures should only be done as teacher demonstration at the middle school level with safe bacteria sources, such as live yogurt and kefir cultures. No cultures are to be made using known pathogens. Human and animal body fluids, including saliva, are not to be cultured.
33. Vertebrate animals should be kept in the classroom only if they can be treated humanely and their handling monitored by the teacher. Animals capable of inflicting bites should be displayed only, not handled. No experimentation that causes pain, malnutrition, thirst, or other stress to an animal is permissible.
34. Students and teachers should wash their hands thoroughly after handling chemicals, plants, and/or animals.
35. Observe the following guidelines for **Science Field Trips**:
- Field trips must be well planned and include activities that support the curriculum.
 - Students must be under competent adult supervision. The number of adult supervisors should be appropriate for the type of field trip and the age and maturity of the students.
 - Field studies that leave the natural environment undisturbed are encouraged. If collecting specimens for further study, be conservative in the number of specimens collected and use methods that cause the least disruption to the habitat. Do not collect any rare or endangered species. Do not remove any specimens from a protected area such as a park, conservation area, or nature preserve.
 - Do not use bare hands when turning over rocks, logs, etc. or when handling animals capable of inflicting bites and stings. Regard the field trip site as a lab setting and provide protective equipment if necessary.
 - Do not allow students to eat or taste plant material collected in the wild or to drink from ponds, streams, or lakes.
 - Avoid using glass containers in the field. Use plastic or cardboard containers for collecting or transporting materials.
36. All accidents or near accidents (close calls) should be carefully analyzed with the results distributed to all who might benefit. Share the information with at cluster meetings and department meetings.
37. In the event of an injury, fill out an accident report describing the event in detail. Accident report forms are obtainable from the school nurse or the main office.

III. Chemical Storage Rules and Procedures for Science Teachers

No chemicals should be purchased or used in science laboratory exercises unless they:

- (a) support the essential understandings and/or the essential knowledge found in Connecticut's Core Science Curriculum Framework and Standards, including Grade Level Expectations and
- (b) are published in an appropriate laboratory manual with complete instructions.

Chemicals are to be purchased from commercial chemical suppliers except for those chemicals listed in Appendix A that may be purchased from local community suppliers. **Under no circumstances** are chemicals to be accepted as gifts or otherwise acquired from private individuals, manufacturing companies, government agencies, etc. without prior permission from the Chemical Hygiene Officer and Department Chair. The teacher should be familiar with any exercise involving chemicals and follow safe procedures for use and storage of those chemicals.

The quantity of chemicals stored should not be excessive. It is recommended that quantities be limited to amounts no greater than what will be consumed over two academic years. Refer to the Flinn catalog for specifications on shelf life and storage directions.

1. An updated inventory of all chemicals, their quantities, and storage location must be kept in the science department.
2. All chemicals including solutions you have made must be clearly labeled as to contents and concentration. In addition, the date of purchase or mixing should be written on the label whenever possible.
3. **No unlabeled chemicals** are to be stored.
4. The use of food containers for storage is prohibited unless the old label is completely removed and the container is cleaned completely.
5. All chemicals should be stored in chemically compatible families. Refer to the Flinn catalog for information about compatible families.
6. Store chemicals in a separate, locked, dedicated storeroom. If chemicals are used in the classroom for lab exercises, **they must be returned to the proper storage location at the end of the lab**. Chemicals should not remain in the classroom for longer than three weeks. **Fume hoods should never be used for storage of chemicals or equipment.**
7. Only authorized personnel are allowed in the chemical storage area which must be kept **locked at all times**
8. Store the minimum amount of chemicals needed and avoid bulk purchases. Smaller containers reduce the likelihood of contamination and lessen the severity of spills.

9. To reduce the potential for overexposure to more hazardous materials consider purchasing ready-to-use products that require no mixing or dilution of concentrated ingredients when appropriate.
10. Store corrosives in appropriate corrosives cabinets.
11. No flammable materials should be stored outside of an approved flammables storage cabinet unless in safety cans.
12. Store flammables away from all sources of ignition.
13. Avoid storing hazardous chemicals on shelves above eye level.
14. The storage area and cabinets should be labeled to identify the hazardous nature of the products stored within.
15. Consumable food must not be placed in the same refrigerator as chemicals or biohazard material. Refrigerators used for non-consumable materials should be labeled "Contents Not for Human Consumption." Use appropriate signs for both types of refrigerators.
16. Chemicals should not be stored on the floor except in approved shipping containers.
17. Storage areas should be well-ventilated.
18. Chemical exposure to heat or direct sunlight should be avoided.
19. Reduce the accumulation of waste by disposing of it as soon as possible after use. This will eliminate the complications associated with the disposal of large quantities.
20. Metal and glass containers of flammable liquids are limited to a maximum size of one gallon.
21. Compressed gas cylinders containing Acetylene and liquefied gas should not be used at Schaghticoke Middle School.
22. Employees conducting an inventory or inspection of a chemical storage area must wear splash goggles and lab coats. If chemical containers are being rearranged, employees are not to work alone without the knowledge of another employee who will check on the person every hour.

23. Important notes on chemical disposal :

- a. All unknown chemicals will be considered hazardous.
- b. In general, the small quantities (test tube amounts) of chemical waste generated by the science laboratory pose no problem for water treatment plants. Flush with adequate amounts of water to protect plumbing. If there are any questions about a substance, consult with the Chemical Hygiene Officer.
- c. Biological preservatives such as alcohol or formalin may be flushed with water if quantities do not exceed a few gallons; however, it is suggested that specimens be ordered in packaging that uses the minimum amount of preservative. Non-formaldehyde preservatives are preferred.
- d. Preserved dissection specimens may be disposed of like any other materials going to the landfill.

IV. Facilities and Safety Equipment for Science Laboratories

For the safe operation of the science laboratory the following conditions are necessary where chemicals, open flames, heating of glassware, or release of fumes are involved.

Engineering Controls: (environmental settings)

- Adequate laboratory ventilation must be provided when chemical fumes are liberated. Exhaust air must be vented externally to the building or otherwise purified. Occupied Lab air exchange rates should be 4 - 12 times an hour based on the OSHA standard.
- Fume hoods are located in six out of the eight classroom/labs, including room 246 and rooms 248-251. Fume hoods must be functional and will be checked and certified operational twice a year by the Director of Facilities, John Calhoun, or his designee.

Administrative Controls: (work practices)

- **The number of students assigned to the laboratory shall not exceed the number of laboratory stations available. The SMS lab/lecture classrooms were designed to accommodate twenty-four students and one teacher. In situations where the safe occupancy load, twenty-five, relative to the lab being performed is exceeded, including other participating staff members such as co-teachers and/or paraprofessionals, the teacher must either not perform the lab or students must be removed from the room on a rotating basis until a safe number is achieved.**
- An easily accessible fire blanket must be present where open flames are used. Fire blankets are located in all classroom/labs.
- Tri-class ABC fire extinguishers must be in every science classroom/lab and storage area, and they must always be properly inspected every six months.
- Chemical spill kits must be stored in each science lab.
- Eyewash stations must be functional and flushed at least once a week.
- Goggles must be sanitized, if used by more than one student, using ultra-violet cabinets, disinfectants, alcohol, or dish detergents.
- Full body showers should be located in all science classroom/labs.
- Running water should be available for hand washing in laboratories using preserved specimens or handling chemicals.
- Work and floor surfaces should be cleaned regularly and kept free of clutter.

Personal Protective Equipment: (protective gear)

- Clean and functional indirect vent splash goggles must be available in all science classroom/labs except in classrooms solely designated for physics where safety glasses must be available. Chemical splash goggles must meet ANSI Z87.1 Standard.
- Chemical resistant aprons suitable for corrosive chemicals must be available.
- Appropriate gloves must be available for labs involving potentially staining or corrosive chemicals. Avoid latex gloves due to possible allergic reactions.
- A safety shield must be available for demonstrations. This does not remove the responsibility for wearing safety goggles.

In no instance should a classroom not properly equipped be used for laboratory exercises involving chemicals, flames, or release of fumes. The Chemical Hygiene Officer must inspect all safety equipment at the beginning of each semester and correct deficiencies immediately. The Chemical Hygiene Officer must keep documentation of corrective actions taken.

New Employee Training

At the beginning of each year, the Chemical Hygiene Officer will provide an orientation about the Chemical Hygiene Plan to employees who will be working in the science laboratory and chemical storage areas. By signing a yearly training sheet employees will indicate they have received this training. Employees hired after this orientation must be presented the same information before they begin work in the science laboratory.

The orientation will include the following:

1. Distribution of the written Chemical Hygiene Plan for Schaghticoke Middle School Science Department to each science teacher and maintenance/custodial department. If these employees have copies already, any changes or updates of information will be provided.
2. The chemical inventory and Material Safety Data Sheets will be found just inside the chemical storage room door connected to room 242. Copies of MSDS sheets will also be located in the nurse's office and the front office.
3. Procedure for reporting accidents.
4. Procedure for reporting unsafe conditions.
5. Procedure for medical treatment involving chemical exposure: source of information for medical treatment is found on Material Safety Data Sheets.
6. Procedure for acquiring and disposing of chemicals. The Chemical Hygiene Officer or Department Chair should send a request for disposal of unwanted chemicals including the name of the chemical, if known, and the quantity of the chemical to the Director of Maintenance. The Department Chair and Chemical Hygiene Officer must give approval in writing for the acquisition of any chemicals not on the Chemical Inventory List.
7. Instruction on how to read the Material Safety Data Sheets to obtain appropriate hazard information.
8. A reminder of the list of chemicals prohibited in the school science laboratory.
9. Instruction on emergency procedures in the event of fire, chemical spills, or injury.

Additional employee training should be regularly included in science department meetings and/or other in-service meetings.

Appendix A

Definitions for Understanding Laboratory Safety

For classroom science teachers to work successfully in the safety arena, they need to understand how OSHA definitions apply to the laboratory. OSHA definitions are keys to developing chemical hygiene plans. They help to foster understanding of standard operating procedures. This in turn helps science teachers plan better and work toward securing and maintaining a safe work environment in the laboratory for all occupants. Working definitions include the following:

Action level means a concentration designated in 29 CFR part 1910 for a specific substance, calculated as an eight (8)-hour time-weighted average, which initiates certain required activities such as exposure monitoring and medical surveillance.

Chemical Hygiene Officer means an employee whom the employer designates, and who is qualified by training or experience to provide technical guidance in the development and implementation of the provisions of the Chemical Hygiene Plan. This definition is not intended to place limitations on the position description or job classification that the designated individual shall hold within the employer's organizational structure.

Chemical Hygiene Plan means a written program developed and implemented by the employer that sets forth procedures, equipment, personal protective equipment and work practices that are capable of protecting employees from the health hazards presented by hazardous chemicals used in that particular workplace.

Combustible liquid means any liquid having a flashpoint at or above 100 degrees Fahrenheit (37.8 degrees Celsius), but below 200 degrees Fahrenheit (93.3 degrees Celsius), except any mixture having components with flashpoints of 200 degrees Fahrenheit (93.3 degrees Celsius), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

Compressed gas means:

- A. a gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi (2.8 kg/cc) at 70 degrees Fahrenheit (21.1 degrees Celsius); or
- B. a gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi (7.3 kg/cc) at 130 degrees Fahrenheit (54.4 degrees Celsius) regardless of the pressure at 70 degrees Fahrenheit (21.1 degrees Celsius); or
- C. a liquid having a vapor pressure exceeding 40 psi (2.8 kg/cc) at 100 degrees Fahrenheit (37.8 degrees Celsius) as determined by ASTM 0-323-72.

Designated area means an area that may be used for work with "select carcinogens", reproductive toxins or substances that have a high degree of acute toxicity. A designated area may be the entire laboratory, an area of a laboratory, or a device such as a laboratory hood.

Emergency means any occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment that results in an uncontrolled release of a hazardous chemical into the workplace.

Employee means an individual employed in a laboratory workplace who may be exposed to hazardous chemicals in the course of his or her assignments.

Explosive means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Flammable means a chemical that falls into one of the following categories:

- A. **Aerosol, flammable** means an aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame protection exceeding 18 inches (45.7 cm) at full valve opening or a flashback (a flame extending back to the valve) at any degree of valve opening.
- B. **Gas, flammable** means:
 - 1. a gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or
 - 2. a gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit.
- C. **Liquid, flammable** means any liquid having a flashpoint below 100 degrees Fahrenheit (37.8 degrees Celsius), except any mixture having components with flashpoints of 100 Fahrenheit (37.8 degrees Celsius) or higher, the total of which make up 99 percent or more of the total volume of the mixture.
- D. **Solid, flammable** means a solid, other than a blasting agent or explosive as defined in § 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or that can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

Flashpoint means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite.

Hazardous chemical means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals that are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents that act on the hematopoietic systems, and agents that damage the lungs, skin, eyes, or mucous membranes. Appendixes A and B of the Hazard Communication Standard (29 CFR 1910.1200) provide further guidance in defining the scope of health hazards and determining whether a chemical is to be considered hazardous for purposes of this standard.

Laboratory means a facility where the "laboratory use of hazardous chemicals" occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis.

Laboratory scale means work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person. "Laboratory scale" excludes those workplaces whose function is to produce commercial quantities of materials.

Laboratory-type hood means a device located in a laboratory; enclosure on five sides with a movable sash or fixed partial enclosed on the remaining side; constructed and maintained to draw air from the laboratory and to prevent or minimize the escape of air contaminants into the laboratory, and allows chemical manipulations to be conducted in the enclosure without insertion of any portion of the employee's body other than hands and arms.

Laboratory use of hazardous chemicals means handling or use of such chemicals in which all the following conditions are met:

- A. Chemical manipulations are carried out on a "laboratory scale."
- B. Multiple chemical procedures or chemicals are used.
- C. The procedures involved are not part of a production process nor in any way simulate a production process.
- D. "Protective laboratory practices and equipment" are available and in common use to minimize the potential for employee exposure to hazardous chemicals.

Medical consultation means a consultation that takes place between an employee and a licensed physician for the purpose of determining what medical examinations or procedures, if any, are appropriate in cases where a significant exposure to a hazardous chemical may have taken place.

Organic peroxide means an organic compound that contains the bivalent -O-O- structure and that may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Oxidizer means a chemical other than a blasting agent or explosive as defined in § 1910.1 09(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

Physical hazard means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer pyrophoric, unstable (reactive), or water-reactive.

Protective laboratory practices and equipment means those laboratory procedures, practices and equipment accepted by laboratory health and safety experts as effective, or that the employer can show to be effective, in minimizing the potential for employee exposure to hazardous chemicals.

Reproductive toxin means chemicals that affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).

Unstable (reactive) means a chemical that is the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure, or temperature.

Water-reactive means a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

Appendix B

Chemicals Purchased from Local Community Suppliers

The chemicals listed below may be purchased from local community suppliers such as grocery stores. All other chemicals are to be purchased from commercial chemical suppliers.

Antacids	Iron
Aluminum	Liquid bluing
Aluminum foil	Laundry detergent
Ammonia	Nail polish remover
Aspirin	Pancake syrup
Baking soda	Plastic wrap
Baking powder	Rock salt
Batteries	Rubbing alcohol
Borax	Salt- NaCl
Bleach	Shampoo/ conditioner
Chalk- for lab experiments	Silicon sealant
Corn syrup	Steel
Copper	Sugar (sucrose)
Corn starch	Tea bags
Dish detergent	Tie-dye dyes
Epsom salt	Tylenol
Flour	Vegetable oil, corn oil, etc.
Food coloring	Vinegar
Food Items	Windex
Gelatin	Woolite
Hydrogen peroxide 2 %	Zinc
Honey	

Procedure for Adding Chemicals to the List of Chemicals That May Be Purchased from Local Community Suppliers

The Department Chair and/or Chemical Hygiene Officer may give a temporary approval for the purchase of a chemical not listed in Appendix A, Chemicals Purchased from Local Community Suppliers for the current school year.

1. The Chemical Hygiene Officer will notify the Department Chair of this temporary approval.
2. At the beginning of each school year, the Department Chair and Chemical Hygiene Officer will meet and review all chemicals that have received temporary approval during the previous school year and decide whether to add the chemicals to list of chemicals in Appendix A.

Appendix C

Schaghticoke Middle School

Science Safety Acknowledgement

In any school science laboratory potential hazards exist. In order to ensure that science experiments are safe and positive learning experiences, students and their parents should read, discuss, and sign the science safety rules and procedures agreement. No student will be permitted to participate in laboratory work until the acknowledgement is signed by a parent and student and returned to the teacher.

1. Act in a responsible manner at all times. Misconduct that endangers any student will not be tolerated.
2. Never work without adult supervision. Do not handle any materials until instructed by the teacher to do so.
3. Perform the experiments as directed. Do not do anything that is not part of an approved experimental procedure. Follow both written and oral instructions, as given by the teacher. If you do not understand a procedure or piece of equipment, ask the teacher.
4. Eating, chewing gum or drinking in the lab or experimental work area is forbidden.
5. Do not enter science prep rooms or storage areas unless under teacher supervision.
6. Wear goggles or ANSI approved eye protection when using glassware, chemicals, or other hazards.
7. Wear appropriate protective equipment.
8. Closed toe shoes must be worn at all times; never go barefoot in the lab. Special care should be taken with floppy clothing. Tie back long hair to keep it away from flames and chemicals.
9. Learn the locations and operation of emergency equipment including eyewash fountains, safety showers, fire extinguishers, fire blankets, etc.
10. Report all accidents, injuries, close calls, or unsafe conditions, no matter how simple, to your teacher.
11. Carry sharp objects with tip or sharp edge pointing downwards. Do not try to catch falling sharp objects. Follow specific lab instructions regarding sharp objects.
12. Use caution when heating materials in the lab. Keep hands and face away from the mouth of a test tube or beaker being heated. De-energize all heat sources when you are finished – never leave an active heat source unattended.
13. Keep hands away from face, eyes, and mouth while using chemicals or preserved specimens.
14. Never taste a chemical. Never pipette by mouth – always use a pipette bulb.
15. Check odors **only** if instructed to do so by gently wafting some of the vapor toward your nose with your hand.
16. Never take chemicals, supplies, or equipment out of the laboratory without the knowledge and consent of the science teacher.
17. Clean your lab area; put away all equipment and reagents; never return unused chemicals to their original containers.
18. Report any damaged glassware or equipment to your teacher
19. Wash your hands before and after each work session.

Your science teacher may add additional safety instructions to the back of this form.

**Schaghticoke Middle School
Science Safety Acknowledgement**

I, _____, have read, understand, and agree to follow these
Please Print Last Name First Name
science safety rules and procedures. I agree to abide by any additional instructions, written or
verbal, provided by my science teacher or adult supervisor.

Student Signature

Date

Parent Signature

Date

List any allergies or medical problems of which your teacher should be aware, including
contact lenses.

Appendix D

Schaghticoke Middle School Science Department Chemical Use

No chemicals should be purchased or used in science laboratory exercises unless they:

- (a) support the science curricula, which are based upon national and state science standards, and
- (b) are published in an appropriate laboratory manual with complete instructions.

Chemicals are to be purchased from commercial chemical suppliers. **Under no circumstances** are chemicals to be accepted as gifts or otherwise acquired from private individuals, manufacturing companies, government agencies, etc without permission from the safety officer and the Science Department Chair. The teacher should be familiar with any exercise involving chemicals and follow safety procedures for use and storage of those chemicals.

The quantity of chemicals stored should not be excessive. Quantities should be limited to amounts no greater than what will be consumed over two academic years.

When choosing chemicals for use in a middle school science program, the teacher has the responsibility to know the character of each chemical or compound by reviewing and applying Material Safety Data Sheet information. An attempt should be made to avoid chemicals which are considered hazardous.

The following list represents common chemicals that may be found in middle school science labs or storerooms and should be removed due to their hazardous nature. Remember that any chemical can be considered hazardous if not used appropriately. Again, consult the MSDS for additional information.

- Ammonium dichromate – $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ (toxic byproducts)
- Benzene (carcinogen)
- Calcium carbide – CaC_2 (explosion hazard)
- Carbon tetrachloride – CCl_4 (carcinogen)
- Chloroform (carcinogen) CHCl_3
- Concentrated inorganic/mineral acids such as:
 - hydrochloric acid – HCl
 - nitric acid – HNO_3
 - sulfuric acid – H_2SO_4 (corrosive, serious burn and eye hazard)
- Copper sulfate (toxic)
- Diethyl ether (forms explosive peroxides)
- Dry ice – carbon dioxide (frostbite and blisters)
- Elemental mercury – Hg (highly toxic)
- Elemental potassium – K (forms explosive oxides)
- Elemental sodium – Na (dangerous reactions with water)
- Formaldehyde – HCHO (carcinogen)
- Hydrogen sulfide – H_2S (toxic vapors)
- Iodine – I_2 (respiratory irritant)
- Lead compounds such as:
 - lead chloride – PbCl_2 ,
 - lead nitrate – $\text{Pb}(\text{NO}_3)_2$ (one or more are potential carcinogens, toxic)
- Magnesium strips – Mg (burn hazard)
- Mercury salts such as mercuric sulfate – HgSO_4 (toxic)
- Methanol or methyl alcohol – CH_3OH (toxic)
- Mineral talc – $\text{Mg}_3\text{Si}_4\text{O}_{10}$ (can cause asbestosis)
- Picric acid – 2, 4, 6-trinitrophenol (explosive crystals)
- Potassium chlorate – KClO_3 (can cause violent reactions)
- Silver cyanide – AgCN (toxic)
- Sodium Hydroxide – NaOH (caustic)
- Vinyl Chloride – $\text{CH}_2=\text{CHCl}$ (carcinogen)
- White phosphorous – P (fire hazard)

The following list of chemicals was prepared using data from the Commonwealth of Virginia Department of Education, the Council of State Science Supervisors, and the Flinn Chemical Catalog/Reference Manual. Evaluation of these chemicals involved reactivity, toxicity, carcinogenic potential, explosiveness, and flammability. This brief list should be compared to the chemical inventory. Those chemicals preceded by an asterisk (*) should not be purchased, used, or stored. The other chemicals listed have limited application in the middle school classroom.

Purchase, use, and storage of any of the chemicals listed in Appendix D require the express permission of the Department Chair and Chemical Hygiene Officer. The MSDS should be read before using these or any other chemicals. The Flinn Chemical Catalog/Reference Manual is a good source of information on potential hazards.

Hazards indicated: C = positive or suspected carcinogen
T = moderately to extremely toxic
R = highly reactive and/or corrosive
F or E = potentially flammable or explosive

This list is subject to periodic review and updating. Inquiries on the status of any chemical may be directed to the Science Department Chair and/or Chemical Hygiene Officer.

Acetamide – C
Acetic acid (glacial) – T, F, R
Acetic acid – R
*Acetic anhydride – F, R, T
Acetone – F, T
Acetyl chloride – F
Acrylonitrile – C
dl-Adrenalin – T
*Aluminum chloride (anhydrous) – R, T
*Ammonium bichromate – T, E, F
Ammonium chromate – T
Ammonium dichromate – T, E, F
Ammonium hydroxide (14M) – T
Ammonium hydroxide (6M) – T
Ammonium nitrate (crystals) – T, E
Ammonium vanadate (ammonium metavanadate) – T
*Aniline – T, C
*Aniline hydrochloride – T
*Anthracene – C
Antimony – T
Antimony oxide – T
Antimony pentachloride – R
Antimony trichloride – T
*Arsenic – T
*Arsenic chloride – T

*Arsenic pentoxide – T
*Arsenic trioxide – C, T
*Asbestos – C
*Arcarite – C
*Barium chloride (crystals) T
Barium oxalate – T
Barium peroxide – T, F (high school only, demo supply)
*Benzene – C, T, F
*Benzidine – T
*Benzoin – C, T
Benzoyl chloride – T, R
*Benzoyl peroxide – T, E, R
*Beryllium carbonate – T
Biuret solution – R
*Bromine – T, F
*Bromine water – T (high school only & fresh supply only)
*Cadmium – C, T
All Cadmium compounds – T
Cadmium bromide – T
Cadmium carbonate – T
*Cadmium chloride – C
Cadmium nitrate – C, T, F
Cadmium sulfate – C, T
*Calcium carbide – F

*Calcium cyanide – T	Hydrogen sulfide – T
Calcium hypochlorite – T	Hydroquinone – T
Calcium nitrate (crystals) – F	Iodine crystals – T, R (High School Only, Demo Supply)
Calcium oxide – R, F	Isobutyl alcohol – F, T
*Carbon disulfide – F, E	Isopentyl alcohol – F, T
*Carbon tetrachloride – T	*Isopropyl alcohol (above 70% - F, T
*Catechol (pyrocatechol) – T	Isopropyl alcohol – F
*Chlorine, chlorine water – T (High School Only & fresh supply only)	Lactic acid – R
*Chloral hydrate – T	All Lead compounds – T
*Chloretone (chlorobutanol) – T	*Lead acetate (flakes) – T, C
*Chloroform – C, T	*Lead arsenate – C, T
Chlorpromazine – T	Lithium – F, R (max. qty. – 1 yr. demo supply)
*Chromium – C, T	Lithium nitrate crystals – E, R (max. qty. – 1 yr. demo supply)
*Chromium (powder) – C	Magnesium – F
*Chromium oxide – C	Magnesium chlorate – T
Chromium potassium sulfate – T	Magnesium perchlorate – R
*Chromium trioxide (chromic acid) – C, T	*Mercury (and all compounds) – T
Cobalt – T	Methyl alcohol – F, T
Cobalt chloride – T	Methyl ethyl ketone – F
*Colchicine – C, T	Methyl iodide – C
Cyclohexane – F, T (for high school only)	Methyl methacrylate – T, F
*Cyclohexene – F, T, E	*Millon's reagent solution – T
*Cyclohexanol – F, T	Nickel(ous) Ammonium sulfate crystals – T
Dichlorobenzene – T	Nickel carbonate – C
*Dimethylaniline – T	Nickel(ous) chloride – T, C
*Dichloroethane (ethylene dichloride) – C	Nickel(ous) nitrate – T, C
*2,4-Dinitrophenol – T, E	Nickel oxide – C
*Diisopropyl ether – E	Nickel(ous) sulfate – T, C
Dioxane – C	Nicotine – T
Ethyl alcohol – F, T	Nitric acid – R
*Ethylene dichloride (Dichloroethane – C, F, T	Osmium tetroxide – T
Ethylene oxide – T, F	Oxygen tanks – F
Ether (ethyl ether) – F, E	Para-dichlorobenzene (1, 4 Dichlorobenzene) – T
Ferrous sulfate – T	*Paris green – T
*Formaldehyde (37% solution) – T, C	Pentane – F
Formalin (10% formaldehyde) – T	*Perchloric acid – R, E
*Formic acid – R	Perchloroethylene – C, T
*Gasoline – F, E	*Petroleum ether – F
*Gunpowder – E	*Phenol (Crystals or 88% solution) – C, T
*Hexachlorophene – T	1-Phenyl-2-Thiourea – T
*Hydrobromic acid – T	Phenylthiocarbamide powder – T
Hydrochloric acid – R	*Phosphorous, red or white – F
*Hydrofluoric acid – T	*Phosphorous pentoxide – F, R
Hydrogen gas – F	*Picric acid
Hydrogen peroxide (over 6% for high school only) – T, R	

Potassium metal – E, R (max. qty. – 1 yr. demo supply)

*Potassium cyanide – T

*Potassium chlorate – T, E

Potassium chromate – C, T

Potassium dichromate – R, T, C

Potassium ferricyanide – T

Potassium ferrocyanide – T

Potassium hydroxide (solid) – T, R

Potassium nitrate – F, E

Potassium nitrite (crystals) – F, E

Potassium periodate – R

Potassium permanganate – T, F

*Potassium sulfide – F, T

Propionic acid – F

n-Propyl alcohol – F

Pyridine – T, E

Pyrogallol (Pyrogalllic acid) – T

Sebacoyl chloride/hexane soln. – F

Silver acetate – T

*Silver cyanide – T

Silver nitrate – T, R

Soda lime – R

Sodium metal – F, R (max. qty. – 1 yr. demo supply)

*Sodium arsenate – T, C

*Sodium arsenite – T, C

*Sodium azide – T, E

Sodium chlorate – F

Sodium chromate – T, C

*Sodium cyanide – T

Sodium dichromate – T, C

Sodium fluoride – T

Sodium hydroxide solutions – R

Sodium hydroxide – R

Sodium nitrate – R, E, T

Sodium nitrate (granular) – T, F, E (for AP chemistry only)

Sodium nitrite – C, T, E

*Sodium peroxide – E

Sodium sulfide – T, F

Sodium thiocyanate – T

Stannic chloride – R, T

*Strontium – F

Strontium nitrate – F

Sudan IV – C

*Sulfuric acid (fuming) – T, R

Sulfuric acid – R, T

Tannic acid – C, T

Tetrabromoethane – T

Thioacetamide – C, T

Thiourea (thiocarbamide) – C

*Toluene – T, F

Toluidine – C

Trichloroethylene – C, T

Uranyl acetate – C

Uranyl nitrate – C, F, E

Urethane – C

Vinylite – C

Winkler's solution #2 – R

Wood's metal – T

Xylene – F, T

Zinc nitrate (flakes) – T, F

Appendix E

Science Department Chemical Storage Inspection Checklist

This checklist describes the conditions for a science chemical storage area to be in compliance with the Chemical Hygiene Plan for Schaghticoke Middle School Science Department. Copies of this report and documentation of necessary corrective actions taken are to be kept by the Chemical Hygiene Officer of the school and the Science Department Chair.

School _____ Storage Location _____

Inspection by _____ Date _____

Signature of Chemical Hygiene Officer _____

Date _____

Conditions within storage area: S = Satisfactory, C = Corrective action needed

1. All chemicals are clearly labeled with all appropriate information. _____
2. Chemicals are stored on secure shelving. _____
3. Chemicals are spaced to allow safe storage and removal of chemicals. _____
4. Stored quantities of hazardous chemicals do not exceed a two-year supply. _____
5. The chemicals stored are only those required for science instruction. _____
6. Labeled cabinets are used for storage of flammables and contact hazards. _____
7. Storage area is free of defective containers. _____
8. Hazardous chemicals are not stored above eye level. _____
9. Locked doors secure access to the chemical storage area. _____
10. A fire extinguisher is located in the chemical storage area. _____
11. Materials are available for spill control and cleanup. _____
12. Floor area is free from clutter and provides easy exit from storage room. _____
13. None of the following are stored:
 - a. Gasoline _____
 - b. Mercury or mercury compounds _____
 - c. Benzoyl peroxide _____
 - d. Carbon disulfide _____
 - e. Ether _____
 - f. Picric acid _____
 - g. Perchloric acid _____
 - h. Arsenic powder, pentoxide, trichloride, or trioxide _____
 - i. Asbestos _____

- j. Benzene or benzidine _____
- k. Chromium powder or chromium (IV) oxide _____
- l. Lead arsenate _____
- m. Sodium arsenate or sodium arsenite _____

14. MSDS sheets are available in a clearly marked location. _____

15. Metal and glass containers of flammables are limited to one gallon in size. _____

16. Glass bottles are limited to one gallon for any of the following chemicals:
acetone, amyl alcohol, methyl ethyl ketone, cyclohexane, ethanol, methanol. _____

17. Chemical storage area and laboratory has adequate ventilation. _____

18. Operation of fume hood is adequate; 60 to 100 linear feet per minute is
recommended _____

Remarks: If more room is needed, please attach additional documents.

Appendix F

Chemical Hygiene Plan Checklist

This Chemical Hygiene Plan checklist is for use in Schaghticoke Middle School Science Department for annual inspections of science facilities, to ensure effectiveness and compliance with OSHA Standard 29 CFR 1910.1450, Occupational Exposure to Hazardous Chemicals in Laboratories. Copies are to be kept by the Chemical Hygiene Officer of the school and the Science Department Chair.

Inspection by _____

Title: _____

Reviewed by: _____

Date: _____

Item #	Compliance: ✓ indicates compliance with OSHA Standard
--------	---

- _____ 1. Laboratory use of hazardous chemicals complies with OSHA Standard.
- _____ 2. Work is performed on laboratory scale.
- _____ 3. Employees are not exposed to substances requiring monitoring as defined by the OSHA Standard.
- _____ 4. There is a written Chemical Hygiene Plan as defined by OSHA Standard.
- _____ 5. The Chemical Hygiene Plan is capable of protecting employees from health hazards associated with chemicals in the laboratory.
- _____ 6. The Chemical Hygiene Plan is readily available to employees, employee representatives, and evaluators.
- _____ 7. The Chemical Hygiene Plan indicates specific measures to ensure employee protection in the laboratory including the following:
 - _____ a. Standard operating procedures relevant to safety and health to be used when working with hazardous chemicals are addressed.
 - _____ b. Circumstances that require prior approval are addressed.
 - _____ c. There is documentation of employee information and training at the time of employment and/or new assignment.
 - _____ d. Employees are given access to a copy of the Chemical Hygiene Plan.
 - _____ e. The Chemical Hygiene Plan is reviewed in detail with employees at least annually and any new provisions are explained.
- _____ 8. Only chemical processes that do not require use of respirators are used.

- _____ 9. Employees are provided the opportunity to receive medical attention under the circumstances defined in the Standard.
- _____ 10. Chemicals of unknown composition are assumed hazardous and covered in the Chemical Hygiene Plan.
- _____ 11. Labels on incoming containers of hazardous chemicals are not removed or defaced.
- _____ 12. Chemical Hygiene Plan indicates particularly hazardous chemicals not allowed for laboratory use or storage.
- _____ 13. Procedures for removal of unwanted or hazardous chemicals are explained.
- _____ 14. The Chemical Hygiene Plan is reviewed and updated at least annually

Recommended Actions: Please attach additional documents.

New Milford Public Schools K-8 Education Technology Scope and Sequence

Introduction

The New Milford Education K-8 Technology Scope and Sequence outlines concepts, skills, and processes using technology hardware and software that students will develop K-8. It complements the New Milford Public Schools' K-8 Education Technology Competencies (2010). It also aligns with the conceptual topics derived from the National Educational Technology Standards (NETS) and Performance Indicators for Students. This document will promote the six Enduring Understandings listed in the New Milford Public Schools K-8 Education Technology Competencies (2010).

A scope and sequence was determined to be the most effective format for presenting targeted technology objectives because most technology instruction will be presented to students through the content areas. In the coming years, teachers will be folding technology concepts, skills, and processes into units of content curriculum, and students will learn and practice using technology as part of a project or activity in literacy, mathematics, science, or social studies.

For example, in third grade students will develop advanced keyboarding skills to increase proficiency and efficiency as they begin to use word processing to type various works written in the classroom. During the beginning and a good part of third grade, our main focus is on keyboarding skills. By the time students are in third grade, they have already learned letter/number location and recognition on the keyboard. We progress into using both hands properly, correct posture, and increasing their words per minute.

In seventh and eighth grade, students use Microsoft Word and Excel for science. They do labs in the classroom and then create data tables and charts in Excel and add them to detailed lab reports written in Word. Over time, the scope and sequence can be easily adjusted to reflect changes in hardware, software, and student competencies.

Technology objectives are targeted in the following areas:

- Technology Operations and Concepts
- Digital Citizenship
- Creativity and Innovation
- Communication and Collaboration
- Research and Information Fluency
- Critical Thinking, Problem Solving, and Decision Making

The guide for implementing each objective is expressed in three stages:

Exposure: At this level, teachers model the use of targeted concepts, skills, and processes for students.

Practice: At this level, students begin and continue to practice the use of targeted concepts, skills, and processes.

Independence: Students are able to employ the targeted concepts, skills, and processes independently.

There is overlap in these three stages throughout the scope and sequence to accommodate expected variety in students' readiness for and ability to perform targeted outcomes.

New Milford Public Schools

Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Technology Operations and Concepts	K	1	2	3	4	5	6	7	8
Computer Operations									
Students use correct posture and position at computer.									
Students use developmentally appropriate terminology to communicate about technology.	E	EP	P	P	PI	I	I	I	I
Students identify computer hardware components and peripheral devices.	E	EP	P	P	PI	I	I	I	I
Students start, restart, and correctly shut down the computer.	E	EP	PI	I	I	I	I	I	I
Students identify the parts of a computer: monitor, keyboard, mouse, CPU, speakers, and control buttons.	E	EP	P	PI	I	I	I	I	I
Students use the mouse to choose options in a menu.	E	EP	P	PI	I	I	I	I	I
Students click, double click, and click/drag the mouse.	E	P	I	I	I	I	I	I	I
Students insert, eject, and properly care for a CDROM.		E	EP	PI	I	I	I	I	I
Students identify correct software application icon for a task.		E	EP	PI	I	I	I	I	I
Students save files and folders to different disks and drives.		E	EP	PI	I	I	I	I	I
Students create and organize folders in multiple ways.					E	EP	PI	I	I
Students use search operation for folders and files.						E	EP	PI	I
Students change control panel and set options.						E	EP	PI	I
Students create shortcuts on desktop.						E	EP	PI	I
Students check for computer viruses and know how to prevent them.				E	E	EP	PI	I	I
Students recognize common file extensions (doc, jpg, bmp, xls, exe).				E	E	EP	PI	I	I
Students understand and use memory size.				E	E	EP	PI	I	I
Students understand the use of digital cameras, scanner, LCD projector, and fax machine.		E	E	EP	EP	PI	I	I	I

New Milford Public Schools

Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Technology Operations and Concepts (continued)	K	1	2	3	4	5	6	7	8
Students use content specific hardware such as graphing calculators, scientific probes, and PDAs.					E	EP	PI	PI	I
Students use content specific tools and software (science probes, calculators, simulation, etc.) to support learning and research.					E	EP	EP	PI	PI
Students solve routine technical problems using online help and troubleshooting strategies.			E	E	EP	PI	PI	I	I
Students identify and use various drives.			E	E	EP	PI	PI	I	I
Keyboarding									
Students use developmentally appropriate keyboarding techniques.	E	E	EP	PI	PI	PI	I	I	I
Students use a keyboarding program to type the home row keys using correct form.		E	EP	PI	PI	PI	I	I	I
Students use the keyboard to type capitals and lowercase letters, numbers, and symbols.	E	EP	PI	I	I	I	I	I	I
Students use punctuation keys.	E	EP	PI	I	I	I	I	I	I
Students use the enter, space bar, and backspace keys.	E	EP	PI	I	I	I	I	I	I
Students use arrow, tab, shift, and caps lock keys.	E	E	EP	PI	I	I	I	I	I
Students type words.	E	EP	PI	I	I	I	I	I	I
Students type phrases.	E	EP	PI	I	I	I	I	I	I
Students type sentences.	E	E	EP	PI	I	I	I	I	I
Program Operations									
Students recognize program and document icons.	E	E	EP	PI	PI	I	I	I	I
Students select appropriate program/resource to complete a task.		E	EP	EP	PI	PI	PI	I	I
Students open and exit programs correctly.	E	EP	PI	PI	I	I	I	I	I
Students click on icon, folder, or document to open or start a program.	E	EP	PI	PI	I	I	I	I	I

New Milford Public Schools

Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Technology Operations and Concepts (continued)	K	1	2	3	4	5	6	7	8
Students use "Save" and "Save As" appropriately to save documents or to create new versions of a document.	E	EP	PI	PI	I	I	I	I	I
Students create, name, and save new files.	E	E	EP	PI	PI	I	I	I	I
Students open, close, add, and delete files.	E	E	EP	PI	PI	I	I	I	I
Students rename a file.	E	E	EP	PI	PI	I	I	I	I
Students create a new folder and move files to that folder.		E	EP	PI	PI	I	I	I	I
Students view file Properties to determine memory size.				E	EP	PI	I	I	I
Students use a virus scanner to protect and maintain their files.				E	EP	PI	I	I	I
Students use Page Setup and Print Preview.			E	E	EP	PI	I	I	I
Students print a document.	E	EP	PI	I	I	I	I	I	I
Students open, close, minimize, and resize a window.			E	E	EP	PI	I	I	I
Students move between two or more open programs (windows).			E	E	EP	PI	I	I	I
Students use the spell checker, dictionary, and thesaurus.			E	EP	EP	PI	I	I	I
Students set preferences and options in different software programs.				E	EP	PI	I	I	I
Students use content specific software such as spreadsheets, databases, and concept mapping software.		E	EP	PI	I	I	I	I	I
Network Operations									
Students log on and off the NMPS network correctly.	E	EP	PI	PI	I	I	I	I	I
Students use personal password to log into network account.		E	EP	PI	PI	I	I	I	I
Students save files in a group folder on NMPS network.		E	EP	PI	PI	I	I	I	I
Students manage their own files (move, copy, delete) on network.			E	EP	EP	PI	PI	I	I
Students use a web browser, buttons, and hypertext links.				E	EP	PI	PI	I	I

New Milford Public Schools
Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Technology Operations and Concepts (continued)	K	1	2	3	4	5	6	7	8
Network Operations (continued)									
Students use a favorites or bookmarked list to access web sites.		E	EP	PI	PI	I	I	I	I
Students effectively use a variety of search engines, online databases, and search techniques.			E	E	EP	EPI	EPI	I	I
Students evaluate accuracy and quality of online information.			E	E	EP	EP	PI	PI	I
Students use correct bibliographic citation for Internet resources.				E	EP	EP	PI	PI	I

New Milford Public Schools

Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Digital Citizenship	K	1	2	3	4	5	6	7	8
Students describe and exhibit responsible and appropriate use of computers, disks, and peripherals.	E	EP	PI	PI	I	I	I	I	I
Students explain and practice the rules of DPS policies related to Internet and computer use.	E	E	EP	PI	PI	I	I	I	I
Students show respect for the work of others.	E	EP	PI	PI	I	I	I	I	I
Students explain and respect copyright law.		E	EP	PI	PI	PI	I	I	I
Students identify ethical and unethical uses of computers, networks, and other technologies.				E	EP	PI	PI	PI	I
Students demonstrate an understanding of plagiarism and its consequences.	E	E	EP	PI	PI	PI	I	I	I
Students explain Internet safety guidelines.	E	E	EP	PI	PI	PI	I	I	I
Students responsibly use their network password privilege.		E	EP	PI	PI	PI	I	I	I
Students use email appropriately.			E	E	EP	PI	PI	I	I
Students are respectful of school computer and network privacy.			E	E	EP	PI	PI	I	I
Students explain how hacking, filtering, information technology, business practices, government controls, access to technology, and privacy issues affect them and the world in general.					E	E	EP	EP	P

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Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Creativity and Innovation	K	1	2	3	4	5	6	7	8
Students identify the functions and advantages of computer productivity software.		E	E	E	EP	PI	PI	I	I
Word Processing – Max Write, Word									
Students use toolbar icons: new, open, close, save, print.	E	EP	PI	PI	I	I	I	I	I
Students use toolbar icons: undo, copy, cut, paste.	E	EP	EPI	PI	PI	I	I	I	I
Students use toolbar icons to change font.	E	EP	EP	PI	PI	I	I	I	I
Students use dropdown menus to operate a word processing program.									
Students file: new, open, close, save, print.	E	EP	PI	PI	PI	I	I	I	I
Students file: save as, page setup, print preview, send to.		E	EP	EP	EP	PI	PI	I	I
Students file: save as web page, web page preview, properties.			E	E	EP	EP	PI	PI	I
Students edit: undo, cut, copy, paste, select all, clear.		E	EP	EP	PI	PI	I	I	I
Students edit: find, replace, go to, paste as.		E	E	EP	PI	I	I	I	I
Students view: normal, print layout, toolbars.		E	E	EP	EP	PI	PI	I	I
Students view: header/footer, zoom, full screen.		E	E	EP	EP	PI	PI	I	I
Students insert: page number, date, picture.		E	EP	EP	PI	PI	I	I	I
Students insert: text box, hyperlink.		E	EP	EP	EP	PI	PI	I	I
Students format: font, paragraph.		E	EP	EP	PI	PI	I	I	I
Students format: columns, tabs, border/shading, bullets, numbering.		E	EP	EP	PI	PI	PI	I	I
Students use tools: spell check.		E	EP	EP	I	I	I	I	I
Students use table: insert, delete, add rows, add columns.			E	EP	PI	I	I	I	I
Students use table: select, split cells, autoformat, autofit, hide gridlines.				E	EP	EP	EP	PI	PI

Creativity and Innovation (continued)	K	1	2	3	4	5	6	7	8
Students use help features.	E	E	EP	EP	PI	PI	I	I	I
Students use icons of paint in Max Write to draw pictures.	E	EP	EP	PI	I	I	I	I	I
Students use features of standard and formatting toolbars.		E	EP	EP	PI	PI	I	I	I
Students use features of draw and SMART toolbars.	E	E	EP	EP	PI	PI	I	I	I
Students insert, move, and resize a graphic in a document.		E	EP	EP	EP	PI	PI	I	I
Slide Presentation – Max Show, Powerpoint									
Students use toolbar icons to create a simple slide presentation.	E	E	EP	EP	PI	PI	I	I	I
Students create a new presentation from scratch or use a design template.		E	EP	EP	EP	PI	PI	I	I
Students format slide layout, color scheme, background, design template.		E	EP	EP	EP	EP	PI	PI	I
Students add action and animation to slide show.		E	EP	EP	EP	PI	PI	I	I
Students add sound, pictures, video to slide show.		E	EP	EP	EP	PI	PI	I	I
Students add text box, slide number, date/time, picture, chart, table to slide show.			E	EP	PI	I	I	I	I
Students individually create a multimedia slide show presentation.				EP	EP	EP	PI	PI	I
Spreadsheet – Max Count, Excel									
Students use toolbar icons to create simple tables and charts.	E	E	EP	EP	PI	PI	I	I	I
Students understand and explain the purpose and use of a spreadsheet.		E	EP	EP	EP	PI	PI	PI	I
Students add, delete, move text and numbers in an existing spreadsheet.		E	EP	EP	EP	PI	PI	I	I
Students add, delete, move text and numbers in a created spreadsheet.		E	EP	EP	EP	EP	PI	PI	I
Students insert cell, row, column, worksheet, chart.			E	EP	EP	EP	PI	PI	I
Students format cell, row, column, sheet.			E	EP	EP	EP	PI	PI	I
Students insert function: sum, average, product.			E	EP	EP	EP	EP	PI	PI

Creativity and Innovation (continued)	K	1	2	3	4	5	6	7	8
Spreadsheet – Max Count, Excel (continued)									
Students insert a spreadsheet or graph into another document.			E	E	EP	EP	EP	PI	PI
Students utilize spreadsheet to analyze data and test hypothesis.			E	EP	EP	EP	PI	PI	PI
Concept Mapping – Kidspiration, Inspiration									
Students create graphic organizers to develop and structure ideas.		E	EP	EP	EP	PI	PI	PI	I
Students use icons to brainstorm and organize ideas and information.		E	EP	EP	EP	PI	PI	PI	I
Students use graphics, symbols, and text to represent ideas and information.		E	EP	EP	EP	PI	PI	I	I
Students link ideas and information to show relationships.		E	EP	EP	EP	EP	PI	PI	PI
Students use paint feature of Kidspiration to create representations of ideas.	E	E	EP	EP	PI	PI			
Students create an outline/diagram of a topic for prewriting.		E	EP	EP	PI	PI	I	I	I
Students create an outline/diagram for a report or presentation.		E	E	EP	EP	PI	PI	I	I
Database – Access									
Students explain the purpose of a database and show how it works.			E	E	EP	EP	EP	PI	PI
Students add, delete, and move text in an existing database template.			E	EP	EP	EP	PI	PI	PI
Students create and sort data on a simple database.			E	E	EP	EP	EP	PI	PI
Students add, delete, and move text in a designed database.			E	E	EP	EP	EP	PI	PI
Students use find, sort, show, and hide functions.			E	E	EP	EP	EP	PI	PI
Students use a database to look for relationships and test hypotheses.			E	E	E	EP	EP	EP	PI
Students design, create, and test the effectiveness of a database.				E	E	EP	EP	EP	PI

Creativity and Innovation (continued)	K	1	2	3	4	5	6	7	8
Internet									
Students enter an Internet address (URL) to access a website.			E	E	EP	EP	PI	PI	PI
Students access websites bookmarked by teacher.		E	EP	EP	PI	PI	I	I	I
Students bookmark websites.			E	E	EP	EP	PI	PI	I
Students create simple web pages using a web page design/editing program.			E	E	EP	EP	PI	PI	I
Students create hypertext links and insert graphics into simple web pages.			E	E	EP	EP	PI	PI	I
Students collaborate to create class web pages or online class projects.			E	E	EP	EP	PI	PI	I
Students open and send email messages.				E	E	EP	EP	PI	PI
Students use email to communicate with experts and to collaborate with peers.				E	E	EP	EP	PI	PI
Students send email to groups.				E	E	EP	EP	PI	PI
Students open and send email attachments.				E	E	EP	EP	PI	PI
Students use interactive real time filtered online communication (CHAT) to collaborate with peers.				E	E	EP	EP	PI	PI
Students participate in video conferencing to communicate and to collaborate with peers.				E	E	EP	EP	PI	PI
Multimedia Program									
Students create a linear multimedia slide show containing text and graphics.				E	E	EP	EP	PI	PI
Students modify the color scheme in their multimedia product.				E	E	EP	EP	PI	PI
Students insert graphs and charts into their multimedia product.				E	E	EP	EP	PI	PI
Students use transitions and create simple animations in a multimedia program.				E	E	EP	EP	PI	PI
Students add sounds to a multimedia presentation.				E	E	EP	EP	PI	PI
Students use different views (outline, slide sorter, etc.) to create and organize multimedia presentations.				E	E	EP	EP	PI	PI

Creativity and Innovation (continued)	K	1	2	3	4	5	6	7	8
Multimedia Program (continued)									
Students print audience handouts to go with their multimedia product.				E	E	EP	EP	PI	PI
Students collaborate in the creation of a multimedia slide show containing text and graphics.				E	E	EP	EP	PI	PI
Students create a nonlinear (branching) presentation or instructional game.					E	E	EP	EP	PI
Students use graphics and video software to create graphics, edit photos, and create short movies.					E	E	EP	EP	PI
Desktop Publishing Software									
Students collaborate to create a newsletter using Desktop Publishing software.				E	E	EP	EP	PI	PI
Students create a newsletter, brochure, or booklet using Desktop Publishing software.				E	E	EP	EP	PI	PI
Students use the principles and elements of visual design (line, balance, contrast, variety, center of interest) in the creation of Desktop Publishing products.				E	E	EP	EP	PI	PI
Students use columns, text boxes, headlines, and graphics in their Desktop Publishing product.				E	E	EP	EP	PI	PI
Students collaborate to create a tri-fold brochure using Desktop Publishing software.				E	E	EP	EP	PI	PI
Students use color, graphics, fonts, and white space effectively.				E	E	EP	EP	PI	PI
Students create a greeting card, label, sticker, bookplate, or simple sign using Desktop Publishing software.		E	E	EP	EP	PI	PI	I	I
Students use Desktop Publishing software to create brochures with graphics, letterhead, resumes, and business cards.				E	E	EP	EP	PI	PI

New Milford Public Schools
Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Communication and Collaboration	K	1	2	3	4	5	6	7	8
Students explain the concept and identify the components of e-mail, such as mailboxes, address, and e-mail formatting.			E	E	EP	P	P	I	I
Students explain the concept of distance learning.			E	E	EP	P	P	I	I
Students send and receive messages and ideas using proper structure, format, and syntax in email communication.					E	E	EP	P	I
Students send and receive messages with attachments.				E	E	P	I	I	I
Students transfer information through electronic communication such as facsimile.				E	E	P	I	I	I
Students use information gathered through electronic communication in appropriate curriculum activities (i.e., email, Internet, telephone, fax).			E	E	E	E	E	P	PI
Students participate in discussion groups via email.			E	E	EP	P	P	I	I
Students collaborate in the creation of a multimedia slide show containing text and graphics.				E	E	EP	EP	PI	PI
Students collaborate with peers and others to solve problems and to develop solutions using technology tools and resources.			E	EP	EP	PI	PI	I	I

New Milford Public Schools

Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Research and Information Fluency	K	1	2	3	4	5	6	7	8
Students do a keyword search using an online encyclopedia.		E	EP	EP	P	PI	PI	I	I
Students use search engines.			E	E	EP	EP	PI	PI	I
Students use Boolean search terms (AND, OR, NOT).			E	E	EP	EP	PI	PI	I
Students can search using a keyword, name, title, author, and phrase.		E	EP	EP	P	PI	PI	I	I
Students design a search strategy, narrowing the search parameters as needed.			E	E	EP	EP	PI	PI	I
Students develop and implement a project using online resources.			E	E	EP	EP	PI	PI	I
Students analyze and evaluate the accuracy and credibility of web resources.				E	EP	EP	PI	PI	I
Students create reports using information from an online source and a word processor.				E	EP	EP	PI	PI	I
Students gather information from several online sources and save the text in a word processing document.				E	EP	EP	PI	PI	I
Students use multiple search engines.				E	EP	EP	PI	PI	I
Students use a library database to find information.			E	E	EP	EP	PI	PI	I
Students use the find function in browser to locate specific information on web page.				E	EP	EP	PI	PI	I
Students cite the resources they use.				E	EP	EP	PI	PI	I
Students develop and implement a project using online resources.				E	EP	EP	PI	PI	I
Students sort and filter data.			E	EP	EP	EP	PI	PI	PI

New Milford Public Schools

Education Technology Scope and Sequence

E=Exposure P=Practice I=Independence

Critical Thinking, Problem Solving, and Decision Making	K	1	2	3	4	5	6	7	8
Students collaborate with peers and others to solve problems and to develop solutions using technology tools and resources.			E	EP	EP	PI	PI	I	I
Students use multiple resources, tools, and technologies to solve complex problems and to present solutions.			E	EP	EP	PI	PI	I	I
Students analyze/reflect on collaboration, design, research, problem solving process.			E	E	EP	EP	PI	PI	I
Students create electronic portfolios to demonstrate technology skills and content area knowledge.					E	EP	EP	PI	PI



**New Milford Public Schools K – 8 Education Technology Competencies
Scope & Sequence**

November 2010

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New Milford Public Schools K – 8 Educational Technology Competencies

Introduction

The New Milford Schools believe technology is a tool to be used to create and innovate, communicate and collaborate, conduct research, promote ethical thinking, problem solve, and improve decision-making. As such, we believe students need to understand and practice responsible digital citizenship and master technology operations to a level that helps students embrace the opportunities technology affords them.

The scope and sequence of the document that follows is organized around the conceptual topics derived from the National Educational Technology Standards (NETS) and Performance Indicators for Students. This document will promote the six Enduring Understandings listed below.

The document is organized by concept topics and by grade levels (primary K-3, intermediate 4 -6, and middle school 7 -8). It is the intention that the students will master the major concepts outlined in this document by the conclusion of grade 8, so that those concepts and skills will be successfully utilized by the students in their high school courses.



The major concepts and enduring understandings achieved by this scope and sequence follow:

Concepts

Technology Operations and Concepts

Digital Citizenship

Creativity and Innovation

Communication and Collaboration

Research and Information Fluency

Critical Thinking, Problem Solving, and Decision-Making

Enduring Understandings

- Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.
- Students use digital media and environments to communicate and to work collaboratively, including at a distance, to support individual learning and to contribute to the learning of others.
- Students apply digital tools to gather, evaluate, and use information.
- Students use critical thinking skills to plan and conduct research, to manage projects, to solve problems, and to make informed decisions using appropriate digital tools and resources.
- Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
- Students demonstrate a sound understanding of technology concepts, systems, and operations.



New Milford Public Schools
K – 8 Education Technology Competencies

Technology Standard: Creativity and Innovation

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	<p>Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.</p> <ul style="list-style-type: none"> • Apply existing knowledge to generate new ideas, products, or processes • Create original works as a means of personal or group expression • Use models and simulations to explore complex systems and issues • Identify trends and forecast possibilities 	<p>Students can accurately interpret and create simple visuals (i.e., charts, maps, graphs, and models) and use this information to solve problems and to communicate information.</p> <p>Students articulate thoughts and ideas, representative of real and imaginary experiences, clearly and effectively through oral, written, or multimedia communication.</p> <p>Students engage in discovery, exploration, and experimentation to reach unexpected answers. Students make unusual associations and provide a variety of solutions to problems.</p> <p>Students identify parts of a system and explain how those parts interact with one another.</p> <p>Students understand the defined learning goal and use age-appropriate instructional rubrics and tools to assess their performance in meeting the goal within the timeline established by the teacher.</p>	<p>Students use electronic drawing and paint programs to create graphics. Students participate in a group to locate and create pictures, clip art, graphs, tables, and other appropriate objects to insert into documents and presentations.</p> <p>Students, working in a teacher-led whole group project, use presentation software to illustrate concepts and communicate ideas.</p> <p>Students use input and output devices to successfully operate a computer.</p> <p>Students create developmentally appropriate multi-media products.</p> <p>Students use a variety of technology resources for directed and independent learning.</p> <p>Students identify different purposes among software applications (i.e., puzzles, writing tools, graphing tools, concept mapping tools).</p>	<p>Digital drawing, paint, and photo editing tools</p> <p>Digital cameras</p> <p>Computer OS</p> <p>Word processing software</p> <p>Desktop Publishing</p> <p>Web 2.0 tools</p> <p>Content specific resources for models and simulations (i.e., life cycle of plants and animals)</p> <p>Input/output devices</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students manage negative emotions, align their goals to the goals of others, and work cooperatively and productively with others in small groups.		
4 – 6	<p>Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.</p> <ul style="list-style-type: none"> • Apply existing knowledge to generate new ideas, products, or processes • Create original works as a means of personal or group expression. • Use models and simulations to explore complex systems and issues • Identify trends and forecast possibilities 	<p>Students identify information needed to solve a problem or to complete an assignment, conduct a search, and prioritize various sources based on credibility and relevance, retrieve relevant information from a variety of media sources, and use this information to create an effective presentation.</p> <p>Students accurately interpret symbols and visuals and can distinguish fact from opinion when presented with visuals through various media. Students use their knowledge to construct new knowledge and to communicate information.</p> <p>Students, cognizant of audience and purpose, articulate thoughts and ideas accurately and effectively through oral, written, or multimedia communications.</p> <p>Students identify parts of a system and explain how those parts interact with one another.</p>	<p>Students use keyboard, mouse and other common input and output devices (including adaptive devices when necessary) efficiently and effectively. Students handle diskettes, CD/DVDs, USB drives, microphones, and headphones with care. Students open files independently, save documents, and send documents to the printer.</p> <p>Students use menu options in software applications to create documents, simple spreadsheets, and presentations and to save files to various locations (i.e., USB drive, diskette, hard drive, server). Students begin to use e-mail to exchange documents with other teachers and students. Students know how to organize files through the use of folders.</p> <p>Students find, import, insert, and resize or move pictures, images, and charts in word processing documents, spreadsheets, presentations, and other electronic templates.</p>	<p>Digital drawing, paint, and photo editing tools</p> <p>Digital cameras</p> <p>Computer OS</p> <p>Word processing software</p> <p>Desktop Publishing</p> <p>Web 2.0 tools</p> <p>Content specific resources for models and simulations (i.e., life cycle of plants and animals)</p> <p>Input/output devices</p> <p>Database resources</p> <p>Spreadsheet software</p> <p>E-mail access</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		<p>Students generate ideas for solutions to problems and ask questions in order to create unusual, unique or clever products. Students begin to cognitively recognize the skills of adapting, improving, modifying, and expanding existing thoughts or ideas to create products.</p> <p>Students engage in the goal setting process, and with guidance, demonstrate the ability to change focus and direction or to use different strategies while using instructional rubrics and other tools to monitor and evaluate their performance.</p> <p>Students appreciate, accept, and work cooperatively with others, in both academic and social contexts. Students maintain a positive, constructive attitude in collaborative learning environments.</p>	<p>Students create developmentally appropriate multi-media products. Students create a presentation of at least four to six slides. Students insert slides and choose backgrounds, fonts, and slide layouts. Students understand and use different formats for viewing (i.e., slide sorter menu, slide show menu, normal view).</p> <p>Students use technology tools (i.e., presentation software, word processing software, publishing software, group web page design, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create informative products for various audiences inside and outside the classroom.</p> <p>Students use a variety of software for directed and independent learning activities.</p>	
7 – 8	<p>Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.</p> <p>Apply existing knowledge to generate new ideas, products, and processes</p> <ul style="list-style-type: none"> Create original works as a means of personal or group expression Use models and simulations to explore complex systems and issues 	<p>Students can accurately interpret abstract visuals (i.e., charts, maps, graphs, and models) and create products that reflect a growing understanding of visual language and require effective use of tools (i.e., cropped photos, original charts and graphs, well chosen images from databases, video clips) and use this information to solve problems and communicate information.</p>	<p>Students connect peripheral devices (i.e., microphones, headphones, digital cameras, USB drives) to computers and use them efficiently and effectively. Students access server and/or network resources (i.e., file folders/software programs, bookmarked sites).</p>	<p>Digital drawing, paint, and photo editing tools</p> <p>Digital cameras</p> <p>Computer OS</p> <p>Word processing software</p> <p>Desktop Publishing</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
	<ul style="list-style-type: none"> Identify trends and forecast possibilities 	<p>Students present ideas through the use of technology.</p> <p>Students create thoughtful ideas and solutions and take risks as they work toward goals despite mistakes.</p> <p>Students begin to think consistently of all the possibilities and to diverge to become more expansive with their thoughts/ideas that lead to the creation of original products.</p> <p>Students present thoughts, ideas, and conceptual understanding efficiently, accurately, and in a compelling manner to enhance the oral and written presentation through the use of technology.</p>	<p>Students recognize different file format extensions (i.e., .doc, .xls, .ppt, .rft, .pdf, .jpeg, .gif, .mpg, .wav, .mp3) and can import the different formats into documents, presentations, spreadsheets, and databases.</p> <p>Students use audio, video, pictures, clip art, moviemaker programs, webpage design software, Web 2.0 resources, electronic documents, and other files to create and publish electronic products to communicate with various audiences inside and outside the classroom.</p> <p>Students use advanced features and utilities of presentation software (i.e., design templates, design layouts, fonts/colors/backgrounds, animations and graphics, inserting pictures, objects, movies, sound, charts, hyperlinks, and graphs) to create an original product.</p> <p>Students use content specific tools, software, and simulations to support learning and research.</p> <p>Students apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning.</p>	<p>Web 2.0 tools, such as wikis, blogs, podcasts, Glogster, School Tube</p> <p>Content specific resources for models and simulations (i.e., life cycle of plants and animals)</p> <p>Input/output devices</p> <p>Spreadsheet software</p> <p>Database software</p> <p>E-mail access</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
			Students use telecommunications and collaboration tools to work with peers and others to investigate information and to develop solutions or products.	



New Milford Public Schools
K – 8 Education Technology Competencies

Technology Standard: Communication and Collaboration

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K – 3	<p>Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and to contribute to the learning of others through the following:</p> <ul style="list-style-type: none"> Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media Communicate information and ideas effectively to multiple audiences using a variety of media and formats Develop cultural understanding and global awareness by engaging with learners of other cultures Contribute to project teams to produce original works or to solve problems 	<p>Students confirm an understanding of what it means to communicate a thought or idea.</p> <p>Students identify hardware and software as communication devices and tools.</p> <p>Students recognize that communication requires the contribution of a receiver as well as a sender of the message.</p> <p>Students identify hardware and software as communication devices and tools.</p> <p>Students express several methods of communication.</p> <p>Students verbalize ways technology assists people to communicate.</p> <p>Students list ways they communicate and collaborate with their family.</p> <p>Students explain how they like to use the computer to communicate.</p>	<p>Students enter key words and sentences into a word processor.</p> <p>Students insert images and identify each with a description or caption.</p> <p>Students print and share work and ideas.</p> <p>Students use electronic mail to communicate with others.</p> <p>Students view online videos.</p> <p>Students engage in learning activities with learners from multiple cultures through digital means.</p> <p>Students illustrate and communicate original ideas and stories.</p>	<p>Word processor</p> <p>Web browser</p> <p>Image creation software</p> <p>E-mail software or website</p> <p>Websites with video and images</p> <p>Electronic communications device</p> <p>Instant messaging</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		<p>Students are able to name multiple software packages or websites that can be used to communicate with others.</p> <p>Students edit their writing and pictures that are sent to others.</p> <p>Students name a computer application or website they have used to draw.</p>		
4 - 6	<p>Students use digital media and environments to communicate and to work collaboratively, including at a distance, to support individual learning and to contribute to the learning of others through the following:</p> <ul style="list-style-type: none"> • Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media • Communicate information and ideas effectively to multiple audiences using a variety of media and formats • Develop cultural understanding and global awareness by engaging with learners of other cultures • Contribute to project teams to produce original works or solve problems 	<p>Students record ways that websites help people communicate their ideas.</p> <p>Students are able to speak about the different methods people use to publicize their messages.</p> <p>Students show an ability to use technology in ways that assist themselves with remembering tasks and responsibilities.</p> <p>Students show an understanding of how they can find other opinions about specific subjects.</p> <p>Students show an awareness of the attributes of a site that makes them continually visit.</p> <p>Students identify websites and their categories (i.e., social networks, instant messaging, etc) they use to communicate with their friends.</p>	<p>Students identify and apply communication techniques helpful in solving problems.</p> <p>Students work collaboratively with a partner at school.</p> <p>Students discuss methods of communicating with technology.</p> <p>Students show graphic representation of data.</p> <p>Students model acceptable behavior and understand e-mail etiquette.</p> <p>Students collaborate by assisting and editing.</p> <p>Students represent communication in a professional manner.</p>	<p>Word processor</p> <p>Spreadsheet software</p> <p>Presentation software</p> <p>Web browser</p> <p>Network</p> <p>Electronic communication devices</p> <p>Instant messaging</p> <p>Social networking</p> <p>Web authoring software</p> <p>Intranet</p> <p>Telecommuting</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		<p>Students show an awareness of audience demographics.</p> <p>Students appreciate how technology allows them to communicate with more than one friend at a time.</p> <p>Students show their learning styles</p> <p>Students show several ways that numbers are connected to each other.</p> <p>Students explain the pros and cons of telecommuting.</p>	<p>Students use a variety of technologies to produce a digital presentation or product within a collaborative work environment.</p> <p>Students utilize the Internet to facilitate information sharing.</p> <p>Use graphing applications, students show the relationships among numbers in several ways.</p>	<p>Message boards</p> <p>Blogs</p>
7 - 8	<p>Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and to contribute to the learning of others through the following:</p> <ul style="list-style-type: none"> • Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media • Communicate information and ideas effectively to multiple audiences using a variety of media and formats • Develop cultural understanding and global awareness by engaging with learners of other cultures • Contribute to project teams to produce original works or solve problems 	<p>Students identify software and websites that identify voice, video, and text that can be used online to communicate.</p> <p>Students identify technology that can obtain the opinions or perceptions of others and explain how the information can be useful.</p> <p>Students show an awareness of the rules of presenting within their presentations.</p> <p>Students identify formats (i.e., table, spreadsheet, database, chart, image) and software) used to present numeric data.</p> <p>Students identify the best digital tools to communicate information.</p>	<p>Students use online tools to collaborate with students.</p> <p>Students use online tools to convey thoughts and to solicit assistance from others involved.</p> <p>Students take part in a collaborative effort to present information effectively.</p> <p>Students demonstrate the solution to a challenge through video.</p> <p>Students summarize with audio electronically communicated.</p> <p>Students present information regarding topic or solution.</p> <p>Students communicate with experts.</p>	<p>Presentation software</p> <p>Spreadsheet software</p> <p>Sound editing software</p> <p>Audio creation software/podcasting software</p> <p>Cloud computing</p> <p>Online collaborative editing tools</p> <p>Distance learning</p> <p>Webcam</p> <p>Video conferencing Software</p> <p>Video creation</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		<p>Students recognize a range of methods and the parties necessary to communicate information on the web for their audience to observe.</p> <p>Students name specific online companies or websites that can assist in publishing their material.</p>	<p>Students publish original content onto Internet or Intranet.</p>	<p>software</p> <p>Web authoring software</p> <p>Online web authoring</p> <p>Google docs</p> <p>Podcast</p> <p>Wiki software</p>



New Milford Public Schools
K – 8 Education Technology Competencies

Technology Standard: Research and Information Fluency

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	<p>Students apply digital tools to gather, evaluate, and use information.</p> <ul style="list-style-type: none"> Plan strategies to guide inquiry Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media Evaluate and select information sources and digital tools based on the appropriateness to specific tasks Process data and report results 	<p>Students use text, people, and electronic resources to locate and to organize information for classroom assignments.</p> <p>Students can find and evaluate information related to a current or historical person or event using digital resources.</p> <p>Students can identify, research, and collect data on an environmental issue using digital issue and propose an environmentally appropriate solution.</p> <p>Students can accurately interpret and create simple visuals and use this information to solve problems and communicate information.</p> <p>Students articulate thoughts and ideas, representative of real or imaginary experiences, clearly and effectively through oral, written, or multimedia communication.</p>	<p>Students use keyboards and mouse to enter name and User ID, type sentences, and follow on-screen prompts to successfully operate computers.</p> <p>Students demonstrate correct keyboarding posture and correct hand and finger placement for home row; know how to use keyboard to create lower and upper case letters, numbers, and special keys; know how to use a mouse to print and click, and correctly place cursor.</p> <p>Students use technology tools to locate, organize, and evaluate information.</p> <p>Students create text, type words and sentences, and insert images using word processing software. Students create, save, print, and open existing files.</p> <p>Students enter simple data into a spreadsheet and create graphs electronically.</p>	<p>Web sites</p> <p>Online encyclopedia</p> <p>Word processing</p> <p>Spreadsheets</p> <p>Databases</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
			<p>Students use presentation software to illustrate concepts and to communicate ideas.</p> <p>Students begin to locate information in a variety of developmentally appropriate technology resources to support classroom assignments</p>	
4 - 6	<p>Students apply digital tools to gather, evaluate, and use information.</p> <ul style="list-style-type: none"> Plan strategies to guide inquiry Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media Evaluate and select information sources and digital tools based on the appropriateness to specific tasks Process data and report results 	<p>Students use key words to initiate searches.</p> <p>Students analyze sources to determine reliability.</p> <p>Students select and apply digital tools to collect, organize, and analyze data to evaluate theories or test hypotheses.</p> <p>Students produce a media-rich digital story about a significant event based on first-person interviews.</p> <p>Students identify and investigate a global issue and generate possible solutions using digital tools and resources.</p>	<p>Students begin to locate information using key words presented in the technology resources.</p> <p>Students use keyboards and mouse to enter name and User ID, type sentences, and follow on-screen prompts to successfully operate computers.</p> <p>Students use technology tools to locate, organize, and evaluate information.</p>	<p>Web sites</p> <p>Slideshow presentations</p> <p>Word processing</p> <p>Spreadsheets</p> <p>Databases</p>
7 - 8	<p>Students apply digital tools to gather, evaluate, and use information.</p> <ul style="list-style-type: none"> Plan strategies to guide inquiry Locate, organize, analyze, evaluate, synthesize and ethically use information from a variety of 	<p>Students, when presented with a problem, identify the information needed; use text, people, online databases, and search engines to filter relevant information efficiently; analyze information for biases, timeliness, and accuracy of the content; synthesize information</p>	<p>Students employ data-collection technology such as probes, handheld devices, geographic mapping systems, and online surveys to gather, view, analyze, and report results for content-related problems.</p>	<p>Web browsers/search engines</p> <p>Databases</p> <p>Bibliographic sites</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
	<p>sources and media</p> <ul style="list-style-type: none"> • Evaluate and select information sources and digital tools based on the appropriateness to specific tasks • Process data and results 	<p>gathered, and create an effective and efficient response to the problem.</p> <p>Students properly cite sources.</p> <p>Students are proficient with different search strategies and know which ones to use at which times.</p> <p>Students draw conclusions from a variety of data sources to analyze and interpret systems.</p> <p>Students effectively collaborate online and recognize the benefits of online collaboration.</p> <p>Students maintain focus on larger project goals, frame appropriate questions, reflect on possible courses of action and their likely consequences, develop and initiate a plan of action with appropriate smaller objectives and benchmarks, and submit the completed project when due.</p>	<p>Students select and use appropriate tools and digital resources to accomplish a variety of tasks and solve problems.</p> <p>Students use collaborative electronic authoring tools, such as wikis and blogs, to explore common curriculum content from multicultural perspectives with other learners.</p> <p>Students develop products using technology tools.</p> <p>Students use telecommunications tools (i.e., email, web pages, blogs, discussion groups, list-servs, etc.) to learn academic content and to gather, share, and publish information to various audiences.</p> <p>Students use Internet browsers, various search engines, book marking feature, and advanced search techniques to gather information; students evaluate the information for validity, bias, appropriateness, content, and usefulness.</p>	<p>Social networking sites, including blogs and wikis</p> <p>Social networking tools, such as electronic communication devices</p>



New Milford Public Schools
K – 8 Education Technology Competencies

Technology Standard: Critical Thinking, Problem Solving, and Decision-Making

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	<p>Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</p> <ul style="list-style-type: none"> Identify and define authentic problems and significant questions for investigation Plan and manage activities to develop a solution or to complete a project Collect and analyze data to identify solutions and/or to make informed decisions Use multiple processes and diverse perspectives to explore alternative solutions 	<p>Students understand that computers and software can be used to collect data.</p> <p>Students understand how the Internet can be used to find information.</p> <p>Students find information on a topic on the Internet with support.</p> <p>Students understand when it is preferable to use books or the Internet to find information.</p> <p>Students engage with teacher assistance in a critical thinking process by conducting basic evaluations using simple criteria.</p> <p>Students engage in discovery, exploration, and experimentation to reach unexpected answers. Students make unusual associations and provide a variety of solutions to problems.</p>	<p>Students use a variety of technology resources for directed and independent learning activities.</p> <p>Students use technology to gather information.</p> <p>Students use software for problem solving and for illustration of thoughts and ideas.</p> <p>Students use online sources to access remote information.</p> <p>Students use a simple computer graphing application to display data.</p>	<p>Web sites</p> <p>Word processor</p> <p>Graphing software</p>
4 - 6	Students use critical thinking skills to plan	Students understand why a	Students use content specific tools,	Web sites

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
	<p>and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</p> <ul style="list-style-type: none"> Identify and define authentic problems and significant questions for investigation Plan and manage activities to develop a solution or complete a project Collect and analyze data to identify solutions and/or make informed decisions Use multiple processes and diverse perspectives to explore alternative solutions 	<p>spreadsheet is more appropriate for collecting data than a word processor.</p> <p>Students engage in a problem solving process that promotes questioning, planning, investigations, and finding answers and solutions.</p> <p>Students demonstrate how easy access to data increases problem solving.</p> <p>Students use critical thinking and cross referencing skills to show that the data collected from the Internet is accurate.</p> <p>Students engage in a critical thinking process that synthesizes knowledge and ideas.</p> <p>Students generate ideas for solutions to problems and ask questions in order to create unusual, unique, or clever products</p>	<p>software and simulations to support critical thinking, solve a problem, or help in decision-making.</p> <p>Students select and use digital tools, instruments, and measurement devices to collect and analyze data while conducting experiments, evaluating theories, and/or testing hypothesis.</p> <p>Students identify and investigate an issue and generate a possible solution using digital tools/resources.</p> <p>Students use spreadsheets and other applications to make predictions, solve problems, and draw conclusions.</p>	<p>Databases</p> <p>Spreadsheets</p> <p>Scientific tools</p>
7 - 8	<p>Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</p> <ul style="list-style-type: none"> Identify and define authentic problems and significant questions for investigation Plan and manage activities to develop a solution or complete a project 	<p>Students demonstrate how electronic information and data facilitate critical thinking and problem solving.</p> <p>Students understand that databases store and retrieve data.</p>	<p>Gather data, examine patterns, and apply information to decision-making using electronic tools/resources.</p> <p>Students independently use appropriate technology tools to define problems and to propose hypothesis.</p>	<p>Web sites</p> <p>Data bases</p> <p>Spread sheets</p> <p>Scientific tools</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
	<ul style="list-style-type: none"> Collect and analyze data to identify solutions and/or to make informed decisions 	<p>Students understand when it is preferable to use a spreadsheet or a database to store electronic information.</p> <p>Students engage in a critical thinking process that supports synthesis and conducts evaluations by applying comprehensive criteria.</p> <p>Student draws conclusions from a variety of data sources to analyze and interpret information.</p> <p>Students engage in a problem solving process that divides complex problems into simpler parts in order to devise solutions.</p> <p>Students create thoughtful ideas and solutions and take risks as they work toward a goal despite mistakes.</p> <p>Students begin to think consistently of all the possibilities and diverges to become more expansive with their thoughts/ideas that lead to the creation of original products.</p>	<p>Students use and modify databases and spreadsheets to analyze data and to propose solutions.</p> <p>Students develop and use guidelines to evaluate the content, organization, design, use of citations, and presentation of technologically enhanced projects.</p> <p>Students explain and demonstrate how specialized technology tools can be used for problem solving, decision-making, and creativity in all subject areas.</p>	



New Milford Public Schools
K – 8 Education Technology Competencies

Technology Standard: Digital Citizenship

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	<p>Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</p> <ul style="list-style-type: none"> • Advocate and practice safe, legal, and responsible use of information and technology. • Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity. • Demonstrate personal responsibility for lifelong learning. • Exhibit leadership for digital citizenship. 	<p>Students use their interpersonal skills in assigned leadership roles to help others stay focused and to communicate when they need support in order to complete goals.</p> <p>Students use technology tools for problem solving, self-directed learning, and extended learning activities.</p> <p>Students appreciate, accept, and work cooperatively with others in both academic and social contexts.</p> <p>Students learn what a virus is.</p> <p>Students recognize and understand the effects of technology on home and school environments.</p> <p>Students recognize and understand how technology supports individual and group work.</p>	<p>Students identify the effects of a virus on hardware and software.</p> <p>Students identify the need for acceptable use policies (AUP) and discuss basic issues related to the responsible use of technology and information.</p> <p>Students abide by district restrictions and follow the district's policy of asking permission before using Internet sites. Students are introduced to and discuss some of the issues related to the responsible use of technology.</p> <p>Students participate in teacher-led discussions about Internet safety and the importance of protecting identity on-line, in e-mail, and/or websites, and of limiting distribution of information and pictures.</p>	<p>Technology tools</p> <p>Internet</p> <p>"Raising a Digital Child" – by Mike Ribble</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		<p>Students recognize and understand how technology assists students with disabilities.</p> <p>Students practice responsible use of technology systems. Students identify consequences of vandalism and inappropriate use of hardware and software.</p>	<p>Students show regard for their peers and adults by logging off or shutting down technology tools and by keeping their technology area clean.</p>	
4 - 6	<p>Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</p> <ul style="list-style-type: none"> • Advocate and practice safe, legal, and responsible use of information and technology • Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity • Demonstrate personal responsibility for lifelong learning • Exhibit leadership for digital citizenship 	<p>Students select appropriate technology tools and resources needed to communicate information to others, to achieve personal goals, and to support independent learning.</p> <p>Students identify and describe the impact of technology on home, school, and business environments. Students identify how technology supports individual and group work and assists students with disabilities.</p> <p>Students discuss issues related to responsible use of technology and information and describes personal consequences of inappropriate use.</p> <p>Students discuss common use of technology in daily life and the advantages and disadvantages its use provides.</p>	<p>Students use technology tools (i.e., calculators, data collection probes, videos, educational software) for problem solving, self-directed learning, and extended learning activities.</p> <p>Students practice responsible use of technology systems. Students identify the consequences of viruses, vandalism, and the inappropriate use of hardware and software.</p> <p>Students comply with acceptable use policy. Students identify the need for acceptable use policies (AUP), discuss basic issues related to responsible use of technology and information, describe personal consequences of inappropriate use, and begin to cite sources for information found through electronic searches.</p>	<p>“Raising a Digital Child” – By Mike Ribble</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students debate changes in technology and their effect on daily life for individuals, society, and the global community.		
7 - 8	<p>Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</p> <ul style="list-style-type: none"> • Advocate and practice safe, legal, and responsible use of information and technology • Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity • Demonstrate personal responsibility for lifelong learning • Exhibit leadership for digital citizenship 	<p>Students exhibit leadership, ethical behavior, respect for others; accept responsibility for personal actions considering the impact on others; take the initiative to plan and execute tasks, and interact productively as a member of a group.</p> <p>Students demonstrate ethical behavior and work responsibly and collaboratively with others, in academic and social contexts, to accomplish both individual and team goals related to improved academic, extracurricular, and co-curricular performances.</p> <p>Students analyze current information technologies and the effect these technologies have on school, workplace, and society.</p> <p>Students recognize personal limits in their knowledge and develop strategies and skills for using technology to seek information.</p>	<p>Students comply with acceptable use policy. Students discuss legal and ethical behaviors related to acceptable use of information and communication technology (i.e., privacy, security, copyright, file-sharing, plagiarism) and predict the possible effects of unethical use of technology (i.e., consumer fraud, intrusion, spamming, virus setting, hacking) on the individual and society, as well as identify methods for addressing these risks.</p> <p>Students model ethical behavior relating to security, privacy, computer etiquette, passwords and personal information. Students demonstrate an understanding of copyright by citing sources in papers, projects and multimedia presentations.</p> <p>Students identify the methodologies that individuals and businesses can employ to protect the integrity of technology systems.</p>	<p>www.mybytes.com</p> <p>www.digitalcitizenshiped.com/</p> <p>“Raising a Digital Child” – by Mike Ribble</p> <p>http://digitalcitizenship.net/Home_Page.html</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
		Students develop an understanding of the need to protect their identity online, in e-mail, and on websites, limit the distribution of personal information and pictures/video, and evaluate the authenticity of e-mail that solicits personal information.		



New Milford Public Schools
K – 8 Education Technology Competencies

Technology Standard: Technology Operations and Concepts

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
K - 3	<p>Students demonstrate a sound understanding of technology concepts, systems, and operations.</p> <ul style="list-style-type: none"> Understand and use technology systems Select and use applications effectively and productively Troubleshoot systems and applications Transfer current knowledge to learning of new technologies 	<p>Students identify input and output devices used with computers.</p> <p>Students understand the importance of using technology in their daily lives.</p> <p>Students demonstrate how to properly log on and off a network.</p> <p>Students discuss the advantages and disadvantages of viewing work on a monitor or from a printout.</p> <p>Students confidently know the parts of a computer.</p> <p>Students operate productivity software and its various uses effectively.</p> <p>Students are able to display proper hand placement on a keyboard.</p> <p>Students are able to display proper mouse skills using all buttons.</p>	<p>Students properly turn computer on and off.</p> <p>Students properly log on and off the network.</p> <p>Students are able to create, edit, save, print, and open within a program.</p> <p>Students demonstrate the ability to navigate in virtual environments such as electronic books, simulation software, and websites.</p> <p>Students have basic keyboarding skills.</p> <p>Students have proficient mouse skills.</p> <p>Students communicate about technology using developmentally appropriate and accurate terminology.</p>	<p>Keyboard</p> <p>Mouse</p> <p>Monitor</p> <p>Printer</p> <p>C.P.U.</p> <p>Speakers/Headphones</p> <p>Projector</p> <p>Software</p> <p>Internet browser</p> <p>File system</p> <p>Word processing</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
			Students are able to access, save, and retrieve files from a network.	
4 - 6	<p>Students demonstrate a sound understanding of technology concepts, systems, and operations.</p> <ul style="list-style-type: none"> • Understand and use technology systems • Select and use applications effectively and productively • Troubleshoot systems and applications • Transfer current knowledge to learning of new technologies 	<p>Students discuss common uses of technology in daily life.</p> <p>Students understand the benefits of being on and using a network.</p> <p>Students discuss the advantages and disadvantages of viewing work on a monitor or from a printout.</p> <p>Students determine which input/output devices to use.</p> <p>Students identify various software applications that can be applied to learning projects.</p> <p>Students are able to use properly external devices to save or load various file types (i.e., CD-R, USB drives, Internet).</p>	<p>Students continue to develop proper keyboarding skills.</p> <p>Students utilize multimedia tools effectively and apply in slideshow/video presentations and works of art.</p> <p>Students independently operate school computers.</p> <p>Students confidently apply knowledge of digital tools to collect, organize, and analyze data and/or research.</p> <p>Students develop more advanced file management skills.</p> <p>Students are able to access, save, and retrieve files from a network.</p> <p>Students are introduced to spreadsheets and their uses.</p> <p>Students are able to apply previous knowledge of digital technology operations to analyze and to solve current hardware and software problems.</p> <p>Students understand the uses of the CTRL+ALT+DEL function and when to use it.</p>	<p>Multimedia tools</p> <p>Internet tools</p> <p>Computer OS</p> <p>Peripherals</p> <p>Searching file systems</p> <p>Slideshow</p> <p>Presentations</p> <p>Spreadsheets</p> <p>Electronic communication devices</p>

Grade Level	Conceptual Themes & Sub-Concepts	Learning Skills	Technology Skills	Resources
7 - 8	<p>Students demonstrate a sound understanding of technology concepts, systems, and operations.</p> <ul style="list-style-type: none"> • Understand and use technology systems • Select and use applications effectively and productively • Troubleshoot systems and applications • Transfer current knowledge to learning of new technologies 	<p>Students identify software that is needed to make hardware work properly.</p> <p>Students learn how device drivers enable or restrict the movement of peripherals.</p> <p>Students know what information is needed to access a user's home directory.</p> <p>Students learn about computer security and file management.</p> <p>Students understand advanced concepts of networking.</p> <p>Students are able to manage files and folders within a network and external devices as well as perform backups.</p> <p>Students identify various software applications that can be applied to learning projects.</p> <p>Students are able to properly use external devices to save or load various file types (i.e., CD-R, USB drives, Internet).</p> <p>Students know how to properly and effectively manage a database.</p>	<p>Students perform advanced word processing skills independently.</p> <p>Students employ data-collection technology such as spreadsheets and databases to gather, view, analyze, and report results.</p> <p>Students integrate a variety of file types to create and illustrate a document or presentation.</p> <p>Students are able to access, save, and retrieve files from a network.</p> <p>Students utilize multimedia tools effectively and apply in slideshow/video presentations and works of art.</p> <p>Students understand the uses of the CTRL+ALT+DEL function and when to use it.</p> <p>Students select and use the appropriate tools and digital resources to accomplish a variety of tasks and to solve problems.</p> <p>Students are able to apply Internet skills to perform research for classroom assignments.</p> <p>Students independently develop and apply strategies for identifying and solving routine hardware and software problems.</p>	<p>Spreadsheets</p> <p>Database drivers</p> <p>Computer OS</p> <p>File system explorer</p> <p>Hardware peripherals</p> <p>Multimedia tools</p> <p>Networks</p> <p>Device drivers</p> <p>Electronic communication devices</p>



New Milford Public Schools
K – 8 Education Technology Competencies
Grades K – 3 Skills

Upon completion of third grade, the students will be able to work cooperatively and productively with others in small groups and use age-appropriate instructional rubrics and other tools to assess performance related to the learning goal. The students will practice correct keyboarding and proper care of computer software and hardware, create text using word processing software, and use email to send messages. The students will use an Internet browser to access websites for developmentally appropriate technology resources to locate information for assignments. They will also use presentation software to explain and to communicate information using drawing or paint software to create a picture.

Strand	Skills Required by End of Grade 3
Technology Awareness	Identifies different parts of a computer and their use. Properly starts up and shuts down a computer Uses a mouse to open/close a program, highlight text, choose menus, and complete basic drawings Logs on and off a computer Properly saves and closes files Selects a network print device and prints a document
Keyboarding	Uses a keyboard to input upper and lower case letters, numbers, spaces, and punctuation Uses special keys to navigate within and edit a document (i.e., tab key, arrow keys, enter, delete, and backspace) Uses two hands to informally type a paragraph.
Word Processing	Inputs and edits a sentence or short paragraph Correctly spaces while typing a sentence or paragraph Modifies format of document (i.e., font, font size, alignment, text color)
Painting/Drawing/Graphics	Uses a program's drawing tools to create a simple picture Explains the difference between the different drawing tools Adds text to a picture
Multimedia Presentations	Combines several simple pictures into short slide show Includes appropriate sounds and/or voice in their presentations

	Describes transitions and uses them appropriately in their slide shows
Network Awareness	Logs on and off a network Opens files from and saves files to a file server



New Milford Public Schools
K – 8 Education Technology Competencies
Grades 4 - 6 Skills

Upon completion of the sixth grade, the students will work productively in a group setting and demonstrate flexibility in assuming different roles and responsibilities. The students will engage in a problem-solving process that promotes questioning, investigating, and finding solutions. They will begin to select appropriate tools for problem-solving, self-directed learning, and extended learning activities. The sixth grade students understand the meaning of acceptable use, protect online identity, and demonstrate personal responsibility in the use of technology. The students continue to expand the use of word processing software, begin to use a spreadsheet to perform calculations, understand the functionality of a database, and create a simple multimedia project. Students use technology tools in a collaborative setting to generate products, create ideas, and to communicate effectively.

Strand	Skills Required by End of Grade 6
Technology Awareness	Opens, moves, resizes a window Creates and deletes folders Creates, renames, moves, copies files
Keyboarding	Can touch type
Word Processing	Cuts, copies, pastes text Uses spell checker Imports, moves, and manipulates graphics in a word processing document
Painting/Drawing/Graphics	Resizes objects Uses various tools such as lasso, line, shape, and text Moves, groups, and copies objects
Spreadsheets	Understands the purposes of a spreadsheet Knows parts of a spreadsheet such as cells, rows, and columns Navigates within a spreadsheet Selects cells or blocks of cells Inputs text and numbers Sorts information

	Creates simple charts and graphs
Information Systems	<ul style="list-style-type: none"> Opens files in a CD Uses an electronic encyclopedia Searches for information using key words, names, and phrases
Multimedia Presentations and Electronic Presentations	<ul style="list-style-type: none"> Defines basic elements of a multimedia presentation Creates a multipage presentation including text, graphics, photos, scanned images, and buttons Creates templates including common backgrounds
Network Awareness	<ul style="list-style-type: none"> Accesses, saves to, and retrieves files from a network Chooses printers
Internet/Telecommunications	<ul style="list-style-type: none"> Creates, opens, responds to, deletes, and e-mails Opens and navigates websites Uses search engine to find web information Uses websites to find information for projects



New Milford Public Schools
K – 8 Education Technology Competencies
Grades 7 - 8 Skills

Upon completion of the eighth grade, the students will demonstrate ethical behavior and work responsibly and collaboratively with others to accomplish both individual and team goals. The students will become a more critical thinker and problem-solver and use technology tools to solve problems and make decisions related to classroom assignments. The eighth grade students will create products that reflect a growing understanding of visual language and the effective use of technology tools. The students will use expanded features of spreadsheet, database, and presentation software and use telecommunications to publish information. As proficient users of technology, the students will demonstrate a sound understanding of the nature and operation of technology systems and will effectively use telecommunications tools for research, collaboration, and communication. The students understand the need for individuals and businesses to protect the integrity of technology systems.

Strand	Skills Required by End of Grade 8
Technology Awareness	Understands and respects copyright laws
Keyboarding	Understands relative position of the keys on a keyboard and uses formal keyboarding skills
Word Processing	Uses the “save as” feature to create copies or new versions of documents Understands how to position and remove different kinds of tabs Inserts and customizes footers and headers Manipulates the layout of a document using margins, justification, and line spacing Uses the indents, page breaks, spell check, and thesaurus Creates or imports spreadsheets into word-processed documents Uses find and replace commands
Spreadsheets	Inserts and deletes cells Formats a cell or block of cells Displays or removes grid, column, and row headings Changes column and row width Adds headers and footers Builds formulas into a cell and can copy and paste values and formulas into selected cells Is able to analyze the effects of changes made to a spreadsheet

	Designs a spreadsheet and uses the data to create charts and graphs
Database	Determines what items to use in a physical database Retrieves records from physical databases – single field, exact match Retrieves records from an electronic database – single field, exact match
Painting/Drawing/Graphics	Manipulates and exports graphics into other documents Imports a digital image into a word processing document Applies special effects to a graphic (rotate, stretch, and perspective)



New Milford Public Schools
K – 8 Education Technology Competencies
Grades 7 - 8 Skills (continued)

Strand	Skills Required by End of Grade 8
Multimedia Presentations and Electronic Presentations	Understands the concept of a template and the use of color schemes, background items, and clip art within the template Creates a series of screens that show objects and backgrounds changing in simple animation Uses cell-based animation Uses pre-recorded sounds or CDs within the presentation Digitizes and saves sound from an audio CD to include presentation Records sound, saves in a digitized format, and includes in presentation Edits digitized sounds Plays digitized movies using a stand-alone application Captures video from a source (camcorder, VCR) and saves in digitized form Adds digitized movies to a presentation
Network Awareness	Logs on and off a network with a password Accesses, saves to, and retrieves files from a network
Internet/Telecommunications	Attaches a document to an e-mail message Enters a Uniform Resource Locator (URL) Uses the directory buttons in the web browser Uses the tool bar in a web browser Saves sites using a bookmark, hotlist, or favorite Evaluates web pages using evaluation criteria Creates a class or school home page Can develop a personal portfolio Adds images from the web to their work
Information Systems	Uses electronic resources including software and web pages Uses keyword search to locate information Identifies key words, names, phrases, major headings, and groupings for a search Designs a title search strategy, narrowing the search parameters as needed Can do a Boolean word search Skims articles for major ideas Transfers notes to a notepad or word processor

New Milford Board of Education
 Committee on Learning Meeting Minutes
 November 16, 2010
 Lillis Administration Building, Rm. 2

Present:	Mrs. Alexandra Thomas, Chairperson
	Mr. David Lawson
	Mrs. Lynette Celli Rigdon
	Mrs. Nancy C. Tarascio-Latour

Also Present:	Dr. JeanAnn C. Paddyfote, Superintendent of Schools
	Dr. Maureen E. McLaughlin, Assistant Superintendent
	Mrs. Wendy Faulenbach, Board Chairman
	Mrs. Susan Stoughton
	Mr. Gary Barker

A.	Call to Order Mrs. Thomas called the meeting to order at 7:30 p.m.	Call to Order
B.	Public comment No public comment.	Public Comment
C.	Items for Discussion and Possible Action 1. Technology Competencies Mrs. Thomas noted this is a draft primarily to give the new Director of Technology an opportunity to review it. <ul style="list-style-type: none"> • Dr. McLaughlin noted the topics are derived from the <i>National Educational Technology Standards and Performance Indicators for Students</i>. Mr. Greg Shugrue aligned the competencies to develop a K-8 scope and sequence. • Mr. Lawson expressed concern about how skills obtained will be measured, what the standards are, and how they will be evaluated. Dr. McLaughlin explained as content area curriculum is developed, the technology competencies will be built into them. • Dr. Paddyfote suggested considering changing the title of the document from Technology Curriculum to Technology Competencies. Dr. McLaughlin agreed. 	Items for Discussion and Possible Action Technology Competencies

NEW MILFORD, CT

	<ul style="list-style-type: none"> • Mr. Lawson asked if resources are available to allow students to be able to perform the tasks outlined. He said that consideration should be given to having more computers available in classrooms. • Mrs. Thomas noted that this subcommittee does not meet again until February. It was suggested that there be a special subcommittee meeting to approve the technology competencies before then, so they can be imbedded into curricula as they are being written. • Mrs. Thomas also felt renaming the draft proposal was a good idea. <p>2. Approve Five-Year Curriculum Plan</p> <p>Dr. McLaughlin met with all the department heads at the high school to be sure that every course listed in the high school's program of studies has a curriculum on file. The five-year plan may need to be revised over time, but it currently represents every course offered in the district. The department heads were pleased to have a plan in place, so they can see what courses are up for revision. The cost estimates are based on approximately two teachers per course.</p> <ul style="list-style-type: none"> • Mr. Lawson questioned why AP US history is on the schedule for 2013-2014 when the new AP course guidelines are being introduced in 2012-2013. Dr. McLaughlin will check with Mrs. Racey to understand why she wanted to revise the AP course in this order. • Mr. Lawson commented on the mandate for high school graduates to have twenty-five credits to graduate. This does not begin until 2014 for the Class of 2018. Dr. McLaughlin stated that teachers are being trained in how to use on-line 	<p>Items for discussion and Possible Action</p> <p>Five- Year Curriculum Plan</p> <p>Motion passed 3-1 vote to bring Five-Year Curriculum Plan to the full board in December for approval.</p>
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	<p>programs right now which may be an option to meet the additional staffing needed to provide more courses.</p> <ul style="list-style-type: none"> Mrs. Rigdon moved to bring the five-year curriculum plan to the full board in December for approval. Mrs. Tarascio-Latour seconded the motion which passed with one opposed. In favor: Mrs. Alexandra Thomas, Mrs. Lynette Celli Rigdon, and Mrs. Nancy Tarascio-Latour. Opposed: Mr. David Lawson 	
D.	<p>Items for Discussion</p> <p>1. Chemical Hygiene Plan</p> <p>Gary Barker, Department Head; and Susan Stoughton, Chemical Hygiene Officer, were present.</p> <p>Dr. McLaughlin reported that SMS has already purchased goggles and aprons to meet safety requirements; a science safety acknowledgement form has been created for signatures by parents and students. The number of occupants per lab is now limited to twenty-five. The chemical storeroom is in the process of being cleaned out and a fireproof cabinet installed for flammables. Outdated/unlabeled/inappropriate chemicals are being collected for disposal. Venting hoods are being serviced to be sure they are operational. Spill kits are to be purchased.</p> <ul style="list-style-type: none"> The need to update the Chemical Hygiene Plan at SMS came to light after the PD on April 1, 2010, led by an expert on lab safety, Dr. Kenneth Roy. Mrs. Stoughton reported working over twenty-two hours on the plan over the summer. In addition, she took ten hours of OSHA training. Preparation is underway for hand-held chemical showers. Training teachers is part of the 	<p>Items for Discussion</p> <p>Chemical Hygiene Plan for Schaghticoke</p>

	<p>process.</p> <ul style="list-style-type: none">• John Calhoun has been apprised of the need for chemical showers. <p>2. Professional Development Plan for 2011-2012</p> <ul style="list-style-type: none">• Teachers are in the process of submitting evaluations for the PD offered this year. Based on that feedback and on that from the teachers who attended a recent SRBI training, a PD plan will be developed for 2011-2012. Invitations have been extended to all certified staff (in order to have a more balanced representation of staff) to be part of the PD Committee that will meet in January.	<p>Professional Development Plan for 2011-2012</p>
E.	<p>Adjourn</p> <p>By motion of Mr. Lawson, the meeting adjourned at 8:15 p.m.; motion seconded by Mrs. Tarascio-Latour and passed unanimously.</p>	<p>Adjourn</p> <p>Motion made and passed to adjourn the meeting at 8:15 p.m.</p>

Respectfully submitted,



Wendy Faulenbach, Chairperson
New Milford Board of Education