

Agenda

- I. Call to Order / Attendance
 - A. Pledge of Allegiance
- II. Action Item: Motion to approve the resignation of Happy Marino, Board of Education member
- III. Action Item: Motion to approve appointment of Christine Maisano, Board of Education member
- IV. Superintendent's Report
Speaker(s): Craig A. Cooke, Ph.D.
 - A. Start of School Update
 - B. Review of Education Specifications for New School Building
- V. Board Member Comments
- VI. School / Community Session
 - A. Public Participation
- VII. Board of Selectmen Liaison
Speaker(s): Scott Murphy
- VIII. Consent Agenda (Ref. Bylaw #9540.2 and #9540.8)
 - A. Budget Expenditures as of September 10, 2021
- IX. Board Committees / Liaison Updates (Ref. Bylaw #9450)
 - A. Curriculum and Student Development
Speaker(s): Members: Diane-Infantine Vyce, Chair; Greg DeSantis, Catherine Miller
 - B. Communications Committee
Speaker(s): Members: Tom Pellegrino, Chair; Diane-Infantine Vyce, Greg DeSantis
 - C. Facilities Committee
Speaker(s): Members: Emily Rosenthal, Chair; Happy Marino, Katie Stein
 - D. Finance Committee
Speaker(s): Members: Katie Stein, Chair; Happy Marino, Tom Pellegrino
 - E. Personnel Committee
Speaker(s): Members: Violet McNerney, Chair; Diane Infantine-Vyce, Catherine Miller
 - F. Policy Committee
Speaker(s): Members: Happy Marino, Chair; Violet McNerney, Emily Rosenthal
 1. Second Reading: Policy #3020.7 Budget Procedures and Line Item Transfers
 - G. LEARN Liaison
Speaker(s): Katie Stein

- X. Action Item: Motion to approve the Daniel Hand High School Science Department Science Department Chemical Hygiene Plan
- XI. Action Item: Motion to approve the Polson Middle School Science Department Chemical Hygiene Plan
- XII. Action Item: Motion to approve the minutes of the August 17, 2021 Board of Education Meeting (Ref. Bylaw #9540.0)
- XIII. Future Agenda Items
- XIV. Meetings/Dates of Importance
- XV. Adjournment
- XVI. The Town of Madison does not discriminate on the basis of disability, and the meetings are ADA accessible. Individuals who need assistance are invited to make their needs known by contacting the Town's ADA/Human Resources Director, Deb Milardo, at 203-245-5603 or by email at milardod@madisonct.org at least five(5) business days prior to the meeting.

DRAFT

February 15, 2022 Referendum Date:

September 14, 2021 – Board of Education

- i. Introduction of Ed Specs

October 12, 2021 – Board of Education

- i. First Read of Ed Specs and introduction of project budget

October 26, 2021 – Board of Education

- i. Second Read of Ed Specs and introduction of project budget and estimated tax impact

November 9, 2021 – Board of Education (Invite BOS and BOF)

- i. Tri-board intro to all three boards

Monday, November 22, 2021 - Board of Selectmen

- i. Recommend Appropriation and Bonding
- ii. Refer to Planning and Zoning Commission for 8-24 report

Thursday, December 2, 2021 - Planning and Zoning Commission

- i. CGS 8-24 approval

Wednesday, December 15, 2021 - Board of Finance

- i. Approve Appropriation
- ii. Recommend borrowing to town meeting

Monday, January 10, 2022 - Board of Selectmen

- i. Recommend Appropriation and Bonding
- ii. Approve Bond Resolution for Special Town Meeting
- iii. Set date of Special Town Meeting and date of referendum
- iv. Authorize explanatory text
- Silent Period begins for advocacy related to referendum question
- v. Authorization of three local resolutions

Wednesday, January 12, 2022 - publish notice of Special Town Meeting and Referendum

Tuesday, January 25, 2022 - Special Town Meeting

Tuesday, February 15, 2022 - Referendum held

By June 30, 2022 - submit school construction grant application



Madison Public Schools
Madison, Connecticut

ELEMENTARY EDUCATIONAL SPECIFICATIONS

for

Jeffrey Elementary School

DRAFT 9.3.2021

BOARD OF EDUCATION

Galen Cawley, Chair
Gregory DeSantis, Ed.D., Vice Chair
Diane Infantine-Vyce, D.P.M.
Violet Mc Nerney, Ed.D
Cathy Miller
Thomas Pellegrino, Ph.D.
Emily Rosenthal, MPH, LMSW
Katie Stein

ADMINISTRATION

Craig Cooke, Ph.D., Superintendent of Schools
Gail Dahling-Hench, Assistant Superintendent
William H. McMinn, Director of Facilities
Stacy Nobitz, Finance Director

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I. INTRODUCTION

The Madison Public Schools is committed to consistently maintaining our facilities and planning for the future of our buildings as 21st century learning environments.

To initiate planning for a new PreK-5 Jeffrey Elementary School and improvements to Brown Intermediate to convert them to K-5 Elementary Schools, Madison Board of Education engaged the services of Colliers International, Drummey Rosane Anderson, and Daniel Hansen, educational consultant to assist with the development of these educational specifications. The following individuals participated in the initial specific program meetings to provide input for these educational specifications:

Elizabeth Battaglia, Director of Special Education	Frank Henderson, Principal, Brown Intermediate
Kerri Beisner, Teacher, Special Education	Michelle Horn, K-12 Literacy Coach
Peggy Bell, Teacher, Grade 3	Leslie Lopez, Teacher, Spanish
Margaret Borden, Teacher, Kindergarten	Deb Lynch, Teacher, Kindergarten
Robert Burr, Chief Custodian	Eileen Martin, Teacher, Special Education
Ingrid Byrne, Math Interventionist	Tracey McGinley, Teacher, Grade 5
Erinn Coady, Teacher, Special Education	William McMinn, Director of Facilities
Carissa Connell, Teacher, Visual Arts	Lisa Miceli, Teacher, PreK
Dr. Craig Cooke, Superintendent	Angela Milone, Teacher, PreK
Gail Dahling-Hench, Assistant Superintendent	Alicia Romanacci, Teacher, Spanish
Susan Daub, Teacher, Physical Education	Thomas Scarice, Former Superintendent
Tricia Edgar, Speech Language Pathologist, PreK	Lisa Seales, Teacher, Grade 4
Jill Fayan, Library Media Coordinator K-12	Drew Sellitti, Teacher, Grade 1
Scott Ferguson, Teacher, Music	Doreen Shirley, Reading Consultant
Jennifer Figurelli, Teacher, Grade 2	Elizabeth Solin, Administrative Secretary
Dawn Fiorelli, Library Media Specialist	Robin Sorey, Occupational Therapist, PreK
Elizabeth Fortsch, School Nurse	Kelly Spooner, Principal, Ryerson Elementary
Becky Frost, Principal, Jeffrey Elementary	MaryBeth Starr, Teacher, TESOL K-12
Stephanie Fumiatti, Teacher, Grade 5	Gay Tomasevich, Teacher, Computer Coding
Mike Ginsberg, Teacher, STEAM	Kerry Tucker, Teacher, Special Education
C.J. Gladstone, Special Education Coordinator	Linda Wade, Teacher, Special Education
Lynn Hadad, Teacher, PreK	Lauren Warner, Teacher, Grade 5
Maria Hainer, Teacher, PreK	

II. MADISON CORE DOCUMENTS

Vision Statement: “Every Child, Every Day, Leading the Way”

The Madison Public Schools are driven by a mission to prepare all learners to make a unique, positive contribution in a complex, global society. We are committed to fostering the diverse talents and abilities of each and every child in an emotionally and physically safe environment. We envision learning as joyful and learners as passionate. We support our educators as innovators in a dynamic pursuit of continuous improvement.

We are committed to the work that will lead to the development of all learners’ capacities to:

- put ideas into action by thinking critically and creatively to identify and solve authentic, complex problems;
- communicate and collaborate purposefully and effectively using a variety of media;
- approach learning with effort and persistence while responding to success and failure with resiliency, reflection, and adaptability in an ever-changing world;

- make ethical and responsible decisions.

Vision for Curriculum Development

Madison Public Schools believes all students should have access to a high quality, engaging, education. There are expectations of success for all students with units that encourage student exploration and inquiry.

The curriculum is content rich, offering students opportunities to learn important concepts and procedures with understanding, while simultaneously providing students with opportunities to explore and grow in identified 21st Century Capacities. These multi-disciplinary outcomes (critical thinking; creative thinking; communication/collaboration; self-direction; and global thinking) are thoughtfully and purposefully embedded throughout the curriculum alongside content that is informed by state and national standards.

A common language is articulated accurately, and it reflects accepted practice within the discipline and/or current educational research and promotes the work of the discipline. The written documents in each grade level include key required components, including the scope of the material and the depth of understanding that is expected upon unit completion.

Maps for courses and grade levels define the pace and common expectations of a content. Teachers use these maps to guide and sequence instruction toward the attainment of key concepts detailed in the unit design. Unit design follows the Understanding by Design (UbD) Model by Jay McTighe and Grant Wiggins although personalized to match the work valued in Madison.

Profile of a Graduate: Student Growth and Development Matrix

Critical Thinking	Creative Thinking	Collaboration/ Communication	Self-Direction	Global Thinking
<p>Inquiry</p> <p>Posing, pursuing, and refining significant questions to deepen understanding about a topic or issue.</p>	<p>Idea Generation</p> <p>Studying a problem, need or model (mentor text, political piece, documents, art work, etc.) to consider limitations and imagine new solutions/transformations.</p>	<p>Collective Intelligence</p> <p>Working respectfully and responsibly with others, exchanging and evaluating ideas to achieve a common objective.</p>	<p>Self-Awareness</p> <p>Examining current performance critically to identify steps/strategies to persist.</p>	<p>Citizenship</p> <p>Identify, analyze and contribute to critical issues in society in an ethical and responsible manner.</p>
<p>Analyzing</p> <p>Examining information/data/evidence from multiple sources to identify possible underlying assumptions, patterns, and relationships in order to make inferences.</p>	<p>Design</p> <p>Engaging in a process to refine a product for an intended audience and purpose.</p>	<p>Product Creation</p> <p>Effectively use a medium to communicate important information.</p>	<p>Decision Making</p> <p>Make responsible decisions, based on potential outcomes.</p>	<p>Alternate Perspectives</p> <p>Interpret or critique complementary and competing approaches, experiences, and worldviews in order to develop an empathetic perspective.</p>

III. PROJECT RATIONALE

*(Excerpted from the **Madison Schools Renewal Plan**)*

In September of 2019, the Madison Public Schools contracted from six schools to five with the closure of Island Avenue Elementary School. Now, the schools are composed of the following grade levels:

- **Town Campus Learning Center**, PreK
- **Jeffrey Elementary School**, Kindergarten - Grade 3
- **Ryerson Elementary School**, Kindergarten - Grade 3
- **Brown Intermediate School**, Grades 4 and 5
- **Polson Middle School**, Grades 6 - 8
- **Daniel Hand High School**, Grades 9-12

According to Connecticut General Statutes 10-220, each Board of Education in Connecticut is responsible for the day to day maintenance and operation of its buildings, lands, and other property used for school purposes. Additionally, this statute mandates that each Board of Education “*shall make a continuing study of the need for school facilities and of a long-term school building program, and from time to time, make recommendations based on such study to the town.*” Within this purview, the Board of Education has worked in collaboration with the Town of Madison to study the long-term needs of its facilities, while planning for future enrollment trends.

The school district facilities have been comprehensively analyzed a number of times over the past twenty years. Most recently, an in-depth study that began in 2014 resulted in comprehensive reports facilitated by the Drummey, Rosane and Anderson (DRA) architectural consulting firm. These reports included the following:

- **Architectural Assessments** of each facility (DRA, October 6, 2015)
- **Mechanical and Electrical Systems Existing Conditions Narrative** (Consulting Engineering Services – CES, May 20, 2015)
- **Comprehensive 10 Year Enrollment Projections Analysis** (Education Resources Management, Dr. Arthur Wagman, December 23, 2014)
- **Enrollment Projection Refresh** (Education Resources Management, Dr. Arthur Wagman, Feb 9, 2017 and Nov 9, 2018)
- **Enrollment Projections** (SLR, March 2021)

With the addition of Colliers International serving as representation, these studies culminated with a plan to shrink the district footprint from six schools to five schools. A referendum on September 26, 2017 sought approval from the community to build a new elementary school on the Ryerson School property, with the expectation that a full renovation of Jeffrey School would follow immediately thereafter.

The referendum failed and the Board of Education then sought another approach to address the current and future maintenance needs of the school facilities. Based on a trend of significant declining student enrollment over time, and with the projection for the trend to continue into the foreseeable future, the BOE voted to move forward with the plan to contract the district from six schools to five by closing Island Avenue Elementary School in June 2019.

In the fall of 2017, the Board of Education again commissioned the services of Colliers International to develop a long-term facility maintenance plan. With reports developed over the past few years, a draft plan was presented to the Board of Education’s Facilities Committee in the spring of 2018. On May 31, 2018, the Facilities Committee voted to forward the draft **10 Year \$100 million Capital Maintenance Plan** to the full Board of Education for approval. On June 19, 2018, the full Board of Education voted unanimously to adopt the plan.

The plan then moved to the Capital improvement Program – the town and schools joint long-term capital projects plan - while board members and members of the public began to question if there was a better plan out there other than the 10 Year \$100 million maintenance plan. Members of the BOE, Board of Selectmen, and Board of Finance came together to form the Tri Board School Facilities Working Group. The group held meetings and public forums over a period of months and in April 2019 the group presented viable options for the town to consider beyond the BOE adopted 10 Year \$100 Million Capital Maintenance Plan.

In September 2019, the BOE voted unanimously to adopt a long-term plan for the renewal of our school facilities. This plan is the culmination of work at the BOE level since the failed referendum in 2017 and the vast efforts of the Tri-

September 3, 2021

Board School Facilities Working Group. While the referendum failed, the issue of aging school facilities and mounting maintenance projects remain.

The BOE voted to adopt a plan to contract the district further from five schools to four. The earliest point in which this model would be implemented would be for the 2025-2026 school year.

The BOE adopted plan calls for:

- New construction of a PreK-5 elementary school
- Improvements to Brown Intermediate School to transition to a K-5 school
- Maintaining Polson as a 6-8 school and DHHS as 9-12
- Renovations at Polson including:
 - Air Quality System/HVAC
 - Auditorium Modernization
 - Security Enhancements

The plan, which was approved unanimously by the BOE, would result in the closure of both existing K-3 elementary school buildings as well as the Town Campus Learning Center Preschool (TCLC). The plan has been sent to the school and town Capital Improvement Plan (CIP) where it will be incorporated with all other capital needs of Madison.

This project seeks to provide school buildings that:

- Create learning environments designed for current instructional strategies as captured in Madison's Core Documents;
- Benefit from needed technology upgrades;
- Comply with current building and fire codes;
- Incorporate contemporary design for school safety;
- Utilize modern, efficient heating and cooling systems; and
- Provide accessibility to all by meeting the requirements of the Americans with Disabilities Act.

IV. THE PROJECT

Objective: To ensure all Madison children are able to attend a school that is safe, modern, compliant with current building codes and able to support their educational program.

The following project specifications for the new Jeffrey Elementary School were developed using data from the population study conducted in March 2021: *School Enrollment Projections Analysis* conducted by Milone & MacBroom (now SLR).

- School: **Jeffrey Elementary School**
- Project Type: New Construction
 - Total Program Area: **58,895** square feet (*TGSF x 71%*)
 - Estimated Building Area (inside face of walls): **78,527** square feet
 - Space Standard Building Area: **74,867** square feet
 - Total Gross Square Feet (outside face of walls): **82,453** square feet (*Bldg. Area x 1.04*)
- Anticipated Referendum: February 2022
- Design Enrollment: **601*** students

* Includes 45 PreK students from the Town Campus Learning Center

V. ENROLLMENT AND CAPACITY DATA

The Jeffrey Elementary School enrollment as of October 1, 2020 was 324 students in grades K – 3. The eight-year maximum enrollment projection for the new PreK-5 Jeffrey Elementary School is 601, which includes 45 PreK students transferring from the Town Campus Learning Center to the new Jeffrey Elementary School.

Source: *School Enrollment Projections, March 2021, Milone & MacBroom (SLR)*

VI. OVERVIEW OF PROGRAMS

GENERAL EDUCATION

The features of the elementary classrooms at Jeffrey can be divided into three classifications: (1) Early Childhood – PreK and Full-Day Kindergarten; (2) Early Elementary - grades one and two; and (3) Intermediate - grades three, four and five. The classroom needs of all elementary children will require flexibility of space, portability of furniture and acoustical treatment of environment. This will be accommodated while providing low height furnishings and more space for group instruction and movement that will range from total class involvement to three or four separate groups doing different activities at the same time. Specific to Madison’s instructional approach, whole class gathering spaces are required for both Morning Meeting/language arts mini lessons as well as a separate space for the Number Corner, a feature of the mathematics program. Space should also be provided for students to read, write, research, and study for either individual or small group projects. The learning environment must also accommodate space for multiple adults (specialists and para educators) who work with students within the general classroom environment. All instructional classrooms require storage space for items such as classroom libraries, textbooks, reference materials, supplemental books, supplies, science equipment, charts, globes, computers, calculators and audio-visual equipment. Equally important is wall space to post anchor charts and other instructional reference materials for students to access on a daily basis.

In addition to the subject areas of Health & Wellness, Mathematics, Reading/Language Arts, Science, and Social Studies, our General Education program includes curriculum focused on Art, Music, Physical Education, STEAM and World Languages. Additionally, an instrumental program (a percussion band and a theater class) is provided for all students in grades 4 and 5. Support Services include a Library/Media Center and technology support integrated throughout the learning environments. Facilities for these areas need to be specific to each program’s purpose yet allow for flexibility of space as with the PreK-5 classrooms. As the PreK – 5 program requires that students travel to these various program areas periodically during the day, consideration should be given to the student traffic that will result from this academic arrangement. Student proximity to the library/media center, STEAM lab, gymnasium/auditorium, general music and art rooms should also be considered.

A platform off of the gymnasium will serve as a stage area for school assemblies, performances and other events. It will be adjacent to the gymnasium and accessible from the main corridor. The platform will be accessible and code compliant with ramp access. Included in the design will be a high-quality built-in sound system, stage draperies and main curtains, as well as adjustable stage and general lighting. An electronically controlled acoustical wall will be installed at the proscenium to allow the space to be used for instrumental music lessons and ensemble practice on the platform while the gymnasium is in use.

Additional instructional space is necessary to provide support for non-identified students, as prescribed in the Scientific Researched Based Intervention (SRBI) requirements of the Connecticut State Department of Education. General Education Intervention/Support Services is comprised of Reading, Mathematics and English Learner support (TESOL). Each of these rooms will be centrally located within the academic area of the building. These rooms will be utilized for individual testing, individual and small group instruction. A Developmental Guidance program is also part of the general education support services.

The outside play area for the early elementary and intermediate levels must be extensive and varied to accommodate activities that range from the minimal space demands of jump rope and the like, to larger areas needed to play soccer, kickball, softball, etc. This play area should be away from instructional spaces, if possible. Ideally, this play area should be in close proximity to gymnasium and cafeteria for easy access. The early childhood play area should be near the PreK and kindergarten classrooms, depending on the design of the school and proximity to other classrooms.

SPECIAL EDUCATION

Madison Public Schools invest significantly in their special education programming to best serve their students and in order to avoid costly outplacement services for their students. Special Education programs at the new Jeffrey Elementary include: a PreK program with related services specific to PreK; a K-5 program: the Functional Academic Skills Education (FASE), serving students from across the district; K-5 Special Education Resource, Occupational/Physical Therapy (OT/PT) Services and Related Services (Social Work, Psychologist, Speech/Language/Hearing, BCBA).

Program spaces for special education/related service teachers should be able to meet the needs for small group instruction. They will need to be of sufficient size to accommodate children who require specialized equipment. Rooms will be used for individual testing, confidential meetings with parents and/or students, individual and small group instruction, counseling, and staff conferences.

SUPPORT SERVICES

MEDIA CENTER

The Library Media Center of an elementary school is a multi-purpose room and preferred to be located as a central “hub” of the school and can be referred to as a Learning Commons. It should be bright, colorful, attractive, warm and inviting. It is important that the media center be designed with the student’s safety in mind. There should be freestanding low, double-faced shelving allowing a staff member to see the entire area. The area must be spacious enough to house an appropriate print and media collection. There should be room for multiple classrooms to use this resource on an independent basis. The room is divided for multiple purposes. A small story corner, a large group instructional space, a student project area, a production area for teachers, provision for multiple computer workstations for research and access to online card catalogue as well as a circulation area located near an entrance/exit door is also required.

TECHNOLOGY

A contemporary elementary school must be able to support varied uses of technology. In particular, the school’s infrastructure should reflect the latest in wiring and cabling, which would support current technology applications as well as the capacity to support future requirements. Computers should support the full range of educational and operational functions in the school.

Wiring for all classrooms will include multiple network drops and multiple electrical outlets. The entire facility will have wireless connectivity to support the implementation of one-to-one mobile devices such as laptops, netbooks, and other Internet-ready devices.

VII. PROGRAM SPECIFICATIONS (Detailed Description)

Unless otherwise noted, the standard furnishings for every classroom noted below are expected to include the following:

- Room darkening shades
- Acoustical insulation for soundproofing
- Air conditioning
- ADA compliant building standards
- Wireless/internet access to support at least 30 mobile devices
- Multiple electric outlets
- Sound Field System
- Telephone
- Intercom for communication with office

GENERAL EDUCATION PROGRAMS

EARLY CHILDHOOD: FULL-DAY KINDERGARTEN	
SPACE: 1,100 square feet including student toilet room (each)	
NUMBER: Five (5) classrooms	
Toilet	<ul style="list-style-type: none"> • Toilet room with sink within classroom at a level appropriate for children ages 4-6
Sinks	<ul style="list-style-type: none"> • Stainless steel sink with laminate countertops appropriate for 4 and 5-year olds • Soap and towel dispenser
Classroom Storage	<ul style="list-style-type: none"> • Built-in bookcases • Storage areas for anchor charts, large bins/kits • Classroom library storage • Counters under windows where possible
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe for 3 adults • One (1) lockable four-drawer filing cabinet • Additional instructional storage closet in corridor to be shared by Grades K-2
Student Storage	<ul style="list-style-type: none"> • Coat and personal storage area for twenty-four (24) located within the classroom
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and area rugs
Display	<ul style="list-style-type: none"> • Magnetic whiteboards • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • Two (2) tables • Flexible seating/tables to accommodate up to twenty-four (24) students (flexible/adaptable workstations)
Teacher Furniture	<ul style="list-style-type: none"> • One (1) Teacher desk/chair (possibly built into counter area to save space)
Other Furniture	<ul style="list-style-type: none"> • Desk and chair for classroom para
Classroom Technology	<ul style="list-style-type: none"> • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • 1-to-1 laptops for each student with charging station • One (1) teacher computer

EARLY ELEMENTARY – GRADES ONE and TWO	
SPACE: 890 square feet (each classroom) 50 square feet (in-class toilet room)	
NUMBER: Nine (9) classrooms	
Toilet	<ul style="list-style-type: none"> • Toilet room with sink within classroom at a level appropriate for children ages 6-8
Sinks	<ul style="list-style-type: none"> • Stainless steel sink with laminate counters • Soap and towel dispenser
Classroom Storage	<ul style="list-style-type: none"> • Built-in bookcases • Storage areas for anchor charts, large bins/kits • Classroom library storage • Counters under windows where possible
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe for three (3) adults • One (1) lockable four-drawer filing cabinet • Additional instructional storage closet in corridor to be shared by Grades K-2
Student Storage	<ul style="list-style-type: none"> • Coat and personal (non-locking) lockers for twenty-four (24)/classroom located in the corridor (2 students/locker)
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and area rugs
Display	<ul style="list-style-type: none"> • Magnetic whiteboard

EARLY ELEMENTARY – GRADES ONE and TWO	
	<ul style="list-style-type: none"> • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • Two (2) tables • Flexible seating/desks/tables to accommodate up to twenty-four (24) students
Teacher Furniture	<ul style="list-style-type: none"> • Teacher desk/chair, possibly built into counter area to save space
Other Furniture	<ul style="list-style-type: none"> • Desk and chair for classroom para
Special Needs/Equipment	<ul style="list-style-type: none"> • Common space outside classroom desirable
Classroom Technology	<ul style="list-style-type: none"> • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • 1-to-1 Chromebook device for each student with charging station • One (1) teacher computer

INTERMEDIATE – GRADES THREE, FOUR, and FIVE	
SPACE: 890 square feet (each)	
NUMBER: Eleven (11) classrooms	
Toilet	<ul style="list-style-type: none"> • Toilet facilities located in close proximity to classrooms
Sinks	<ul style="list-style-type: none"> • Stainless steel sink with laminate counter • In-room water fountain • Soap and towel dispenser
Classroom Storage	<ul style="list-style-type: none"> • Built-in bookcases • Storage areas for anchor charts, large bins/kits • Classroom library storage • Counters under windows where appropriate
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe for three (3) adults • One (1) lockable four-drawer filing cabinet • Additional instructional storage closet in corridor to be shared by Grades 3-5
Student Storage	<ul style="list-style-type: none"> • Coat and personal storage areas are located in the corridors for up to twenty-six (26) students per classroom (one (non-locking) locker per student; double stacked)
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and area rugs
Display	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • Table and appropriate student seating for twenty-six (26)
Teacher Furniture	<ul style="list-style-type: none"> • Teacher desk/chair, possibly built into counters to save space
Other Furniture	<ul style="list-style-type: none"> • Desk and chair for classroom para
Special Needs/Equipment	<ul style="list-style-type: none"> • Common space outside classroom desirable
Classroom Technology	<ul style="list-style-type: none"> • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • 1-to-1 Chromebook device for each student with charging station • One (1) teacher computer

VISUAL ARTS	
SPACE: 1,450 square feet (includes 350 s.f. for kiln room and storage)	
Sinks	<ul style="list-style-type: none"> • Minimum two (2) deep sinks with clay traps in addition to one (1) student accessible sink all in same location • Paint-resistant countertops
Access	<ul style="list-style-type: none"> • Close to workroom and STEAM classroom, if possible

VISUAL ARTS	
Classroom Storage	<ul style="list-style-type: none"> • Lockable closets • Easily accessible cabinets and shelves • Vertical file tub-storage cabinets with locks • Two (2) kitchen-type mobile carts with shelves • Draftsman cabinet file for large paper/poster storage
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe • One (1) lockable four-drawer filing cabinet
Student Storage	<ul style="list-style-type: none"> • Space to store student work in progress; one area per classroom
Lighting	<ul style="list-style-type: none"> • North facing classroom, preferable
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile; carpet area
Display	<ul style="list-style-type: none"> • Two-sided fully locked showcase on room's corridor wall (and others throughout building) • Magnetic whiteboard • Bulletin Board
Student Furniture	<ul style="list-style-type: none"> • Twenty-six (26) adjustable chairs/stools
Teacher Furniture	<ul style="list-style-type: none"> • Teacher desk/chair, possibly built into counters to save space • Demonstration table
Other Furniture	<ul style="list-style-type: none"> • Six (6) adjustable worktables (rectangular) to seat six (6)
Special Needs/Equipment	<ul style="list-style-type: none"> • One (1) kiln (to be appropriately located and sized) with ventilation system • Drying racks • Book racks and magazine shelves (fine arts area) • Four (4) sturdy wooden adjustable painting easels • Two (2) large rolling waste barrels • Eyewash station • Paper cutter
Classroom Technology	<ul style="list-style-type: none"> • Two (2) student computers • Two (2) laptop computers • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • One (1) teacher computer • Full color printer

GENERAL AND INSTRUMENTAL MUSIC	
<u>SPACE:</u>	<p>1,000 square feet for General Music</p> <p>900 square feet for Instrumental Music on platform adjacent to gymnasium (including instrument storage)</p>
<u>NUMBER:</u>	One (1) room for General Music (K – 5), and one (1) space for gr. 5 Instrumental Music
Sinks	<ul style="list-style-type: none"> • Large sink in Instrumental Music room to submerge brass instruments for cleaning • Small sink/fountain area in General Music room
Access	<ul style="list-style-type: none"> • In proximity to gymnasium and platform (stage) • Instrumental room ideally located near bus entrance for easy drop off/pick up of instruments
Classroom Storage	<ul style="list-style-type: none"> • Music cabinets for sheet music storage (each room) • Built-in bookcase (16" x 15') • Storage for Orff instruments for general music classroom
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe in each space • One (1) lockable four-drawer filing cabinet in each area
Student Storage	<ul style="list-style-type: none"> • Built-in lockable storage for instruments (low built-in cubbies at instrumental music room entrance)

GENERAL AND INSTRUMENTAL MUSIC	
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Carpet in general music classroom
Display	<ul style="list-style-type: none"> • Two 8 ft. whiteboards, one with permanent musical staff lines (each room)
Student Furniture	<ul style="list-style-type: none"> • Eighty (80) stackable chairs for instrumental room • Twenty-six (26) stackable stools in general music room
Teacher Furniture	<ul style="list-style-type: none"> • Teacher desk/chair, possibly built into counters to save space
Other Furniture	<ul style="list-style-type: none"> • Eighty (80) music stands for instrumental room • Three (3) conductor's stands • Large Move and Store cart for music stands • Piano in general music room
Special Accommodations	<ul style="list-style-type: none"> • General music room needs open space for movement and varied activities • Sound deadening/soundproof walls • Acoustical divider built between platform and gymnasium • Instrumental lessons and large group ensembles require 48" of space per student
Classroom Technology	<ul style="list-style-type: none"> • Sound systems • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • One (1) teacher computer with access to high quality sound system control

PHYSICAL EDUCATION	
SPACE:	<p>Gymnasium: 6,000 square feet</p> <p>PE Office/Storage: 600 square feet (includes 140 s.f. office)</p> <p>Platform/Stage: 900 square feet</p>
Sinks	<ul style="list-style-type: none"> • Recessed drinking fountains located inside gymnasium
Access	<ul style="list-style-type: none"> • Capacity to hold entire student body, staff and faculty
Storage	<ul style="list-style-type: none"> • Folding seating/carts/storage for entire student body, staff and faculty (separate storage from PE equipment) • Storage area will have access from both the interior of the gymnasium, as well as the exterior of the building (for outdoor sports and playground activities); a roll-up exterior access door is desired • Six (6) shelving units (48"x18"x72") inside storage facility
Lighting	<ul style="list-style-type: none"> • Lighting with safety cages or equivalent
Flooring	<ul style="list-style-type: none"> • Synthetic rubberized "poured in place" floor system with essential markings • Protective matting

PHYSICAL EDUCATION	
Special Accommodations	<ul style="list-style-type: none"> • Sound deadening/soundproof walls including acoustical wall dividing platform (stage) from gymnasium • Clerestory windows with remote room darkening shade system • High ceiling, the lowest features should be a minimum of 22 ft. from the floor • Wall matting around entire perimeter, from height of wall base to 6'-0" minimum above finish floor • Removable wall matting along front of platform as well. • Two (2) main and four (4) side baskets for basketball (all adjustable for height and electrically operated) • Volleyball post recessed floor sleeves • Chinning bars • Horizontal bar • Divider curtain • Ceiling mounts for cargo nets and rope climbing • One wall to be designated for future climbing, wall mounted equipment, and the masonry cores filled with concrete • Two (2) sections of portable risers for use with the gymnasium platform (one on the gymnasium floor, and one on the platform) • Electric retractable bleacher seating; five (5) rows • Movable cart for storage/equipment • Two (2) AED with audible alarm box will be installed; one (1) in the public access hallway outside nurse's office, and one (1) outside the gymnasium
Classroom Technology	<ul style="list-style-type: none"> • One (1) teacher computer • Portable SMART Board system, or similar device for classroom instruction • Built-in sound system for assemblies and programs • Remote control screen with appropriate rear projection device

SCIENCE, TECHNOLOGY, ENGINEERING, ART, & MATHEMATICS (STEAM) LAB	
SPACE: 1,100 square feet	
NUMBER: One (1) classroom	
Sinks	<ul style="list-style-type: none"> • Three (3) stainless steel sinks with laminate counter tops • Soap and towel dispensers
Access	<ul style="list-style-type: none"> • In close proximity to general education classrooms and library media center
Classroom Storage	<ul style="list-style-type: none"> • Built-in bookcases (upper and lower) • Locked closet for audio-visual equipment and science equipment • Cabinets to be deep, with adjustable / removable shelving, and space for large bin storage. • Storage for student projects in process
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe • Two (2) lockable four-drawer filing cabinets
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile
Display	<ul style="list-style-type: none"> • Two-sided fully locked showcases on room's corridor wall • Magnetic whiteboard • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • Age-appropriate student furniture (26 students)
Teacher Furniture	<ul style="list-style-type: none"> • Teacher Desk/Chair
Other Furniture	<ul style="list-style-type: none"> • Thirteen (13) movable laboratory tables with grommets and integral wire management tray
Classroom Technology	<ul style="list-style-type: none"> • Large screen interactive projection system

SCIENCE, TECHNOLOGY, ENGINEERING, ART, & MATHEMATICS (STEAM) LAB	
Computers (each)	<ul style="list-style-type: none"> • Fifteen (15) student devices • Three (3) student computers • One (1) teacher computer

WORLD LANGUAGE CLASSROOM	
SPACE: 890 square feet (each)	
NUMBER: One (1) classroom	
Sinks	<ul style="list-style-type: none"> • Stainless steel sink with laminate counter • In-room water fountain • Soap and towel dispenser
Access	<ul style="list-style-type: none"> • Central location within classroom wing • Close proximity to TESOL office
Classroom Storage	<ul style="list-style-type: none"> • Unique storage needs for six (6) grades of curriculum materials • Built-in bookcases • Storage areas for many props, puppets, classroom library • Counters under windows where appropriate
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe • One (1) lockable four-drawer filing cabinet
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and area rugs
Display	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • Table and appropriate student seating for twenty-six (26)
Teacher Furniture	<ul style="list-style-type: none"> • Teacher desk/chair, possibly built into counters to save space
Classroom Technology	<ul style="list-style-type: none"> • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • Sufficient Chromebooks for each student • One (1) teacher computer

LIBRARY MEDIA CENTER	
SPACE: 2,600 square feet (includes 200 s.f. office for media staff and 200 s.f. work room with copier)	
Sinks	<ul style="list-style-type: none"> • Sink in media center workroom
Access	<ul style="list-style-type: none"> • Centrally located in the school • Access to outdoor garden area, desirable • Close proximity to STEAM lab, desirable
Storage	<ul style="list-style-type: none"> • Audio-visual storage cabinets • Over-size vertical filing cabinet • Storage/display for teacher resources and professional development materials
Teacher Storage	<ul style="list-style-type: none"> • One (1) lockable four-drawer filing cabinet
Lighting	<ul style="list-style-type: none"> • Remote control room darkening blinds
Flooring	<ul style="list-style-type: none"> • Wall to wall carpeting
Display	<ul style="list-style-type: none"> • Magnetic whiteboards • Bulletin Boards • Well-placed and secure space for displays and promotional materials
Student Furniture	<ul style="list-style-type: none"> • Tables and chairs with sleigh legs; easy to reconfigure • Computer furniture/workstations for six (6) student computers
Teacher Furniture	<ul style="list-style-type: none"> • Two (2) teacher desks/chairs; Two (2) adult visitors chairs

LIBRARY MEDIA CENTER	
Other Furniture	<ul style="list-style-type: none"> • 48-inch free standing, double-faced shelving for student print materials; on wheels for adjusting space layout • Comfortable lounge style seating – adult and student
Space Considerations	<ul style="list-style-type: none"> • Small tiered story corner • Area for independent study; separate area for whole class instruction • Maker Space area • Informal seating or an informal area with comfortable chairs • Space should be able to accommodate staff professional development activities
Classroom Technology	<ul style="list-style-type: none"> • Sufficient outlets to support all technology • Sound system for large group events • Online circulation system (2 circulation stations) • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • Six (6) student computers • One (1) Chromebook cart (class set) • Two (2) teacher computers

SMALL BREAKOUT ROOM	
<p>SPACE: 125 square feet (each) for individual assessment with teachers and/or small group work with para educators</p> <p>NUMBER: Two (2) rooms</p>	
Access	<ul style="list-style-type: none"> • In close proximity to general education classrooms
Teacher Storage	<ul style="list-style-type: none"> • Secured closet for testing materials
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile
Display	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin Board
Furniture	<ul style="list-style-type: none"> • One (1) table • Six (6) student chairs • One (1) teacher chair

READING/MATH COACH'S OFFICE	
<p>SPACE: 175 square feet (each) for meetings with teachers</p> <p>NUMBER: Two (2) rooms</p>	
Access	<ul style="list-style-type: none"> • In close proximity to media center and Literacy Lab
Teacher Storage	<ul style="list-style-type: none"> • Bookshelves, cabinets, lockable teacher wardrobe
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Carpet
Display	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin Board
Teacher Furniture	<ul style="list-style-type: none"> • Teacher desk, small table with four (4) chairs
Computers (each)	<ul style="list-style-type: none"> • Teacher computer

GENERAL EDUCATION INTERVENTION SERVICES – READING AND MATH	
SPACE: 500 square feet (each) for Reading and Math Intervention, each space to accommodate 2-3 adults working with small groups	
NUMBER: Two (2) rooms	
Sinks	<ul style="list-style-type: none"> • Stainless steel sink with laminate counters • Soap and towel dispenser
Access	<ul style="list-style-type: none"> • In close proximity to primary education classrooms and Reading/Math Coach offices
Classroom Storage	<ul style="list-style-type: none"> • Built-in bookcases • A supply closet with shelving installed in each room • Wall length countertop with wall storage cabinets and electrical strips. • Counters under windows where possible • Separate book closet in centralized location to classrooms
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe for three (3) adults • Two (2) lockable four-drawer filing cabinets
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and area rugs
Display	<ul style="list-style-type: none"> • Magnetic whiteboards • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • Differentiated student tables and chairs to accommodate K-5 students
Teacher Furniture	<ul style="list-style-type: none"> • One (1) Teacher desk/chair
Other Furniture	<ul style="list-style-type: none"> • Visitor’s chairs
Classroom Technology	<ul style="list-style-type: none"> • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • Five (5) student computers • One (1) teacher computer

TESOL OFFICE	
SPACE: 100 square feet	
NUMBER: One (1) room	
Access	<ul style="list-style-type: none"> • In close proximity to classrooms and World Language classroom
Teacher Storage	<ul style="list-style-type: none"> • Bookshelves, cabinets, lockable teacher wardrobe
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Carpet
Display	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin Board
Teacher Furniture	<ul style="list-style-type: none"> • Teacher desk, small table with four (4) chairs
Computers (each)	<ul style="list-style-type: none"> • Teacher computer

SPECIAL SERVICES PROGRAMS

PRE-SCHOOL PROGRAM

Based on current enrollment projections of 45 students, four classrooms of the Pre-school will be required to meet the needs of special education students. By design, and to meet the legal requirements for inclusive education, the classes include eligible students with special needs and at least equal numbers of typical same age peers. Like kindergarten children, these children will spend a lot of time on the floor for activities. All of the furnishings, toilet and sinks should be at a level appropriate for children aged three to five. These classrooms should have space to accommodate gross and fine motor activities as well as lessons and an area for the children to sit together as a group. The classroom needs to have ample space to accommodate children who use wheelchairs, standers or other adaptive equipment, and several adults.

PRE-SCHOOL CLASSROOM	
SPACE: 1,000 square feet (each) (includes 50 s.f. in-class toilet room)	
NUMBER: Four (4) classrooms	
Toilet	<ul style="list-style-type: none"> • Separate toilet room within classroom for ages 3-5 with shelves and extra storage space
Sinks	<ul style="list-style-type: none"> • Two (2) stainless steel sinks with laminate counters (one adult, one children) • Soap and towel dispenser
Access	<ul style="list-style-type: none"> • In close proximity to all PreK services
Classroom Storage	<ul style="list-style-type: none"> • Storage area for large equipment (adaptive chairs, prone standers, supine standers, walkers, gait trainers, therapy balls, etc.). • Built-in bookcases • Storage areas • Counters under windows where appropriate • Large drawer storage (posters, large books, etc.)
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe for three (3) adults • One (1) lockable four-drawer filing cabinet
Student Storage	<ul style="list-style-type: none"> • Coat and cubby storage for eighteen (18) students
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Carpet with vinyl tile near sink and toilet area
Display	<ul style="list-style-type: none"> • Whiteboard • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • PreK tables and chairs • Computer workstations
Teacher Furniture	<ul style="list-style-type: none"> • Teacher Desk/Chair
Other Furniture	<ul style="list-style-type: none"> • Center Instruction: three (3) small tables with four (4) chairs each • Activity Groups: one (1) table with six (6) chairs
Special Needs/Equipment	<ul style="list-style-type: none"> • Block carts • Easel • Play equipment for centers • Full-length mirror (Mylar)
Classroom Technology	<ul style="list-style-type: none"> • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • One (1) teacher computer • One (1) stationary adult computer • Five (5) student laptops

ABA CLASSROOM	
SPACE: 400 square feet	
NUMBER: One (1) room	
Sinks	<ul style="list-style-type: none"> • One (1) stainless steel sink with laminate countertops • Soap and towel dispenser
Access	<ul style="list-style-type: none"> • In the vicinity of PreK OT/PT classroom
Classroom Storage	<ul style="list-style-type: none"> • Built-in bookcases • Storage areas • Cabinets with large drawers • Counters under windows where appropriate
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Carpet with vinyl tile near sink
Display	<ul style="list-style-type: none"> • Whiteboard • Bulletin Boards

ABA CLASSROOM	
Special Needs/Equipment	<ul style="list-style-type: none"> • 60" flexible dividers, able to configure the room into four (4) separate areas • Full-length mirror (Mylar)
Computers (each)	<ul style="list-style-type: none"> • One (1) teacher computer

PRE-K O.T. / P.T. RESOURCE	
SPACE: 500 square feet	
NUMBER: One (1) room shared by two teachers	
Access	<ul style="list-style-type: none"> • Adjacent to PreK parent drop-off area
Classroom Storage	<ul style="list-style-type: none"> • Storage for large equipment (large adaptive chairs, prone standers, supine standers, large walkers, gait trainers, large therapy balls, etc.) • Built-in bookcases, storage areas, large-drawer storage • Built-in bookcases • Storage areas • Counters under windows where appropriate
Teacher Storage	<ul style="list-style-type: none"> • Two (2) lockable teacher storage wardrobes • Two (2) lockable four-drawer filing cabinets
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Carpeted
Display	<ul style="list-style-type: none"> • Whiteboard • Bulletin Board
Student Furniture	<ul style="list-style-type: none"> • Pupil tables and chairs (adjustable - movable)
Teacher Furniture	<ul style="list-style-type: none"> • Two (2) teacher desk/chair
Other Furniture	<ul style="list-style-type: none"> • Activity Groups: One (1) small table with four (4) chairs • One (1) adult size visitor's chair
Special Needs/Equipment	<ul style="list-style-type: none"> • Full length mirror (Mylar) • Swing mounted from ceiling
Computers (each)	<ul style="list-style-type: none"> • Two (2) teacher computers

PRE-K SPEECH LANGUAGE	
SPACE: 250 square feet (each)	
NUMBER: One (1) room	
Access	<ul style="list-style-type: none"> • Adjacent to PreK OT/PT areas and PreK parent drop-off area
Classroom Storage	<ul style="list-style-type: none"> • Built-in bookcases • Storage areas • Counters under windows where appropriate
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe • One (1) lockable built-in four-drawer filing cabinet
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and area rugs
Display	<ul style="list-style-type: none"> • Whiteboard • Bulletin Board
Student Furniture	<ul style="list-style-type: none"> • Pupil tables and chairs (adjustable and movable)
Teacher Furniture	<ul style="list-style-type: none"> • Teacher Desk/Chair
Other Furniture	<ul style="list-style-type: none"> • Activity Groups: One (1) table with six (6) chairs • Adult size visitor's chair • Play equipment for centers • Full length mirror (Mylar)
Computers (each)	<ul style="list-style-type: none"> • One (1) teacher computer

PRE-K PSYCHOLOGIST OFFICE	
SPACE: 300 square feet	
NUMBER: One (1) room including adjoining office for secretary	
Access	<ul style="list-style-type: none"> • In close proximity to PreK entrance
Storage	<ul style="list-style-type: none"> • Bookshelves, cabinets, two (2) lockable wardrobes
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Carpet
Display	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin Board
Office Furniture	<ul style="list-style-type: none"> • Two (2) desks, table with four (4) chairs; countertops • Fireproof, lockable student files
Technology	<ul style="list-style-type: none"> • Two (2) Phones
Computers (each)	<ul style="list-style-type: none"> • Teacher computer • Secretary computer

Grades K-5 Special Services Programs

FUNCTIONAL ACADEMIC SKILLS EDUCATION [F.A.S.E.]	
SPACE: 890 square feet	
NUMBER: One (1) classroom for 4-8 students	
Toilet	<ul style="list-style-type: none"> • Toilet facility with changing table and storage
Sinks	<ul style="list-style-type: none"> • Stainless steel sink with laminate counter • Soap and towel dispenser
Access	<ul style="list-style-type: none"> • Close proximity to OT/PT room
Classroom Storage	<ul style="list-style-type: none"> • Built-in bookcases, storage areas, large-drawer storage • Storage areas • Counters under windows where possible
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe for three (3) adults • Two (2) lockable four-drawer filing cabinet
Student Storage	<ul style="list-style-type: none"> • 15 coat hooks/storage • Cubby storage for 15 students
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and area rugs
Display	<ul style="list-style-type: none"> • Magnetic whiteboards • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • Table and appropriate student furniture
Teacher Furniture	<ul style="list-style-type: none"> • Teacher Desk/Chair
Other Furniture	<ul style="list-style-type: none"> • Center instruction: Three (3) small tables with four (4) chairs • Activity Groups: Two (2) tables with six (6) chairs • Adult visitor chair
Special Needs/Equipment	<ul style="list-style-type: none"> • Separate area for calming, de-stress • Staff work area (for teachers, aides, conferences)
Classroom Technology	<ul style="list-style-type: none"> • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • One (1) teacher computer • Two (2) student computers

SPECIAL EDUCATION RESOURCE	
SPACE 700 square feet (each)	
NUMBER: Four (4) classrooms (each to be shared by two resource teachers)	
Sinks	<ul style="list-style-type: none"> • Stainless steel sink with laminate counter • Soap and towel dispenser
Access	<ul style="list-style-type: none"> • Close proximity to general education classrooms and to each other • Close proximity to related services (SW/Psych/SLH), preferred
Classroom Storage	<ul style="list-style-type: none"> • Built-in bookcases • Storage areas • Counters under windows where possible
Teacher Storage	<ul style="list-style-type: none"> • Lockable teacher storage wardrobe for two (2) adults • Two (2) lockable four-drawer filing cabinets • Access to shared testing materials
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and area rugs
Display	<ul style="list-style-type: none"> • Magnetic whiteboards • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • Student tables/chairs (adjustable/movable)
Teacher Furniture	<ul style="list-style-type: none"> • Two (2) Teacher desks/chairs
Other Furniture	<ul style="list-style-type: none"> • Adult visitor's chairs • Activity Groups: Two (2) tables with six (6) chairs (each) • Portable dividers
Classroom Technology	<ul style="list-style-type: none"> • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • Two (2) teacher computers • Four (4) student computers

K-5 O.T./P.T. RESOURCE	
SPACE: 500 square feet	
NUMBER: One (1) room shared by two (2) staff	
Sinks	<ul style="list-style-type: none"> • Stainless steel sink with laminate counters • Soap and towel dispenser
Access	<ul style="list-style-type: none"> • Adjacent to PreK OT/PT Resource
Classroom Storage	<ul style="list-style-type: none"> • Storage for large equipment (large adaptive chairs, prone standers, supine standers, large walkers, gait trainers, large therapy balls, etc.) • Built-in bookcases, storage areas, large-drawer storage • Open shelving and counter area • Counters under windows where possible
Teacher Storage	<ul style="list-style-type: none"> • Two (2) lockable teacher storage wardrobes • Two (2) lockable built-in four-drawer filing cabinets
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and area rugs
Display	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin Boards
Student Furniture	<ul style="list-style-type: none"> • Small tables with student chairs
Teacher Furniture	<ul style="list-style-type: none"> • Two (2) Teacher desk/chair workstations
Other Furniture	<ul style="list-style-type: none"> • Adult visitor chairs
Special Needs/Equipment	<ul style="list-style-type: none"> • Trampoline, Balance Beam, Swing, Stairs, Floor Mats • Area for gross motor activities.
Computers	<ul style="list-style-type: none"> • Two (2) teacher computers

K - 5 RELATED SERVICES – SOCIAL WORKER/PSYCHOLOGIST/SPEECH	
SPACE: 600 square feet (total)	
NUMBER: Three (3) offices @ 200 s.f. each: Social Worker; Psychologist; K-5 Speech/Language Pathologist	
Access	<ul style="list-style-type: none"> • Close proximity to the main office and sped resource rooms • Consider these offices as a suite with common area
Storage	<ul style="list-style-type: none"> • One (1) lockable built-in four-drawer filing cabinet (each office) • Bookcase and shelving • Walk-in supply closet (common area) • Laminate counters and shelving (common area)
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Wall to wall carpeting
Display	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin Board
Teacher Furniture	<ul style="list-style-type: none"> • Teacher desk/chair (each office)
Other Furniture	<ul style="list-style-type: none"> • Two (2) adult chairs (each office) • One (1) table, with 6 student chairs (each office) • Small play area
Special Needs/Equipment	<ul style="list-style-type: none"> • Built-in mirror (Speech only)
Computers	<ul style="list-style-type: none"> • One (1) teacher computer (each office)

ELEMENTARY SPED COORDINATOR OFFICE/BCBA	
SPACE: 150 square feet	
NUMBER: One (1) room	
Access	<ul style="list-style-type: none"> • In close proximity to special education teachers and conference room
Teacher Storage	<ul style="list-style-type: none"> • Bookshelves, cabinets, lockable teacher wardrobe
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Carpet
Display	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin Board
Teacher Furniture	<ul style="list-style-type: none"> • Two (2) Teacher desks
Classroom Technology	<ul style="list-style-type: none"> • Two (2) Phones
Computers (each)	<ul style="list-style-type: none"> • Two (2) Teacher computers

ADMINISTRATION AND SUPPORT SERVICES

Unless otherwise noted, the standard furnishings for every area noted below are expected to include the following:

- Room darkening shades
- Acoustical insulation for soundproofing
- Year-round air conditioning
- ADA compliant building standards
- Wireless/internet access
- Multiple electric outlets
- Telephone

PRINCIPAL’S OFFICE	
SPACE: 200 square feet	
Access/Location	<ul style="list-style-type: none"> • Close proximity to secretary’s workstation and conference room

PRINCIPAL'S OFFICE	
Storage	<ul style="list-style-type: none"> • One (1) large wall unit bookcase • Lockable lateral files
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Wall to wall carpeting
Office Furniture	<ul style="list-style-type: none"> • Desk/Chair • Visitor's seating for six (6)
Other Accommodations	<ul style="list-style-type: none"> • Bulletin board • Private lavatory
Technology	<ul style="list-style-type: none"> • Polycom telephone • Building security system monitor • Security "panic" button with dedicated phone line
Computers	<ul style="list-style-type: none"> • One (1) laptop with docking station

ASSISTANT PRINCIPAL'S OFFICE	
SPACE: 175 square feet	
Access/Location	<ul style="list-style-type: none"> • Close proximity to Main Office and conference room
Storage	<ul style="list-style-type: none"> • One (1) large wall unit bookcase • Lockable lateral files
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Wall to wall carpeting
Office Furniture	<ul style="list-style-type: none"> • Desk/Chair • Visitor's seating for six (6)
Other Accommodations	<ul style="list-style-type: none"> • Bulletin board
Technology	<ul style="list-style-type: none"> • Polycom telephone • Building security system monitor • Security "panic" button with dedicated phone line
Computers	<ul style="list-style-type: none"> • One (1) laptop with docking station

MAIN OFFICE (SECRETARIAL AREA)	
SPACE: 700 square feet	
Access/Location	<ul style="list-style-type: none"> • Adjacent to principal's office • Main hallway wall should have multiple windows, and the Main Office should be able to view main entranceway of school and bus traffic • Connecting door between office and health suite • Staff lavatories should be adjacent to office
Storage	<ul style="list-style-type: none"> • Safe • Staff mailboxes within main office area • Base and wall cabinets with counter space • Fire-proof, lockable files for student confidential records
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Wall to wall carpeting
Office Furniture	<ul style="list-style-type: none"> • Secretarial workstations (2) • Secretarial chairs (2) • Additional worktable/counter area • Visitor's seating
Other Accommodations	<ul style="list-style-type: none"> • Bulletin boards • Closet for coats • Kitchenette counter, small refrigerator, sink, microwave

MAIN OFFICE (SECRETARIAL AREA)	
Technology	<ul style="list-style-type: none"> • Network copier/fax machine • Building security system monitor (secretary/clerk) • Security “panic button with dedicated phone line (secretary/clerk) • Radio charging station • Parent access Kiosk computer
Computers (each)	<ul style="list-style-type: none"> • Two (2) computers

CONFERENCE ROOM	
SPACE: 200 square feet each	
NUMBER: Two (2) rooms	
Access/Location	<ul style="list-style-type: none"> • One adjacent to Main Office/Principal’s Office and one within PreK wing
Storage	<ul style="list-style-type: none"> • One (1) credenza
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Wall to wall carpeting
Office Furniture	<ul style="list-style-type: none"> • Conference Table • Seating for ten (10)
Other Accommodations	<ul style="list-style-type: none"> • Magnetic whiteboard • Bulletin board
Technology	<ul style="list-style-type: none"> • Polycom telephone • Large screen interactive projection system
Computers (each)	<ul style="list-style-type: none"> • One (1) computer

HEALTH SERVICES	
SPACE: 650 square feet	
Toilet	<ul style="list-style-type: none"> • Oversized accessible toilet room with changing table
Sink	<ul style="list-style-type: none"> • Sink with foot pedal controls (outside Toilet room) • Sink with eye wash
Access/Location	<ul style="list-style-type: none"> • Access to main office for assistance during times of emergency • Access through main corridor • Access to natural light; windows
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile
Storage	<ul style="list-style-type: none"> • Lockable cabinets for medication • Three (3) four-drawer lockable filing cabinets • Closet and extra storage for materials
Office Furniture	<ul style="list-style-type: none"> • Desk/chair facing room entry • Bookcase • Table for testing/conferences (private) • Four (4) student chairs for waiting area
Space Considerations	<ul style="list-style-type: none"> • Recovery area with 2 cots with privacy curtains • Private space where nurse can speak privately with students/parents • Examination room • 25-ft space to conduct vision screenings • Waiting area for students
Medical Equipment	<ul style="list-style-type: none"> • Wheelchair/evac chair • Magnifying lamp • Rolling cart (portable emergency cart) • Examination table

HEALTH SERVICES	
Other Accommodations	<ul style="list-style-type: none"> • AED with audible alarm box will be installed in the public access hallway. • Refrigerator with separate frost-free freezer compartment
Technology	<ul style="list-style-type: none"> • Two (2) telephones with direct access to an outside line and ability to access classrooms; separate phone for student use • Portable phone for nurse • Fax machine • Printer
Computers	<ul style="list-style-type: none"> • One (1) computer

GUIDANCE COUNSELOR'S OFFICE	
SPACE: 200 square feet	
Access/Location	<ul style="list-style-type: none"> • Close proximity to classrooms
Storage	<ul style="list-style-type: none"> • One (1) large wall unit bookcase • Lockable lateral files
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Wall to wall carpeting
Office Furniture	<ul style="list-style-type: none"> • Desk/Chair • Visitor's seating for six (6)
Other Accommodations	<ul style="list-style-type: none"> • Bulletin board
Technology	<ul style="list-style-type: none"> • telephone
Computers	<ul style="list-style-type: none"> • One (1) laptop with docking station

TEACHER WORKROOM	
SPACE: 440 square feet	
Sink	<ul style="list-style-type: none"> • Stainless steel sink with laminate counter tops • Soap and towel dispenser
Access/Location	<ul style="list-style-type: none"> • Close proximity to Main Office area
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile
Storage	<ul style="list-style-type: none"> • Shelving • Locked cabinet
Furniture	<ul style="list-style-type: none"> • Table and six (6) chairs
Other Accommodations	<ul style="list-style-type: none"> • Die press (letter cutting machine) • Laminating machine • General office supplies
Technology	<ul style="list-style-type: none"> • Network copier/fax machine/scanner
Computers	<ul style="list-style-type: none"> • One (1) teacher computer

FOOD SERVICES – CAFETERIA	
SPACE: 2,400 square feet <i>(Based on 4 lunch waves: 25% enrollment x 17.5 square feet)</i>	
Access/Location	<ul style="list-style-type: none"> • Adjacent to full kitchen and serving area • Exits to outdoors • Close proximity to playground and fields
Lighting	<ul style="list-style-type: none"> • Soft color, dimmable lighting
Flooring	<ul style="list-style-type: none"> • Resilient rubber flooring – needs to be easy to sweep and mop
Storage	<ul style="list-style-type: none"> • Storage room to accommodate tables/benches and chairs

FOOD SERVICES – CAFETERIA	
Furniture	<ul style="list-style-type: none"> • Folding roll-away tables/benches, long type with built-in seating, to accommodate projected number of students in a lunch wave plus 25% • Chair and desk for paraprofessional/cafeteria supervisor
Other Accommodations	<ul style="list-style-type: none"> • Recessed drinking fountains • Sound reducing measures • Soundproof divider between kitchen and cafeteria • Bulletin boards
Technology	<ul style="list-style-type: none"> • Localized public address system – must integrate with building system • Screen and projection device (matrix of flat panel LED’s or multi-cast to multiple LED’s) for Professional Development activities • Electronic Signage sized appropriately for the space • WIFI – full coverage

FOOD SERVICES – KITCHEN	
<p>SPACE: 1,100 square feet – Kitchen 100 square feet – Food Manager’s Office</p>	
Toilet	<ul style="list-style-type: none"> • Locker room for five (5) with adjacent unisex toilet room
Sink	<ul style="list-style-type: none"> • One (1) three bay sink with drain board • One (1) double well stainless-steel produce sink • One (1) triple well stainless-steel pot wash sink • Three (3) hand sinks with soap and towel dispensers
Access/Location	<ul style="list-style-type: none"> • In close proximity to Gymnasium
Lighting	<ul style="list-style-type: none"> • Task lighting over preparation areas
Flooring	<ul style="list-style-type: none"> • Epoxy flooring – stable non-slip surface, must be easy to sweep and mop • Appropriately pitched floor with multiple floor drains and water source for custodial purposes.
Storage	<ul style="list-style-type: none"> • Safe • Four (4) stainless steel utility carts, three shelves, #300/#400 capacity • Two (2) stainless steel cart for tray storage, ADA accessible • Adequate space for annual supplies
Furniture	<ul style="list-style-type: none"> • Teacher desk/chair • Visitor’s chair
Space Considerations (required)	<ul style="list-style-type: none"> • Large walk-in storeroom with heavy-duty wire mesh chrome-mate shelving on casters • Dishwasher room with necessary utilities (racks and tray carts) • High capacity appropriate commercial grade dishwasher • Separate area for the cashier to count money with a safe • Two (2) serving lines with built-in hot and cold units • Can washing area (outside, near dock – custodial)

FOOD SERVICES – KITCHEN	
Food Services Equipment	<ul style="list-style-type: none"> • One (1) slicer on stand • One (1) 30-gallon mixer • One (1) combi-oven (steam/convection) example Alto-shaam • One (1) commercial microwave oven • One (1) double-stack convection ovens with stand: single one-over-one unit (equals 2 ovens) • One (1) small double kettles • One (1) food processor (Robo Coupe) • Two (2) food warmers • Walk-in freezer, minimum 144 square ft. with shelving • Walk-in refrigerator, minimum 144 square ft. with shelving • Two (2) pass-thru refrigerator near serving line • Steam table with five (5) wells • Cold well in serving line for fruits, vegetables and salads • Three (3) preparation tables (stainless steel) • Milk cooler • Ice cream freezer • Exhaust fans (ventilation) for ovens, skillet, stove, etc. • Exhaust fans (ventilation) in washroom and pantry areas
Technology	<ul style="list-style-type: none"> • Three (3) cash registers and stands (point of sale system – including data drops) • One (1) computer (Food Services Office - requires data drop) • One (1) multi-function printer (Food Services Office – requires data drop) • Two (2) telephones (one in Manager’s Office and one in Kitchen Prep Area (amplified ringers))

FACULTY LOUNGE	
SPACE: 600 square feet	
Toilet	<ul style="list-style-type: none"> • Faculty toilets adjacent to faculty lounge
Sink	<ul style="list-style-type: none"> • Stainless steel sink with laminate counter • Soap and towel dispenser
Access/Location	<ul style="list-style-type: none"> • Close proximity to the major instructional section of the school and literacy Lab
Lighting	<ul style="list-style-type: none"> • Provide windows and maximize natural light
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile and carpeting
Storage	<ul style="list-style-type: none"> • Built-in upper and lower cabinets
Furniture	<ul style="list-style-type: none"> • Soft seating • Tables and seating for twenty (20) people
Equipment	<ul style="list-style-type: none"> • Microwave oven • Refrigerator • Coffee maker

CUSTODIAL OFFICE	
SPACE: 150 square feet	
Toilet	<ul style="list-style-type: none"> • Locker room for four (4) with adjacent unisex toilet room
Access/Location	<ul style="list-style-type: none"> • In close proximity to Cafeteria; loading/receiving dock/mechanical room
Flooring	<ul style="list-style-type: none"> • Vinyl enhanced tile
Storage	<ul style="list-style-type: none"> • Locked cabinet • Storage for outdoor equipment (separate space)
Furniture	<ul style="list-style-type: none"> • Desk/Chair • Three (3) adult chairs

CUSTODIAL OFFICE	
Computers	• One (1) computer

STORAGE
<p>SPACE: 800 square feet – Instructional Storage (Literacy Lab; K-1 storage; 2-3 storage; 4-5 storage) 600 square feet – General Storage</p> <p>(These storage spaces are separate from custodial storage spaces for supplies and equipment; accounted for in CORE Factor.)</p>

VIII. COMMUNITY USE

The community uses Madison elementary schools before and after school hours. Some of the groups that regularly use the facilities include:

- | | |
|--|---|
| <ul style="list-style-type: none"> • Madison Parks and Recreation Department • Scouting organizations • Civic organizations • Municipal boards and groups • Adult Education | <ul style="list-style-type: none"> • PTO • Registrar of Voters • Religious education classes |
|--|---|

IX. ENVIRONMENT – SYSTEMS – EQUIPMENT
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SYSTEM	SPECIFICATIONS
Building Systems	<ul style="list-style-type: none"> • The building systems incorporated into the new construction will be designed in accordance with Connecticut High Performance Building standards, equivalent in performance to a LEED Silver rating.
Heating/Cooling (HVAC) System	<ul style="list-style-type: none"> • Heating & cooling should be produced with natural gas with a boiler for heating and roof top DX cooling. Consider including Geo-thermal wells for energy efficiency. • All spaces are to receive air conditioning, but only those areas with summertime use will have the systems running year-round; all other areas will have systems set to dehumidification only during summer months. • In-line water heaters for domestic hot water shall be provided during non-heating season usage. • Use in-slab hydronic heat delivery at the lower levels for PreK and Kindergarten classrooms. • Energy recovery units, VFD fan systems and pumps to be utilized in the design. • Perimeter heating will be provided by fin tube radiation and the possible use of ceiling mounted radiant panels, cooled by a VAV system with each room served by a dedicated VAV box and hydronic reheat coil. • The use of “chill beams” will be considered for general heating and cooling. Designer to provide additional information on chill beam systems to Owner. • The gymnasium/auditorium and cafeteria will be served by separate variable speed air handlers. Air handlers shall include a hot water heating coil and DX cooling coils.

SYSTEM	SPECIFICATIONS
Climate Controls/ Ventilation System	<ul style="list-style-type: none"> • The building will be designed with Direct Digital Control (DDC) systems (Alerton or Automate logic) centrally tied into the School Facilities Department via Graphical User Interface. • Spaces should have independent, on demand heating, cooling and ventilation control for operational efficiency. • Each classroom will be provided with a temperature sensor and carbon dioxide sensor. The carbon dioxide sensor is an energy saving device. By sensing the carbon dioxide within the room, the outside air intake is adjusted, reducing the amount of outside air being heated or cooled, resulting in less energy used. • Climate controls/ventilation systems need to meet current codes and standards. • MDF and IDFs must be climate controlled (A/C)
Lighting System	<ul style="list-style-type: none"> • Efficient and appropriate natural lighting will be maximized within the facility as appropriate for the programmatic use of the spaces. • Motion sensors and dual switching will be installed in classrooms. • The use of LEDs throughout, with exceptions in specialty areas. • Attention should be given to security lighting for both interior and exterior of the building. • Emergency back-up will be via local battery ballasts. • The use of light shelves and light sensors for natural light to reduce electrical load shall be considered in locations where possible.
Electrical (Power) System	<ul style="list-style-type: none"> • Power to be provided by local utility company. • Consider solar roof mounted. • Distribution will include customer metering. • Emergency (whole building) generator to accommodate Life Safety needs. • Generator must be sufficient to support critical IT equipment in MDF and all IDFs as well as administrative offices and Nurse’s office. • Generator must support critical kitchen equipment with the intention being to cook, serve, and store food. (Hoods, ovens, serving line, freezer, refrigeration, etc.)
Technology	<ul style="list-style-type: none"> • There shall be a combined voice/data system with “VOIP” (Voice Over Internet Protocol) design. • The school shall have wall mounted, interactive LED devices in every classroom and meeting space. • Video streaming devices in every classroom and meeting space. • iPad and or Chrome Book charging stations in every room. • Multiple data drops with sufficient power in every classroom and meeting space. • Latest generation full WIFI coverage throughout the entire building. • Shared printing stations to support multiple classrooms in convenient locations throughout the building. • Head end equipment to be housed in an MDF with 24-hour environmental control. • All IDF closets require 24-hour environmental control. • Horizontal cabling shall be Category 6e plenum rated or contemporary equivalent. • Cable shall be run in corridors to support horizontal cable structure. • Fiber backbone between the MDF and IDF rooms shall be capable of at least 10GB minimum anticipating future growth. • Fiber optical cable from street to MDF also must support 10 GB as well as anticipate future growth. • Office space and workspace for Technology Personnel with sufficient data drops and power to support technology in the building. • Storage for Technology Department is critical.

SYSTEM	SPECIFICATIONS
Security	<ul style="list-style-type: none"> • Digital video surveillance of exterior/interior areas of the building integrated with District system. • Electronic security system with keypad access control installed into the school. • Design the plan to prevent access to instructional areas of the school when community events take place in assembly areas during non-school hours. • Motion sensors shall be mounted in corridors. • Respond to future state and/or federal mandates related to security requirements for elementary facilities (i.e. panic button systems) • Door locks shall be Sargent and integrated with existing MPS system.
Phone System	<ul style="list-style-type: none"> • A comprehensive, district-integrated phone system (dial-out) will be integrated into technology scope of the project, including hands-free and handle options. • Must be capable of reporting originating room identification as part of E911 call. • Install phones in every room of the facility occupied by teachers or students at any given time, including all meeting, support and instructional spaces. • Provide Voice Over “IP” options.
Public Address	<ul style="list-style-type: none"> • The building’s public address system is comprehensive and will be addressed as part of the technology component of the project to incorporate internal building communications as well as external communications. • The PA system should be developed in conjunction with the phone, clock, data, voice and DIVOS video distribution system of the school. • Secondary access to security and public address systems will be located in the MDF/Head End Room.
Clocks	<ul style="list-style-type: none"> • Clocks, similar to the phone system will be integrated into the technology component of the project. • All support and instructional spaces will be included. • System to have manual override capability in the event that Daylight Saving Times are adjusted by the Federal Government.
Plumbing System	<ul style="list-style-type: none"> • Plumbing fixtures/system will be designed per current and applicable codes. • Fixtures will be self-operating • Plastic piping to be considered for domestic water and heating where possible. • Floor drains in gang toilet areas • Plumbed for full whole building sprinkler system
Fire Protection	<ul style="list-style-type: none"> • Building will be fully protected by a sprinkler system installed per NFPA 13. • Waterless fire suppression systems required in MDF and IDFs with appropriate redundant detection.
Fire Alarm	<ul style="list-style-type: none"> • The building will be protected by a fully addressable analog, manual and automatic fire alarm system. MPS use Notifier fire system in all schools.
Acoustics	<ul style="list-style-type: none"> • The building will comply with ANSI S12.60-2002: Acoustical Performance Criteria, Design Requirements and Guidelines for Schools. • Suspended acoustical ceilings and/or acoustical decks will be installed throughout the building. • Corridor walls should be constructed of glazed concrete masonry units, or materials with a comparable NRC rating, and provide an adequate separation for sound control. • In specialized areas, such as media centers, appropriate acoustical treatments will be installed. • Sound field system will be provided in each classroom.
Windows/Doors	<ul style="list-style-type: none"> • Windows should be high efficiency, non-operational type with low e-glazing. • Emergency egress windows and rated doors will be installed in accordance with applicable codes. • Consider key fobs, thumb latches, vision panels – review with District and integrate with security section. • Door locks shall be Sargent and integrated with existing MPS system.

X. SITE DEVELOPMENT

There will be three primary entrance areas to the building: (1) the Main Entrance for visitors and parent drop off/pick up; (2) K-5 student entrance for bus drop-off/pick up; (3) PreK entrance with separate bus loop. Passive security measures, such as visual control of the entrances from the adjacent office area, must be planned for. Active security measures and systems will be developed with the building design. Adequate lighting for monitoring activities and ensuring safety are of paramount importance at the building entrances. Each entrance area should accommodate a separate bus loading and parent drop-off area. Entry overhangs or covered walkways will be provided for inclement weather to the extent practicable.

Bus loading areas should be configured as a one-way drive in a direction to assure that loading and unloading of students occurs from the right-hand side of the vehicle adjacent to the building. The drive will have two lanes: one for travel, and one for stopping and unloading. The bus loading driveway should be located such that buses exit upstream of automobiles, thereby reducing delays.

Parent drop-off areas will also be configured as a one-way drive in a direction to ensure that loading and unloading of students occurs from the right-hand side of the vehicle adjacent to the building. Student drop-off and pick-up areas are to be separated from the bus loading area, and preferably should be separate from other parking lots.

A Receiving/loading dock should accommodate 18-wheeler vehicles and should be located in such a way as not to interfere with primary entrance areas yet be close to kitchen/custodial area.

Parking for staff and visitors will be developed to take the multiple uses of the building into account. In determining the size and location of the parking lots, consideration will be given to the use of the building for community access as well as student safety. ADA and other code requirements will be addressed in the design of parking.

Sidewalks will be featured around the perimeter of the school and shall be concrete with monolithic concrete curbing. Access to the parking lots, playfields, bus and parent pickup/drop-off areas, and access for student walkers will be addressed. Sidewalks should be designed to accommodate students who walk or ride bicycles to school. The number of driveways that are crossed by sidewalks should be eliminated/minimized as much as practicable.

Playgrounds will include paved (dry) play areas, replacement baseball and soccer fields, and new playscape equipment. PreK and Kindergarten play areas should be located in close proximity to their classrooms. Intermediate play areas should be located away from classroom areas, and in close proximity to the gymnasium.

Playfields, parking, service drives, drop-off zones and bus zones should be located to reduce the cost of connecting elements without requiring pedestrians to cross vehicular traffic lanes. The location of driveways, walkways and landscaping must permit adequate sight distances for both vehicles and pedestrians.

Site utilities and physical plant components, including drives and access roads, will be located to avoid conflict with student and vehicular traffic, as well as the planned future growth of building components.

Landscaping will be designed to allow the school to blend with the environment as well as to provide passive cooling and windbreaks when possible. Trees and other greenery will be of a hearty variety and require little maintenance and which complement the building and site. Trees will be planted a sufficient distance from the building to avoid future maintenance problems. Consideration will be given to safety and security when placing foliage around walkways and areas of building access.

JEFFREY ELEMENTARY ED SPECS SPACE SUMMARY				
Room Description	# of Students Per Room	Required # of Rooms	Square Feet Per Room	Total Area (Sq. Feet)
GENERAL EDUCATION PROGRAMS				
Early Childhood: Full-Day Kindergarten	16-20	5	1,100	5,500
Early Elementary: Grade 1 and 2	16-20	9	940	8,460
Intermediate: Grades 3-5	19-24	11	890	9,790
Visual Arts – Classroom	16-24	1	1,100	1,100
Visual Arts - Kiln Room and Storage		1	350	350
Music - Choral Room/General Music	16-24	1	1,000	1,000
Physical Education - Gymnasium		1	6,000	6,000
Physical Education - Office and Storage		1	600	600
Platform (Stage) Instrumental Music		1	900	900
STEAM Classroom	16-24	1	1,100	1,100
World Language Classroom	16-24	1	890	890
Media Center		1	2,600	2,600
Reading/Math Coach Office		2	175	350
Small group breakout rooms	1-5	2	125	250
General Ed. Intervention Services (Math)	6-8	1	500	500
General Ed. Intervention Services (Reading)	6-8	1	500	500
TESOL Office		1	100	100
Total				39,990
SPECIAL EDUCATION PROGRAMS				
PreK Classroom	16-18	4	1,000	4,000
Pre-K ABA Classroom		1	400	400
PreK OT/PT		1	500	500
PreK Speech		1	250	250
PreK Psychologist Office		1	300	300
FASE Classroom	4-8	1	890	890
Special Education Resource Room	4-8	4	700	2,800
OT/PT Resource Room		1	500	500
Related Services (Social Worker/Psychologist/Speech)		1	600	600
Elementary SPED Coordinator/BCBA		1	150	150
Total				10,390
ADMINISTRATION AND SUPPORT FACILITIES				
Principal's Office		1	200	200
Assistant Principal's Office		1	175	175
Main Office Secretarial Area		1	700	700
Guidance Counselor's Office		1	200	200
Conference Room		2	200	400
Health Services		1	650	650
Teacher Workroom		1	440	440
Food Services – Cafeteria		1	2,400	2,400
Food Services – Kitchen and Manager's Office		1	1,200	1,200
Faculty Lounge		1	600	600
Custodial Office Area		1	150	150

September 3, 2021

Instructional Storage (Literacy Lab, K-1, 2-3, 4-5 storage)		1	800	800
General Supply Storage		1	600	600
Total				8,515
Total Program Area				58,895*

Building Gross Square Feet: 82,453 square feet
Estimated Building Area: 78,527 square feet
Space Standard Building Area: 74,867 square feet
***Exceedance:** 3,659 square feet

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21-22 MADISON PUBLIC SCHOOLS EXPENDITURE
BOE MEETING 9.14.2021

FOR 2022 12

	ORIGINAL APPROP	TRANFRS/ADJSTMTS	REVISED BUDGET	YTD EXPENDED	ENC/REQ	AVAILABLE BUDGET	PCT USED
51000 NEW STAFF AREA I	-153,266	0	-153,266	.00	.00	-153,266.00	.0%
51060 REDUCTION/BUDGET	-218,250	0	-218,250	.00	.00	-218,250.00	.0%
51109 11TH COURSE STIPENDS	15,000	0	15,000	.00	.00	15,000.00	.0%
51110 TEACHERS	23,181,293	6,104	23,187,397	920,225.34	21,417,424.41	849,747.66	96.3%
51111 ADMINISTRATORS	2,120,192	0	2,120,192	439,085.66	1,679,623.34	1,483.25	99.9%
51112 EPED	214,812	0	214,812	.00	207,550.00	7,262.00	96.6%
51113 CO CURRICULAR	450,325	0	450,325	.00	179,987.25	270,337.61	40.0%
51114 EARLY RETIREMENT	234,008	-6,104	227,903	.00	.00	227,903.38	.0%
51116 DIRECTORS / MANAGERS	361,052	0	361,052	280,177.71	80,874.25	.19	100.0%
51120 OFFICE STAFF	1,560,605	0	1,560,605	193,926.50	1,358,181.56	8,496.77	99.5%
51121 INSTRUCTIONAL PARAPROFESSIOA	2,045,831	0	2,045,831	20,183.66	1,872,261.93	153,385.88	92.5%
51122 CUSTODIANS	1,655,737	0	1,655,737	68,116.41	1,535,610.86	52,010.22	96.9%
51123 MEDIA / TECH PARAPROFESSIONAL	290,192	0	290,192	18,581.58	223,915.84	47,694.34	83.6%
51124 SECURITY / SUSPENSION	420,580	0	420,580	193,416.84	227,180.53	-17.51	100.0%
51126 SCHOOL HEALTH SERVICES	368,467	0	368,467	10,793.57	337,329.67	20,343.90	94.5%
51127 EVENT STAFF	16,490	0	16,490	.00	.00	16,490.00	.0%
51128 ATHLETIC TRAINER	41,649	0	41,649	1,983.30	39,666.03	.00	100.0%
51129 ATTENDANCE INCENTIVE	13,500	0	13,500	.00	.00	13,500.00	.0%
51130 THERAPISTS / OCCUP & PHYS	419,405	0	419,405	16,281.58	400,650.16	2,473.07	99.4%
51210 SUBSTITUTE TEACHERS	381,900	0	381,900	59,871.73	232,580.00	89,448.27	76.6%
51212 SUBS / SCHOOL HEALTH SERVICES	16,320	0	16,320	.00	.00	16,320.00	.0%
51221 CLASSIFIED SUBS	14,000	0	14,000	339.69	.00	13,660.31	2.4%
51320 OVERTIME	72,870	0	72,870	22,290.22	.00	50,579.78	30.6%
51321 CUSTODIAL/CASUAL LABOR	93,806	0	93,806	41,112.07	.00	52,693.93	43.8%
52130 LIFE INSURANCE	49,950	0	49,950	11,700.87	-7,369.38	45,618.51	8.7%
52200 SOCIAL SECURITY	604,970	0	604,970	114,945.77	.00	490,024.23	19.0%
52201 MEDICARE	491,744	0	491,744	.00	.00	491,744.00	.0%
52202 FSA ADMINISTRATION	3,000	0	3,000	428.40	-428.40	3,000.00	.0%
52300 PENSION-DEF BENEFIT	1,121,499	0	1,121,499	124,435.33	.00	997,063.87	11.1%
52301 PENSION-DEF CONTRIBUTION	13,000	0	13,000	1,411.60	.00	11,588.40	10.9%
52500 UNEMPLOYMENT	50,000	0	50,000	9,483.81	.00	40,516.19	19.0%
52600 WORKER'S COMP	291,981	-3,188	288,793	285,056.00	.00	3,737.32	98.7%
52700 DISABILITY INSURANCE	72,000	0	72,000	17,217.62	-11,490.79	66,273.17	8.0%
53000 UNBUDGETED EXPENSE	75,000	0	75,000	.00	.00	75,000.00	.0%
53101 LABOR & LEGAL SVCES	110,000	0	110,000	9,899.00	-310.00	100,411.00	8.7%
53222 EVALUATION SERVICES	139,500	-3,000	136,500	12,350.00	21,650.00	102,500.00	24.9%
53224 STAFF DEVELOPMENT	218,969	-1,928	217,041	24,788.94	8,720.28	183,531.55	15.4%
53225 NEASC ACCREDITATION SERVICES	4,540	0	4,540	4,210.00	.00	330.00	92.7%
53230 STUDENT SUPPORT SERVICES	51,000	0	51,000	1,125.60	.00	49,874.40	2.2%
53231 ADULT EDUCATION	45,000	0	45,000	42,000.00	.00	3,000.00	93.3%
53300 PROF / TECH SVCES	1,269,860	0	1,269,860	470,756.47	572,231.62	226,871.91	82.1%
53305 PROF TECH MEDICAL	15,630	0	15,630	13,858.50	-148.00	1,919.50	87.7%
54210 DISPOSAL / RECYCLING	73,200	0	73,200	19,936.99	43,000.01	10,263.00	86.0%
54220 SNOW REMOVAL	64,946	0	64,946	.00	9,500.00	55,446.00	14.6%

21-22 MADISON PUBLIC SCHOOLS EXPENDITURE
BOE MEETING 9.14.2021

FOR 2022 12									
54300	REPAIRS & MAINT	ORIGINAL APPROP	TRANFRS/ADJSTMTS	REVISED BUDGET	YTD EXPENDED	ENC/REQ	AVAILABLE BUDGET	PCT USED	
54300	REPAIRS & MAINT	574,204	0	574,204	99,085.73	57,145.75	417,972.44	27.2%	
54307	TECH / INFRASTRUCTURE	42,000	0	42,000	9,387.74	9,645.88	22,966.38	45.3%	
54309	EMERGENCY MAINTENANCE	50,000	0	50,000	12,405.00	-12,405.00	50,000.00	.0%	
54310	KITCHEN MAINTENANCE	13,401	0	13,401	3,401.60	590.71	9,408.69	29.8%	
54313	TREATMENT PLANT REPAIRS	29,000	0	29,000	4,511.00	-3,000.00	27,489.00	5.2%	
54320	REPAIR / CONTRACTS	36,500	0	36,500	2,457.15	744.00	33,298.85	8.8%	
54330	ALARM SERVICES	12,372	0	12,372	7,792.67	.00	4,579.33	63.0%	
54340	TELEPHONE MAINTENANCE	14,024	0	14,024	.00	.00	14,024.00	.0%	
54420	RENTAL AGREEMENTS	29,152	100	29,252	1,269.19	785.81	27,197.20	7.0%	
54600	TREE SERVICES	8,828	0	8,828	.00	.00	8,828.00	.0%	
54900	PURCHASE SVCS	353	0	353	.00	.00	353.10	.0%	
55110	STUDENT ACTIV TRANS	165,505	0	165,505	3,265.50	-5,655.00	167,894.21	-1.4%	
55111	REGULAR TRANSPORTATION	1,973,180	0	1,973,180	189.46	24,866.70	1,948,123.84	1.3%	
55113	FUEL / TRANSPORTATION	283,000	0	283,000	1,186.30	48,813.70	233,000.00	17.7%	
55114	SCHOOL CHOICE TRANSPORT	67,500	0	67,500	.00	579.04	66,920.96	.9%	
55120	SPED TRANSPORTATION	1,265,039	0	1,265,039	131,070.70	150,088.85	983,879.45	22.2%	
55201	GENERAL INSURANCE	293,336	3,188	296,524	290,524.00	.00	6,000.00	98.0%	
55203	STUDENT INSURANCE	18,811	0	18,811	17,094.00	.00	1,717.00	90.9%	
55301	TELECOMMUNICATIONS	152,942	1,588	154,530	38,879.49	72,785.04	42,865.23	72.3%	
55302	POSTAGE	21,188	-100	21,088	1,195.50	5,086.22	14,806.19	29.8%	
55303	REPORTS/PUBLIC RELATIONS	4,650	0	4,650	.00	.00	4,650.00	.0%	
55400	LEGAL NOTICES & ADS	900	0	900	.00	.00	900.00	.0%	
55500	PRINTING & BINDING	44,817	0	44,817	8,109.00	11,771.53	24,936.46	44.4%	
55501	PRINTING / INSTRU SUPPLIES	34,845	0	34,845	4,191.77	120.57	30,533.01	12.4%	
55608	TUITION / TYPICALS	-100,000	0	-100,000	-2,115.00	.00	-97,885.00	2.1%	
55610	EXT PLACEMENTS / PUBLIC	399,214	0	399,214	26,402.00	271,039.00	101,773.00	74.5%	
55630	EXT PLACEMENTS / PRIVATE	1,809,847	0	1,809,847	327,823.47	1,347,890.19	134,133.34	92.6%	
55640	SCHOOL CHOICE TUITION	76,000	0	76,000	.00	.00	76,000.00	.0%	
55641	EXTENDED YEAR SERVICES / SPED	106,000	0	106,000	110,568.88	.00	-4,568.88	104.3%	
55643	EXT PLACEMENT/ GENERAL ED	10,000	0	10,000	.00	.00	10,000.00	.0%	
55801	TRAVEL (STAFF)	27,600	0	27,600	1,307.86	5,305.70	20,986.44	24.0%	
55802	TRAVEL (BOE)	320	0	320	.00	.00	320.00	.0%	
55900	MISC PURCH SERVICES	8,850	0	8,850	1,610.00	5,700.00	1,540.00	82.6%	
56101	OFFICE SUPPLIES	40,626	0	40,626	14,663.37	-942.07	26,904.78	33.8%	
56110	INSTRUCTIONAL SUPPLIES	403,381	-1,652	401,729	119,624.64	43,754.78	238,349.86	40.7%	
56120	INSTRUCTIONAL SOFTWARE	23,876	0	23,876	18,398.04	-2,429.67	7,907.63	66.9%	
56130	CUSTODIAL SUPPLIES	82,132	0	82,132	39,433.86	4,109.02	38,589.12	53.0%	
56131	MAINTENANCE SUPPLIES	78,000	0	78,000	21,302.81	14,075.10	42,622.09	45.4%	
56140	FIELDS MAINTENANCE	112,900	0	112,900	238.50	25,822.00	86,839.50	23.1%	
56206	GAS SERVICES	268,639	0	268,639	11,673.17	-163.11	257,128.94	4.3%	
56207	HEATING FUEL	10,944	0	10,944	.00	.00	10,944.00	.0%	
56210	WATER	42,650	0	42,650	3,761.09	-714.25	39,603.16	7.1%	
56220	ELECTRICITY	770,358	0	770,358	106,420.81	-4,329.42	668,266.61	13.3%	
56260	EQUIPMENT MAINTENANCE	21,672	0	21,672	.00	.00	21,672.00	.0%	

21-22 MADISON PUBLIC SCHOOLS EXPENDITURE
 BOE MEETING 9.14.2021

FOR 2022 12								
56410	TEXTBOOKS & REPLACEMENT	ORIGINAL APPROP	TRANFRS/ADJSTMTS	REVISED BUDGET	YTD EXPENDED	ENC/REQ	AVAILABLE BUDGET	PCT USED
56410	TEXTBOOKS & REPLACEMENT	33,310	0	33,310	3,511.21	4,328.58	25,470.53	23.5%
56411	TEXTBOOKS / NEW	36,500	0	36,500	.00	.00	36,500.00	.0%
56420	AWARDS	4,365	0	4,365	313.04	1,063.21	2,988.75	31.5%
56421	MEDIA SUPPLIES	35,428	3,000	38,428	7,709.22	523.89	30,195.23	21.4%
56422	PERIODICALS	26,272	0	26,272	3,306.26	16,837.46	6,128.44	76.7%
56423	PRINT COLLECTION	53,304	0	53,304	.00	.00	53,303.62	.0%
56550	STAFF UNIFORMS	5,258	0	5,258	5,778.41	.00	-520.41	109.9%
56551	UNIFORMS / STUDENT GROUPS	23,280	0	23,280	.00	12,700.00	10,580.00	54.6%
56900	SUPPLIES	66,960	0	66,960	10,448.44	5,202.08	51,309.83	23.4%
57301	EQUIPMENT	211,936	64	212,000	44,859.72	57,743.10	109,397.38	48.4%
57302	OS SOFTWARE	282,500	0	282,500	152,340.93	16,360.00	113,799.07	59.7%
57303	EQUIP - LEASE/PURCHASE	39,120	0	39,120	9,772.59	29,347.41	.00	100.0%
57304	COMPUTER HARDWARE	549,550	0	549,550	383,383.25	15,408.36	150,758.39	72.6%
57310	VEHICLES	0	0	0	.00	-24.45	24.45	100.0%
57330	FURNISHINGS & FIXTURES	0	0	0	8,924.10	-8,924.10	.00	.0%
57400	PUBLIC SAFETY	26,023	0	26,023	1,128.34	-1,132.38	26,027.04	.0%
58100	DUES, FEES & MEMBSHPS	64,390	1,928	66,318	41,154.85	5,334.00	19,828.68	70.1%
58101	ATHLETIC EVENT FEES	10,379	0	10,379	.00	.00	10,379.00	.0%
GRAND TOTAL		49,179,440	0	49,179,440	5,559,750.42	32,654,039.40	10,965,650.03	77.7%

** END OF REPORT - Generated by Kristen Bartosic **

#3020.7

**Board Budget Procedures Adoption
And Line Item Transfers**

In accordance with Conn. Gen. Stat. § 10-222, The-the Board of Education (the “Board) will present an itemized estimate of the cost for the operation of the public schools to the fiscal authority not later than two months preceding the annual meeting at which appropriations are to be made. The estimated cost of operating the public schools for the ensuing year shall be the final budget for the schools, modified, if necessary, by any difference in the amount requested by the Board of Education and the amount appropriated by the legislative authority for the operation of the schools.

If reductions are made in the budget by the Board of Finance or at the town budget meeting or referendum, the Superintendent shall prepare a final budget recommendation for Board of Education review, modification if needed, and approval; such budget shall reflect changes made from the originally approved education budget to remain within the reduced figure ultimately approved by the legislative authority.

The Superintendent and/or his/her designee shall be responsible for administering and monitoring the budget through the course of the year. The Superintendent or his/her designee shall maintain a system of appropriate expenditures and encumbrance accounting that is organized to conform with the requirements for State and Federal Accounting Reports. A budget report shall be prepared and presented to the Board for approval at the first regularly scheduled meeting of each month.

Line Item Transfers

The Board of Education recognizes the need for transfers between object line items of the approved budget. All transfers of funds between and within object codes in excess of \$10,000.00 shall be subject to prior approval by the Board of Education. A formal request will be submitted from the cost center requesting the transfer. This request will be

32 reviewed by the department of Fiscal Services and approved for submission to the Board
33 of Education by the Superintendent. The Board shall be provided with complete
34 information regarding the request for transfer of funds and the rationale for the
35 expenditure.

36
37 **Transfer of Funds Under Emergency Conditions**

38
39 If there is an urgent need for a line item transfer and the Board is unable to meet in a
40 timely fashion to consider such transfer, the Superintendent or his / her designee is
41 authorized to transfer funds from any line item. All transfers made in such instances shall
42 be announced at the next regularly scheduled meeting of the Board and the rationale for
43 the transfers shall be provided.

44
45 All such transfers shall be subject to administrative regulations promulgated by the
46 Superintendent. The Department of Fiscal Services will prepare a monthly reconciliation
47 statement indicating the transactions to and from accounts affected by these transfers.

48
49 Total expenditures by the Board of Education shall not exceed the appropriation made by
50 the Town of Madison. If any occasion arises whereby additional funds are needed by such
51 board, a Special Appropriation request must be made to the Board of Selectmen and
52 subsequently to the Board of Finance.

53
54 Legal Reference:

55
56 Conn. Gen. Stat. § 10-221
57 § 10-222

58
59 ~~10-51 Fiscal year. Budget. Payments by member towns. (regional districts)~~
60 ~~10-222 Appropriations and budget. Financial information system.~~

61
62
63 Date of Adoption: June 24, 1997
64 First Reading: August 17, 2021
65 Second Reading: September 14, 2021

66
67

Daniel
Hand High
School
Science
Department
Chemical
Hygiene
Plan

September 1, 2021 to June 30, 2022

Note Changes in red

Daniel Hand High School Science Department Chemical Hygiene Plan

In accordance with the Federal Laboratory Standard and the Connecticut State Department of Education guidelines and the Ct-OSHA Laboratory Standard, the Madison Board of Education and Superintendent recognize their responsibility for the protection of their employees. The attached chemical hygiene plan is therefore instituted to assist the overall safety program for the high school's Science Department staff. Representing the Madison Board of Education, the Superintendent hereby appoints Paul T. Mezick to be its high school Science Department's Chemical Hygiene Officer for the 2021-2022 school year.

Although we have designated a Chemical Hygiene Officer, we realize that the success of the Chemical Hygiene Plan rests with all employees. The ultimate responsibility for the Chemical Hygiene Plan rests with the School District, Superintendent and the Madison Board of Education.

Paul T. Mezick

Date 9/3/2021

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Introduction

This Chemical Hygiene Plan applies to all science classrooms, laboratories and chemical store rooms/prep rooms in Daniel Hand High School; specifically, Rooms 204, 205 (Storage), 207, 219, 226, 242, 244 (Storage), 249, 304, 305 (Storage), 307, 318 (Storage), 319, 326, 342, 344 (Storage), 349 and the Greenhouse. This Chemical Hygiene Plan has been developed in conformance with OSHA regulations at 29 CFR 1910.1200, known as the “Hazard Communication Standard” and 29 CFR 1910.1450, known as the “Laboratory Standard”.

The Laboratory Standard outlines the basic components of a Chemical Hygiene Plan, as follows:

- Standard Operating Procedures, i.e. general laboratory rules and procedures relevant to health and safety considerations
- Criteria the School System will use to determine and implement control measures to reduce exposure to chemical hazards, e.g. Engineering Controls (hoods, eyewashes, etc.), administrative procedures (SOPs), and use of Personal Protective Equipment (PPE)
- A requirement that hoods and other protective equipment are functioning properly
- Provision for employee information and training
- The circumstances under which a particular laboratory procedure will require prior approval from the School System or its designee
- Provisions for medical consultation and examination in the event of a chemical exposure
- Designation of Chemical Hygiene Officer and others personnel that are responsible for enforcement of this Chemical Hygiene Plan
- Provisions for additional employee protection for work with particularly hazardous chemicals

This Chemical Hygiene Plan is to be reviewed and updated annually.

A. General Employee Rules and Procedures

Conditions for employment in science classrooms require that teachers and other employees abide by the following principles and guidelines, especially when working with chemicals for instructional purposes.

1. Take proven measures to minimize all chemical exposures.
2. Avoid skin contact or inhalation of chemicals
3. Wear safety goggles and other necessary Personal Protective Equipment at all times when working with chemicals.
4. Know and understand the hazards for any chemical used. Know and understand the procedure for proper use, handling, storage and disposal of any chemicals used.
5. Ensure that classroom occupants have unrestricted access to basic safety equipment including a fire blanket, safety goggles, fire extinguisher, eyewash, and shower station.
6. Properly label all chemicals dispensed including those temporarily stored in a classroom. Include special hazard(s) where appropriate.

7. Do not store chemicals in a classroom for extended periods. If chemicals are to be stored for several days in order to perform a scheduled experiment, then all potentially hazardous chemicals must be stored in a cabinet.
8. Only authorized personnel are allowed in chemical storerooms.
9. In the case of teachers or students performing demonstrations, a teacher should perform and document a hazard risk assessment, provide a safety briefing to students, and place a safety barrier (as required) between the audience and the demonstration.
10. Know where and how to use master utility controls to shut off gas, electrical and water supplies. Gas jets must be turned off when not in use.
11. Do not dispense chemicals directly from a stock bottle nor return dispensed chemicals to a stock bottle.
12. Inform students and support staff of the locations of classroom safety devices (e.g., eyewash, fire extinguisher, etc.). Provide instruction on how to properly use classroom safety devices during a laboratory emergency.
13. Require all students to return signed DHHS Laboratory Safety Agreement for each science course, and to pass a science safety assessment.
14. No experiment should be conducted in a laboratory in which the exhaust system is not properly functioning. If, while running an experiment, the exhaust system fails for any reason, the experiment must be halted and all exposed chemicals properly sealed.
15. Certain chemicals must only be used in the fume hoods. If the fume hood is not working properly, the chemical cannot be used until the hood is repaired.
16. No more than the legal occupancy limit of students is allowed in the lab.
17. All laboratory users, including, but not limited to instructors and students, shall be trained prior to laboratory use and at least annually on the Emergency Evacuation Plan (page 13 Chemical Hygiene Plan).
18. The Madison School System reserves the right to prohibit the purchase or use of certain particularly hazardous chemicals that would endanger staff and students.
19. The Madison School System will not allow any staff member to facilitate laboratory instruction who is not properly trained in the Chemical Hygiene Plan, the safe handling of chemicals or other science-related hazards.

B. General Laboratory Rules and Procedures for Students

1. To insure that all chemistry laboratory experiences are safe, positive experiences, the student will be required to abide by all of the following guidelines:
2. All students will be issued a Laboratory Safety Acknowledgement. They will return a copy of this acknowledgement, signed by both the student and the parent or guardian. This acknowledgement is required for participation in laboratory activities. It will be kept on file by the instructor.
3. Always conduct yourself in a responsible manner at all times. No horseplay or other fooling around should ever occur in the laboratory.
4. Work only in your assigned lab station. Please do not wander around the room and distract other students or interfere with their work.

5. Be properly prepared to conduct all experiments. Read written procedures in advance. Many experiments will have special safety instructions and techniques. Pay attention to laboratory safety instructions and be sure you understand what you are doing before you proceed.
6. Wear the appropriate Personal Protective Equipment as designated by your instructor. Wear safety goggles, gloves, aprons, and face shields where required. Failure to use proper protective equipment may result in your being expelled from the classroom.
7. Perform all experiments as directed. Do not do anything that is not part of an approved experimental procedure. Follow all instructions, both written and verbal, that are provided by your instructor. Obtain approval before making any changes. Do not perform any unauthorized experiments.
8. Never work alone in the laboratory without instructor supervision.
9. Wear appropriate clothing in the laboratory. Shoes should cover the entire foot, clothing should not be loose and floppy, especially the sleeves.
10. Tie back long hair to keep it away from flames and chemicals.
11. Keep the aisles clear at all times. Put large book bags completely under the tables or leave them in your locker. Push stools and chairs under the tables when they are not in use.
12. Know the locations of the fume hoods, eyewash, fire blanket, and fire extinguishers.
13. Absolutely no food or beverages for human consumption are allowed in the laboratory area. Do not eat in the laboratory area.
14. Never take chemicals, supplies or equipment out of the laboratory without the knowledge and consent of the instructor.
15. Do not enter the laboratory chemical stockroom without specific permission from your instructor.
16. Handle all chemicals with care. Never taste a chemical. Check odors when instructed to do so by gently wafting some of the vapor toward your nose by hand.
17. Read chemical labels and hazard warnings very carefully. Make sure that you have the correct substance in the correct concentration. Check the label twice before removing any of the contents. Review the instructor's safety instructions for handling hazardous materials.
18. Report all accidents, spills, or injuries to your instructor immediately.
19. Always protect the balance pans when weighing chemicals. If you spill material, clean it up immediately. Never return chemicals to the original stock bottles.
20. Use the fume hood or make appropriate provisions for trapping hazardous gases that might be evolved during an experiment.
21. Clean up spills immediately. Clean all lab equipment when you are finished with the laboratory experiment. Return your equipment to the place designated by your instructor when you are finished.
22. Dispose of waste chemicals properly according to your instructor's instructions. Do not put hazardous chemicals or other solids in the sinks.

23. If you break any glassware, inform your instructor and list the item broken on the breakage inventory sheet (See Appendix G for a sample sheet).
24. Turn off your Bunsen burner when it is not in use.
25. Treat burns immediately by putting the burned area under cold water.
26. Do not leave glass thermometers unattended. Store them between the water tap and gas jets when you are not actually using them.
27. I agree to provide my instructor with a list of allergies or other medical problems that could endanger my safety in the laboratory.

C. Personal Hygiene Guidelines for Instructors and Students

1. Do not eat or drink, or apply cosmetics in the laboratory.
2. Wash your hands thoroughly after working in the laboratory.
3. Never smell chemicals directly.
4. Never bring foods, open or closed into the laboratory.

D. Protective Clothing Requirements for Instructors and Students

1. Eye protection must be worn at all times when working with chemicals in the laboratory.
2. Additional safety clothing such as aprons and gloves may be required when the experiment warrants it. These **MUST BE WORN** if your instructor requires it.
3. Wear closed-toe and low-heeled shoes.
4. Do not wear clothing with loose or balloon sleeves that will get in the way of chemicals, flames or other objects.
5. Avoid ties and hanging jewelry.
6. Keep book bags and personal items out of the aisles and emergency exits.

E. Instructor's 'Housekeeping' Rules

1. Do not keep chemicals that are not involved in a current experiment stored in your lab. Chemicals that are involved in a current experiment should be either stored in a working hood or placed in a locked cabinet.
2. Properly dispose of waste chemicals.
3. Waste disposal containers should be properly marked.
4. All chemicals including solutions should be properly labeled with hazards.
5. All spills should be cleaned up promptly and properly.
6. Work areas and floors should be cleaned regularly.
7. Access to all safety equipment must be kept clear at all times.
8. If a circuit breaker panel box is located in a room, it must be (a) kept locked, and (b) the outlined area marked on the floor must be kept clear at all times.
9. The main gas supply for the student lab stations must be turned off via the emergency shut off switch when not in use.

F. Accidents and Spills

In the event of an emergency, all students will be evacuated from the laboratory using the nearest exit. Students will exit using the posted classroom evacuation route. All chemical spills will be cleaned up immediately using approved spill cleanup procedures.

- A Type ABC fire extinguisher will be kept available in each chemistry lab.
- A supply of sodium carbonate will be available to neutralize acid spills.
- A supply of spill cleanup absorbent will be available to contain spills.

G. General Chemical Storage Rules for the Chemical Hygiene Officer

1. An updated inventory will be kept detailing all chemicals in stock and their location. Stored chemicals will be inspected periodically.
2. All stored chemical solutions will be labeled with the chemical identity, concentration and hazard information
3. All new chemicals will be dated on arrival.
4. Chemicals will be stored in a separate secure area.
5. All incoming chemicals will be opened and transported by qualified science teachers.
6. All chemicals will be stored in compatible chemical groupings using an approved storage scheme (such as Flynn Scientific's system).
7. All flammable chemicals will be stored in approved flammable storage cabinets, away from ignition sources and oxidizers, out of direct sunlight and at the recommended temperature.
8. Chemicals will not be stored under fume hoods.
9. The chemical storage area will be labeled to properly identify the hazardous chemicals that are stored within.
10. Storage areas should be well ventilated with continuous ventilation to the outside air (no recirculation of storage room air is allowed).
11. Food shall not be stored in a laboratory refrigerator.
12. Chemicals shall not be exposed to heat or direct sunlight.
13. Compressed gases shall be handled as high energy sources and therefore potential explosives.
14. Compressed gas cylinders will be chained or otherwise securely fastened to the wall so they do not fall over.
15. Small gas cylinders of flammable gasses must be stored in their OWN Flammables cabinet
16. Corrosives will be stored in separate corrosive cabinets. Nitric Acid and Acetic Acid will be stored separately from other acids.
17. Water-active solids such as sodium and potassium will be stored under dry oil. The presence of water-active solids/metals requires the presence of a Type D Fire Extinguisher in the storeroom and a Type D Powder Fire Extinguisher in each classroom in which these chemicals are in use.

H. Specific Safety Rules for Hazardous Chemicals and Biologicals

1. All chemicals that emit potentially hazardous vapors should be used in the fume hood.
2. The fume hood will be used whenever a chemical is used that has a Permissible Exposure Limit less than 50 ppm.
3. Mutagens and teratogens will not be purchased or used in the laboratory.
4. Special care and handling will be exercised when using any chemical that is corrosive or toxic.
5. Use extreme caution when working with finely-divided powders and dust-like materials. Be aware that finely-divided materials may form explosive mixtures in air.
6. Glycerin and other potential hazardous materials shall be kept under the control of the instructor.
7. No alcohol lamps will be purchased or used.
8. No Peroxide-forming or Pyrophoric chemicals will be purchased or used (see Appendix G for a list of chemicals which are banned from purchase or use in DHHS).
9. No culturing of unknown bacteria or viruses will be allowed.
10. No work will be performed on human blood, human cells or other human substances without proper training and use of Personal Protective Equipment.

I. Safety Equipment

1. The school shall maintain adequate safety equipment in each laboratory in compliance with the Laboratory Standard. This equipment shall include, but not be limited to the following items:
 - a. Indirectly-vented safety goggles for each student potentially subjected to liquid splash; impact-resistant safety glasses for each student potentially subjected to physical impacts only
 - b. Aprons for each student
 - c. Nitrile gloves for each student working in all chemical laboratories; vinyl gloves are acceptable in biological and physics laboratories
 - d. Eyewash
 - e. Safety Shower
 - f. Fire extinguisher
 - g. Fire blanket
2. All safety equipment will be maintained, inspected, and kept in working order.
3. **Dosimeters will be used monthly to ensure that goggle cabinet bulbs emit 100 mj/cm² during a 15 minute disinfection cycle.**
4. Fume hoods will be inspected weekly and tested annually by an outside service company that shall certify that each hood meets standards, i.e. a level of 70-100 linear feet per minute.
5. The laboratory ventilation system shall be periodically tested to insure that the accepted ventilation standard of 4-12 air exchanges per hour is maintained.

6. An online version of Safety Data Sheets shall be maintained, updated and made available to all instructors and the School Nurse.
7. There will be one double outlet for every four students with appropriate circuits.

J. Employee Safety Training

The Madison Public Schools will provide initial safety training upon hire/assignment to all instructors to any science laboratory/classroom and ongoing safety training sessions for all Science instructors. This training shall include:

1. Content and location of the Chemical Hygiene Plan.
2. Potential hazards in using laboratory chemicals.
3. Proper handling, labeling, storage, and disposal of chemicals.
4. Signs and symptoms of overexposure to chemicals.
5. Location and use of Safety Data Sheets.
6. Procedures to teach students to respect and comply with accepted safety procedures.
7. The School Nurse will provide First Aid training specific to potential laboratory hazards.

K. Exposure Evaluation of Instructors

It is the policy of Daniel High School to promptly investigate any suspected overexposure to chemicals. In the event of an overexposure, we will document all chemicals and circumstances involved in the overexposure. This information shall be used to review safety procedures and further improve laboratory safety.

Signs of overexposure could include, but are not limited to, the following:

- Accidental breakage of a hazardous materials container
- A skin rash or irritation occurring after contact with a chemical
- Caustic splash to the eyes or face
- Symptoms of dizziness or nausea

If the monitoring of the air is deemed to be necessary, the results of such tests shall be made available to employees within 2 weeks.

L. Medical Evaluations

Medical consultation shall be available to the employee when:

- There has been a significant spill or uncontrolled release of chemical fumes.
 - Monitoring indicates that an overexposure to a chemical has occurred
 - There is a sign or symptoms of chemical overexposure
1. The attending physician shall be provided with the name of the chemicals used and the conditions under which the overexposure occurred.

2. Medical examinations dealing with chemical exposure shall be documented and other employees working under the same conditions shall be notified. All documentation shall be kept on file.
3. All medical examinations and consultations shall be performed under the direct supervision of a licensed physician, and shall be provided to the employee without cost.

M. Monitoring

Monitoring will be necessary for substances regulated by a standard only if there is reason to believe that the exposure levels for the substance routinely exceed the Permissible Exposure Limit (PEL) for that substance. If monitoring shows no evidence of exposure, that monitoring may be discontinued.

If the initial monitoring shows evidence for exposure exceeding the PEL, steps must be taken immediately to reduce the exposure below the Permissible Exposure Limit. Monitoring then shall continue periodically to verify that those steps have been effective. Monitoring may be discontinued after it can be demonstrated that no further hazard exists. The results of all monitoring shall be fully accessible and available to all employees.

N. Emergency Evacuation Plan

1. In most cases, the teacher in charge of the classroom or affected area shall make the decision to evacuate.
2. In the event that evacuation of the entire building should be deemed necessary, the school office shall be immediately notified. An alarm shall be sounded and the building evacuated according to standard fire drill practices.
3. If only a classroom is to be evacuated, students shall exit by the nearest available exit. They shall then proceed out of the building in accordance with the standard fire drill practices.
4. In all cases, the teacher shall notify to school office to alert the building as to a possible hazard. The chemical hygiene officer shall also be notified to make a determination of the level of hazard.

O. Electrical Safety

1. Check electrical equipment and inspect for frayed cords and damaged connections; do not use and report damage to your supervisor immediately. Electrical tape is prohibited.
2. Multiple outlet strips must be plugged directly into a wall outlet. Power strips should have a circuit breaker. Extension cords are not to be permanently used with power strips.
3. Extension cords are not to be used in place of permanent wiring (use allowed if only on a temporary, immediate, basis)
4. Ensure extension cords are 14-gauge (heavy duty) at a minimum, and temporarily servicing only one appliance or fixture

5. Ensure extension cord is plugged directly into receptacle. Extension cords should never be used plugged end-to-end; use the proper length cord.
6. If extension cords are used, ensure cords are not running through walls, ceilings, under carpets or doors, and do not present a tripping hazard.
7. Cord guards should be provided across an aisle or other passageway to prevent tripping.
8. All electrical equipment must be properly grounded (three-prong plugs) or double-insulated. 3-prong plugs may only be used for 3-prong receptacles, and never altered to fit into an outlet.
9. Ground Fault Circuit Interrupters should be in place where electrical outlets are in use within 6 feet of water. Ensure GFCI's are working properly by using the "test" button.
10. All electrical boxes, panels and receptacles should be covered to protect against electrocution.
11. Control switches, circuit breakers and electrical panels must be free of obstruction. These items must be accessible at all times.

P. Disposal of Sharps

Sharps are defined as any object having acute corners, edges or protuberances capable of cutting or piercing, e.g. syringe needles, razor blades, glass, etc. These items cannot be disposed of in the normal lab trash or dumpsters. Every year custodians are injured by sharps in laboratory trash cans. Therefore, please follow these guidelines:

1. Lab glassware **NOT** contaminated by hazardous materials (e.g. pyrex, borosilicate)
Custodial staff will **not** remove glass trash from lab. Place broken or unbroken glass into a labeled "*Broken Glass*" trash box that is located in every science laboratory.
2. Needles and razor blades **NOT** contaminated by hazardous materials. These are particularly dangerous and require *extra precautions* beyond those of glassware:
 - Each Biology lab is supplied with a sharps container. Needles and razor blades (scalpels) should be disposed of in these designated containers.
 - When full, notify the Chemical Hygiene Officer so that he can remove the filled container and supply you with a new container.

Q. First Aid

Safety incidents requiring first-aid or first responder assistance for science teachers working in school laboratories include:

Heat/Chemical Burns: Chances are good that someone will get burned in the laboratory from Bunsen burners, matches, ring stands, hotplates, etc. Should that happen, immediately soak the burned area in cold water. Request immediate assistance from the school's health care provider.

Electrical Burns: Severity of the burn depends on the type, amount and length of contact. The electrical incident may also cause the heart to stop or beat erratically. Respiratory arrest may also occur. Signs of electrical injury include – unconsciousness, dazed, confused behavior, breathing difficulty, obvious burns on the surface of the skin, weak, irregular or absent pulse, burns both where the current entered and where it exited. You can also suspect a possible electrical injury if a sudden low noise such as a pop or bang is heard. An unexpected flash of light may also indicate an electrical incident. If the teacher is trained or certified in CPR, initiate emergency care. Otherwise, request immediate assistance from the school’s health care provider.

Bleeding: Bleeding can occur as a result of cuts from glass, metal, scalpels and other sharp objects. In situations where arterial bleeding occurs, prompt action is required. Direct pressure over the wound with use of a barrier such as a rubber glove. If a glove is not handy, use a shoe with the hand inside of it. The barrier is needed as a standard precaution. Request immediate assistance from the school’s health care provider.

Chemical Exposure: With an increased emphasis on hands-on, process and inquiry-based science, chemical exposure has a heightened probability of happening. Be certain to have the SDS and/or SDS available for each hazardous chemical used and review it prior to any laboratory work being done. Should there be an exposure, have the injured person immediately (within 10 seconds) use the eyewash or acid shower, as appropriate. Flush with copious amounts of tepid water for a minimum of 15 minutes. Request immediate assistance from the school’s health care provider.

Swallowed Poisons: Accidental swallowing of poisonous chemicals in the laboratory can happen. It is critical to review SDS and/or SDS with students prior to use of these chemicals so all are familiar with their potential harm to the body. If the person becomes unconscious or is convulsing, do not induce vomiting. The same is true should the person complain of a “burning feeling” in their throat. Provide plenty of water or milk if available. Request immediate assistance from the school’s health care provider. It is also wise to contact the **Poison Control Center 800-222-1222** if you know what poison has been accidentally taken.

Penetrating Objects: Use of projectiles, walking in a laboratory with sharp hazards, etc., can be hazardous and cause body penetration. **Do not remove the object.** Try to keep the individual calm and still. Request immediate assistance from the school’s health care provider.

Lacerations: Broken glassware or other sharp objects can cause cuts in the skin. If bleeding occurs, try to have the injured person put on latex or NIOSH approved plastic gloves and apply direct pressure to control bleeding. If that is not possible, use caution to keep a barrier (glove) between you and the injured person while trying to apply direct pressure. Request immediate assistance from the school’s health care provider.

Shock: Symptoms of shock include faint pulse, clammy skin, nausea and/or vomiting and increased breathing. The victim should be lying down with feet elevated. Cover with a blanket to keep warm. Request immediate assistance from the school's health care provider.

Automatic External Defibrillator

AEDS or Automatic External Defibrillators are small, lightweight devices that look at a person's heart rhythm (through special pads placed on the torso) and can recognize ventricular fibrillation (VF), also known as "sudden cardiac arrest" or SCA. If SCA is present, an AED will advise, and will talk the responder through some very simple steps to defibrillate. AEDs are designed to be used by lay rescuers and "first responders". The AED is part of CPR. For maximum survivor benefits, both tools must be used together!

Only certified AED and CPR trained employees are allowed to administer these tools in a cardiac emergency.

APPENDIX A: FORMS
Laboratory Instructor's General Checklist

1. Each student experiment and teacher demonstration is reviewed by the Department for possible dangers prior to being performed. Substitute experiments and/or demonstrations are developed as needed. _____
2. The teacher promotes a positive student attitude toward safety. _____
3. The teacher models appropriate, safe behaviors. _____
4. Good housekeeping rules are maintained by the staff and students. _____
5. Long hair, loose student clothing, and dangling jewelry are restricted to prevent injury. For the same reason, appropriate footwear is required. _____
6. Frequent, regular safety inspections of instructional areas are performed. _____
7. All work surfaces are thoroughly cleaned following each use. _____
8. Students and staff are not permitted to bring food and beverages into the lab. _____
9. Mouth pipetting of liquids is never allowed. _____
10. The teacher provides safety instruction and has students sign the Student Safety Acknowledgement at the start of every new course. Instructions are reinforced throughout the year. _____
11. Copies of the Accident/Incident Report Form are available and used following all accidents. In addition, all accidents are reported as required by the District. _____

DHHS TEACHER ACCIDENT/INCIDENT REPORT

(Office use only)

Report # _____

Name of staff member completing this report: _____

Complete all information relating to the accident/incident:

Date: _____

Time: _____

Classroom: _____

Location: _____

Staff/student(s) who witnessed or were involved in the accident/incident:

Have all staff/students filed Witness Accident/Incident Reports? _____ (Please attach)

Teacher description of the accident/incident: (Attach additional sheets if necessary)

Immediate action taken to deal with the emergency:

Corrective action(s) taken to avoid a repeat of accident/incident in the future:

Comments

DHHS REQUEST FOR CORRECTION OF SAFETY CONCERN

(Teacher's Copy)

Date: _____

Room: _____

The following is a safety concern in my classroom:

Name: _____

Signature: _____

DHHS REQUEST FOR CORRECTION OF SAFETY CONCERN

(Administrator's Copy)

Date: _____

Room: _____

The following is a safety concern in my classroom:

Name: _____

Signature: _____

DHHS C.H.O. NOTICE OF NONCOMPLIANCE WITH CHEMICAL HYGIENE PLAN

Date: _____ Location: _____ Person responsible for location: _____

Area of noncompliance:

Hazard Communication ___ or Chemical Hygiene ___ or Other _____

Noncompliance observed:

Required action and timeline:

Previous notification dates and actions:

Comments:

(Signature of person responsible for location)

Report submitted to: (Select one)

____ Department Coordinator

____ Building Administrator

____ Superintendent

DHHS C.H.O. MONTHLY SCHEDULE FOR SAFETY COMPLIANCE

School Year _____

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Additions to Inventory									
Biological waste collection									
Chemical waste collection									
Eyewash Fountains Flushed									
Safety Showers Flushed									
Fire Extinguishers									
Goggles hygiene									
Hood velocity check									
SDS Updates									
Staff Training									

DHHS WEEKLY SCHEDULE FOR SAFETY COMPLIANCE

Eyewash Flush, Hood & Safety Equipment Inspection Record

Room	Eyewash Flushed	Hood Inspected	GFCI	Fire Blanket	Fire Extinguisher	Gas Jets	SDS Folder	Goggle Sanitizing
204 Physics	Hand Held	NA						
205 Storage	NA	NA	NA	NA	NA	NA	NA	NA
207 Physics	Hand Held	NA						
219								
226								
242								
244 SR 2	NA	NA	NA	NA	NA	NA	NA	NA
249								
304								
305 Storage	NA	NA	NA	NA		NA	NA	NA
307								
318 SR 3	NA		NA	NA	NA	NA	NA	NA
319								
326								
342								
344 Storage	NA	NA	NA	NA	NA	NA	NA	NA
349								
Greenhouse (Spring)	NA	NA		NA		NA		
Wood Shop 418		NA		NA		NA		
Metal Shop		NA		NA		NA		
Photo 509		NA		NA	NA	NA		
Dark Room		NA		NA	NA	NA		NA
Art Studio		NA		NA	NA	NA		NA
Cafeteria		NA		NA		NA		NA

Signature of Inspector _____ Date _____

Notes _____

DHHS Goggle Sanitation Record

Room # _____

Goggles must be properly sanitized after every use.

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Note: Please leave completed copies affixed to goggle cabinet. The chemical hygiene officer will collect and retain completed goggle sanitation records.

DHHS LABORATORY SAFETY VIOLATION

Student's Name _____

Period _____ Date _____

Violation:

Failure to wear proper eye protection during laboratory procedures

Unapproved and/or dangerous behavior

Failure to follow laboratory instructions

Failure to follow established safety instructions

Other _____

Consequence: _____

Teacher's Signature

Date

APPENDIX B
Daniel Hand High School
Laboratory Safety Acknowledgement

Purpose

Science is a hands-on laboratory class. You will be doing many laboratory activities, some of which require the use of hazardous chemicals. Safety in the science classroom is the #1 priority for students, teachers and parents. To ensure a safe science classroom, a list of rules has been developed and provided to you in this student safety acknowledgement. These rules must be followed at ALL times.

Take this acknowledgement home, review it with your parents or guardian, fill out and sign the last page and return that to your teacher. You will keep the Laboratory Safety Acknowledgement in your science notebook as a constant reminder of the safety rules.

General Guidelines

1. Conduct yourself in a responsible manner at all times in the laboratory.
2. Follow all written and verbal instructions carefully. If you do not understand a direction or part of the procedure, ask the teacher before proceeding.
3. Never work alone in the laboratory. No student may work in the laboratory without an instructor present.
4. When first entering a science classroom, do not touch any equipment, chemicals or other materials in the laboratory area until you are instructed to do so.
5. Do not eat, drink beverages, or chew gum in the laboratory. Do not use laboratory glassware as containers for food or beverages.
6. Perform only those experiments authorized by the instructor. Never do anything in the laboratory that is not called for in the laboratory procedures or by your instructor. Carefully follow all instructions, both written and oral. Unauthorized experiments are prohibited.
7. Be prepared for your work in the laboratory. Read ALL procedures thoroughly before entering the laboratory. Never fool around in the laboratory. Horseplay, practical jokes, and pranks are dangerous and prohibited.
8. Observe good housekeeping practice. Work areas should be kept clean and tidy at all times. Bring only your laboratory instructions, worksheets, and/or reports to the work area. Other materials (books, purses, backpacks, etc.) should be stored in the area designated by the instructor.
9. Keep the aisles clear. Push the chairs aside and form aisle for possible escape.
10. Know the locations and operating procedures of all safety equipment including the first aid kit, eyewash, safety shower, fire extinguisher and fire blanket. Know where the fire alarm and the exits are located.
11. Always work in a well-ventilated area. Use the fume hood when working with volatile substances or poisonous vapors. Never place your head into the fume hood.
12. Be alert and proceed with caution at all times in the laboratory. Notify the instructor

immediately of any unsafe conditions that you observe.

13. Dispose of all chemical waste properly. Never mix chemicals in sink drains. Sinks are to be used only for water and those solutions designated by the instructor. Solid chemicals, metals, matches, filter paper, and all other insoluble materials are to be disposed of in the proper waste containers, not in the sink. Check the label of all waste containers twice before adding your chemical waste to the container.
14. Labels and equipment instructions must be read carefully before use. Set up and use the prescribed apparatus as directed in the laboratory instructions or by your instructor.
15. Keep hands away from face, eyes, mouth, and body while using chemicals or preserved specimens. Wash your hands with soap and water after performing all experiments. Clean (with detergent), rinse, and wipe dry all work surfaces (including the sink) and apparatus at the end of the experiment. Return all equipment clean and in working order to the proper storage area.
16. Experiments must be personally monitored at all times. You will be assigned a laboratory station at which to work. Do not wander around the room, distract other students, or interfere with the laboratory experiments of others.
17. Students are never permitted in the science storage rooms or preparation areas unless given specific permission by their instructor.
18. Know what to do if there is a fire drill during the laboratory period; Containers must be closed, gas valves turned off, fume hoods turned off, and any electrical equipment turned off.
19. Handle all living organisms used in a laboratory activity in a humane manner. Preserved biological materials are to be treated with respect and disposed of properly.
20. When using knives and other sharp instruments, always carry with tips and points pointing down and away from your body. Never try to catch falling sharp instruments. Grasp sharp instruments only by the handles.

Clothing

1. Any time chemicals, heat, or glassware are used, students will wear laboratory goggles. There will be no exceptions to this rule. FAILURE TO DO SO WILL RESULT IN YOU HAVING TO LEAVE THE LAB, TAKING A ZERO FOR IT AND NO CHANCE TO MAKE IT UP.
2. Contact lenses should not be worn in the laboratory unless you have permission from your instructor.
3. Dress properly during a laboratory activity. Long hair, dangling jewelry, and loose torn or baggy clothing are a hazard in the laboratory. Long hair must be tied back and dangling jewelry and loose or baggy clothing must be secured. Torn clothing must be replaced with un-torn clothing. Shoes must completely cover the foot. No sandals are allowed.
4. Lab aprons have been provided for your use and should be worn during laboratory activities. Failure to do so may cause you to ruin your clothing for which the school cannot be responsible.

Accidents and Injuries

1. Report any accident (spill, breakage, etc.) or injury (cut, burn, etc.) to the instructor immediately, no matter how trivial it may appear.
2. If you or your lab partners are hurt, immediately yell out “Code one, Code one” to get the instructor’s attention.
3. If a chemical should splash in your eye(s) or on your skin, immediately flush with running water from the eyewash station or safety shower for at least 20 minutes. Notify the instructor immediately.
4. When mercury thermometers are broken, the mercury must NOT be touched. Notify the instructor immediately.

Handling Chemicals

1. All chemicals in the laboratory are to be considered dangerous. Do not touch, taste or smell chemicals unless specifically instructed to do so by your instructor. The proper technique for smelling chemical fumes will be demonstrated to you.
2. Check the labels on chemical bottles twice before removing any of the contents. Take only as much chemical as needed.
3. Never put any excess chemicals back into the original container. Dispose these chemicals where the instructor specifies.
4. Never use mouth suction to fill a pipette. Use a rubber bulb or a pipette pump.
5. When transferring reagents from one container to another, hold the containers away from your body.
6. Acids must be handled with extreme care. You will be shown the proper method for diluting strong acids. Always add acid to water and swirl or stir solution. Be careful of the heat produced, particularly with sulfuric acid.
7. Never dispense flammable liquids anywhere near an open flame or source of heat. Handle these liquids over another container to contain possible spills.
8. Never remove chemicals or other materials from the laboratory area.
9. Take great care when transferring acids and other chemicals from one part of the laboratory to another. Hold them securely and walk carefully.

Handling Glassware and Equipment

1. Carry glass tubing, especially long pieces, in a vertical position to minimize the likelihood of breakage and injury.
2. Never handle broken glass with your hands. Use a brush and dustpan to clean up broken glass. Place broken or waste glassware in the designated glass disposal container.
3. Inserting and removing glass tubing from rubber stoppers can be dangerous. Always lubricate glassware (tubing, thermometers etc.) before attempting to inset it in a stopper. Always protect your hands with towels or cotton gloves when inserting glass tubing into,

or removing it from, a rubber stopper.

4. If a piece of glassware becomes “frozen” in a stopper, take it to your instructor for removal.
5. Fill wash bottles only with deionized water and use only as intended, e.g. rinsing glassware and equipment, or adding water to a container. Unauthorized use of a deionized water bottle will cause disciplinary action to be taken.
6. When removing an electrical plug from its socket, grasp the plug, not the electrical cord. Hands must be completely dry before touching an electrical switch, plug, or outlet.
7. Examine glassware before each use. Never use chipped or cracked glassware. Never use dirty glassware.
8. Report damaged electrical equipment immediately. Look for things such as frayed cords, exposed wires and loose connections. Do not use damaged electrical equipment.
9. If you do not know how to use a piece of equipment, ask the instructor for help.
10. Do not immerse hot glassware in cold water; it may shatter.

Heating Substances

1. Exercise extreme caution when using a gas burner. Take care that hair, clothing and hands are a safe distance from the flame at all times. Do not put any substance in the flame unless specifically instructed to do so. Never reach over an exposed flame. Light gas or alcohol burners only as instructed by the teacher.
2. Never leave a lit burner unattended. Never leave anything that is being heated or is visibly reacting unattended. Always turn the burner or hot plate off when not in use.
3. You will be instructed in the proper method of heating and boiling liquids in test tubes. Do not point the open end of a test tube being heated at yourself or anyone else.
4. Heated metals and glass remain very hot for a long time. They should be set aside to cool and picked up with caution. Use tongs or heat-protective gloves if necessary.
5. Never look down into a container that is being heated.
6. Do not place hot apparatus directly on the laboratory desk. Allow plenty of time for hot apparatus to cool before touching it. Follow the teacher’s instructions if a hot object needs to be moved.
7. When bending glass, allow time for the glass to cool before further handling it. Hot and cold glass have the same visual appearance. Determine if an object is hot by bringing the back of your hand close to it prior to grasping it.

**DANIEL HAND HIGH SCHOOL
LABORATORY SAFETY ACKNOWLEDGEMENT**

I, _____, have read and agree to follow all of the safety rules set forth in this acknowledgement. I realize that I must obey these rules to insure my own safety, and that of my fellow students and instructors. I will cooperate to the fullest extent with my instructor and fellow students to maintain a safe laboratory environment. I will also closely follow all oral and written instructions provided by my teacher. I am aware that any violation of this safety acknowledgement that results in unsafe conduct in the laboratory or misbehavior on my part may result in my being removed from the laboratory, detention, receiving a failing grade, and/or dismissal from the course.

Student's signature

Date

Dear Parent or Guardian:

We feel that you should be informed regarding the school's effort to create and maintain a safe science classroom/ laboratory environment.

With the cooperation of the instructors, parents and students, a safety instruction program can eliminate, prevent, and correct possible hazards. You should be aware of the safety instructions your son / daughter will receive before engaging in any laboratory work. Please read the list of safety rules above. No student will be permitted to perform laboratory activities unless this acknowledgement is signed by both the student and parent/guardian and a photocopy is on file with the teacher.

Your signature on this acknowledgement indicates that you have read the Student Safety Acknowledgement, are aware of the measures taken to insure the safety of your son/daughter in the science laboratory, and will instruct your son/ daughter to uphold his/her agreement to follow these rules and procedures in the laboratory.

Parent's/Guardian's signature

Date

QUESTIONS

Do you wear contact lenses? YES NO

Are you color blind? YES NO

Do you have allergies? YES NO

If "yes", please list:

APPENDIX C
Fire Marshal Waivers Received by the Daniel Hand Science Department

Waiver 1 – Allows science classes w/laboratory component, to use a “Maximum of 24 students” rather than following the “square footage” requirement.

From: DeBurra, Sam
Sent: Tuesday, June 24, 2014 10:48 AM
To: Salutari, Anthony
Cc: McMinn, William
Subject: Chem Labs

Mr. Salutari,

After researching the code more, with exception of Assembly use, the occupant load factors in the code are used to determine the minimum occupant load to provide egress for. The code's intent is not to restrict the occupant load of the building based on the floor area of the building. Nor is the code specifying the minimum area needed by each occupant for efficient use of the space. If code provisions can be met for a larger number of persons than the calculation determines, the larger number of occupants is permitted to be present, provided that all corridors, aisles, stairs, and other means of egress components can accommodate the larger occupant load.

Each of your laboratories/classrooms has two doors leading to the corridor. I do not see any issues with egress for your current class sizes.

If you have any further questions please contact me.

Thank you,

Samuel E. DeBurra Jr.
Fire Marshal
Town of Madison
(203) 245-5617

Waiver 2 – Allows classroom storage within 18 inches of the ceiling.



STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES
OFFICE OF STATE FIRE MARSHAL

MODIFICATION REQUEST # FM-0361-13

PROJECT NAME: DANIEL HAND HIGH SCHOOL

ADDRESS: 284 GREEN HILL ROAD

TOWN: MADISON

STATE FIRE MARSHAL

In accordance with Section 29-296 of the Connecticut General Statutes, the decision of the Office of the State Fire Marshal in this matter is:

This request seeks relief from the requirement of Part IV Section 15.3.5 of the Connecticut State Fire Safety Code (CSFSC) as amended August 1, 2009 and October 2, 2012 specifically the subsequent reference by CSFSC Part IV Section 9.7.1.1 to NFPA 13 section 8.6.6.1 for the obstructions to sprinkler discharge (standard pendent and upright spray sprinklers). With consideration of the newly changed language in the 2013 edition of NFPA 13 Standard for the Installation of Sprinkler Systems for the obstructions to sprinkler discharge for standard pendent and upright spray sprinklers, specifically to section 8.6.6.2.1 which states "where shelving is installed on a wall and is not directly below sprinklers, the shelves, including storage thereon, shall extend above the of a plane located 18 in. below sprinkler deflectors.", the configuration as shown in the photographs regarding the conforms to the language, this request is ACCEPTABLE.

Evaluated by: _____

Decision endorsed by: _____

William Abbott
STATE FIRE MARSHAL

Date: _____

"In accordance with Connecticut General Statute 29-309, any person determined to have the right to appeal may appeal the decision of the State Fire Marshal in this matter to the State Codes & Standards Committee within thirty (30) days after receipt."

State Codes & Standards Committee
1111 Country Club Road, Middletown, CT 06457
Tel: 860-685-8300

State of Connecticut, Department of Public Safety
 Division of Fire, Emergency & Building Services
 Office of State Fire Marshal

APPLICATION FOR REQUEST FOR MODIFICATION OF A REQUIREMENT OF A FIRE SAFETY REGULATION
 ADOPTED PURSUANT TO CHAPTER 541 OF THE CONNECTICUT GENERAL STATUTES

2011-7-2012
 Relocation No.

Facility Name: Daniel Hand High School

Facility Address: 284 Green Hill Road Madison Connecticut 06443
Number Street City State Zip

Facility Owner: Town of Madison Board of Education Telephone: 203-245-6300

Owner's Address: 10 Campus Drive Madison CT 06443
Number Street City State Zip

Applicant's Name: Thomas Scarice Telephone: 203-245-6300

Applicant's Address: 10 Campus Drive Madison CT 06443
Number Street City State Zip

Contact Person: Thomas Scarice Telephone: 2032456300

Type of Facility: Education
Office Building, LP Gas Bulk Plant, Automobile Service Station, etc.

This Facility is: New; Existing; Renovation; Date of Construction: 2002 ; Date of Present Use: 2002

Previous modifications for this Facility: Unknown, No; Yes, Modification Numbers: _____

Check if a Modification Request to the State Building Code is being submitted to the Office of State Building Inspector

- I, the above named applicant, being a lawful agent of the owner, request modification/relief from a requirement of the CT:
- Moving Picture Theater Code pursuant to C.G.S. § 29-109
 - Amusements/Tent and Portable Shelter Codes pursuant to C.G.S. § 29-145
 - State Fire Safety Code pursuant to C.G.S. §29-296
 - Oil Burning Equipment Code pursuant to C.G.S. §29-317(c)
 - Flammable & Combustible Liquids Code pursuant to C.G.S. §29-321
 - Gas Equipment & Piping Code pursuant to C.G.S. §29-329(c)
 - Liquefied Petroleum Gas & Liquefied Natural Gas Code pursuant to C.G.S. §29-333
 - Hazardous Chemical Code pursuant to C.G.S. §29-338
 - Fireworks and Special Effects Code pursuant to C.G.S. §29-357(c)
 - Model Rocketry Code pursuant to C.G.S. §29-368

For the requirement as prescribed in:

Regulation Number: 29-292-13e, Standard NFPA 13, Section Number: 8.6.6.1
29-292-13e, 29-317-1b (if Applicable) NFPA 30, NFPA 64, etc. Identify Section

I request this modification/relief due to the following reasons:

Equivalent Alternative Practical Difficulty Requirements Unwarranted

Describe area of non-conformance with the appropriate regulation, its location in the facility, and a brief description why code compliance cannot be achieved, specify dimensions as applicable

To allow storage on top of shelving/storage units which are attached to the wall. The 2002 edition of NFPA requires 18" of clearance from the sprinkler deflector to storage. This condition exists in many of the classrooms. Relief of above regulation is being sought because it is now allowed in NFPA 2013 edition, Section 8.6.6.2.1.

APPENDIX D
Chemicals Acceptable for Disposal as Regular Trash

Adapted from Flynn Scientific

Acacia powder, Gum Arabic	Magnesium Chloride
Acid, Acetic (less than 6 M)	Magnesium Oxide
Acid, Ascorbic	Magnesium Sulfate
Acid, Benzoic	Maltose
Acid, Boric	Manganese Chloride
Acid, Citric	Methyl Red
Acid, Hydrochloric (less than 6 M)	Methylene Blue
Acid, Lactic	Nutrient Agar
Acid, Nitric (less than 3 M)	Paraffin
Acid, Stearic	Petroleum Jelly
Acid, Succinic	Potassium Acetate
Acid, Sulfuric (less than 3 M)	Potassium Bicarbonate
Agar(s)	Potassium Bromide
Agarose Gels	Potassium Carbonate
Albumen	Potassium Carbonate
Aluminum Oxide	Potassium Chloride
Ammonium Bicarbonate	Potassium Ferricyanide
Ammonium Phosphate	Potassium Iodide
Ammonium Sulfate	Potassium Phosphate
Beef Extract	Potassium Sulfate
Bromophenol Blue	Potassium Sulfite
Broth, Nutrient	Sand
Calcium Carbonate	Silica Gel (unused)
Calcium Chloride	Silicon Carbide
Calcium Phosphate	Sodium Acetate
Calcium Sulfate	Sodium Ammonium Phosphate
Detergent	Sodium Bicarbonate
Chromatographic Absorbents	Sodium Bromide
Crystal Violet	Sodium Carbonate
Dextrose	Sodium Chloride
Diatomaceous Earth	Sodium Citrate
Ferric Oxide (rust)	Sodium Iodide
Ferric Phosphate	Sodium Phosphate
Ferric Sulfate	Sodium Sulfate
Ferrous Ammonium Sulfate	Sodium Sulfite
Galactose	Starch
Gelatin	Stearic Acid
Gum Arabic	Sucrose
Lactose	Sugars
Lauric Acid	Sulfur
Litmus	Tin Metal
Magnesium Carbonate	Urea

APPENDIX E
Regulations Concerning Eye Protective Devices
As Authorized by Section 214a of the
Connecticut General Statutes

The regulations of Connecticut state agencies are amended by adding sections 10-21 4a-1 to 10-21 4a-3, inclusive as follows:

Section 10-21 41-1. By whom, when and where eye protective devices shall be worn: definitions. Any person who is working, teaching, observing, supervising, assisting in or engaging in any work, activity or study in a public or private elementary or secondary school laboratory or workshop where the process used tends to damage the eyes or where protective devices can reduce the risk of injury to the eyes concomitant with such activity shall wear an eye protective device of industrial quality in the manner in which such device was intended to be worn. For the purposes of sections 10-21 4a-1 to 10-21 4a-3, inclusive, “workshop” and “laboratory” shall include any room or area used to teach or practice industrial arts, vocational and technical education; science, arts and crafts, or any similar skill, activity or subject. The following list of sources of danger to the eyes and the type of protection required to be worn in each case is exemplary, not exclusive.

<u>Source of Danger to the Eyes</u>	<u>Type of Protection Required</u>
Caustic or explosive chemicals	Clear goggles, splash proof
Explosives, solids or gases	Clear goggles
Dust producing operations	Clear goggles, splash proof
Electric arc welding	Welding helmet
Oxy-acetylene welding	Colored goggles or welding helmet
Hot liquids and gases	Clear goggles, splash proof
Hot solids	Clear or colored goggles, or spectacles
Molten metals	Clear or colored goggles
Heat treatment or tempering of metals	Clear or colored goggles metals
Glare operations	Colored spectacles or goggles, or welding helmet
Shaping of solid materials	Clear goggles
Repairing or servicing of vehicles when hazard is foreseeable	Clear goggles or spectacles
Spraying and dusting	Clear goggles, splash proof

Other similar activity being conducted in the instructional program which risks damage to the eyes

Proper eye protective device

Section 10-21 4a-2. Minimum standards for the design, construction and quality of eye protective devices used in schools. Any eye protective device used in such school workshops or laboratories shall be designed and constructed to resist impact, provide protection against the particular hazard for which it is intended, fit snugly without interfering with the movements of the user and be durable, cleanable, and capable of frequent disinfection by the method prescribed for such device by the school medical adviser.

All materials used in such eye protective devices shall be mechanically strong and lightweight, non-irritating to perspiring skin and capable of withstanding washing in detergents and warm water, rinsing to remove all traces of detergent and disinfection by methods prescribed by the school medical adviser without visible deterioration or discoloration. Metals used in such devices shall be inherently corrosion resistant. Plastics so used shall be non-flammable and shall not absorb more than five percent of their weight in water.

Section 10-21 4a-3. Responsibilities of public and private elementary and secondary school governing bodies. The governing board or body of each public and private elementary and secondary school in the state shall require the use of appropriate eye protective devices in each laboratory and workshop by any person in such areas during any activity engaged in, and shall post warnings and instructions in laboratories and workshops which include the list of hazards and protection required set forth in Section 10-21 4a-1. Such boards shall make and enforce rules for the maintenance of all eye protective devices in clean, safe condition and shall replace any such protector which becomes irritating to the skin.

Purpose: To direct the school administrators in the kinds, construction, times and uses of devices for eye protection of teachers and pupils in school laboratories and workshops.

Connecticut Law Journal

January 9, 1968

This two-page document must be posted in all school classrooms in which goggles are required under these State laws.

APPENDIX F

Summary of Applicable OSHA Standards

29 CFR 1910.1200 Hazard Communication Standard

- Requires that Safety Data Sheets be current and available for all hazardous chemicals, and further requires the employer keep current a list of all hazardous chemicals on site.
- Mandates a written Hazard Communication Program, training for new employees, and training for employees potentially exposed to new hazardous materials.
- Sets standards for the labeling of hazardous chemicals.
- Requires training for non-routine tasks which might involve exposure to hazardous chemicals, and for outside contractors, brought onto the work site, who might be exposed to hazardous materials.

29 CFR 1910.1450 Laboratory Standard

- Requires that the employer monitor and limit employee exposure to hazardous chemicals.
- Mandates the appointment of a qualified Chemical Hygiene Officer, and the development of a written Chemical Hygiene Plan detailing standard work practices and policies, and procedures for working with hazardous chemicals.
- Requires initial and periodic employee training in the content of the Chemical Hygiene Plan including: chemical hazards; the content of MSDS; measures, including protective clothing and equipment, to minimize exposure to hazardous chemicals; emergency procedures; exposure limits and signs of overexposure; and the availability of medical consultation and treatment.
- Requires that a current inventory of hazardous chemicals be maintained and that all hazardous chemicals be appropriately labeled.
- Mandates that records of air concentration monitoring results, exposure assessments, medical consultations and examinations be maintained for at least 30 years.

29 CFR 1910.1030 Occupational Exposure to Blood borne Pathogens

- Requires a written plan to eliminate or minimize employee exposure including the determination of the likelihood of exposure, and the tasks in which exposure might occur.
- Mandates the listing of precautions to limit exposure and a description of work practices and protective equipment.
- Requires employee training in techniques to avoid exposure, medical treatment available, including the availability of pre- and post-exposure Hepatitis B vaccination, and the accessibility and contents of the Exposure Control Plan.
- Requires documentation of employee training (kept for three years) and post-exposure medical records (maintained for term of employment + 30 years).

APPENDIX G

Chemical Compatibility

Introduction

If incompatible chemicals are mixed, a fire, explosion, or toxic release can occur. Chemicals can often fall into more than one hazard category and therefore the chemical label and/or Safety Data Sheet (SDS) should be reviewed for storage requirements. Separate chemicals by adequate distance, or preferably by using physical barriers (e.g. storage cabinets). Avoid using the fume hood for chemical storage - this practice may interfere with the proper air flow of the hood. For especially dangerous materials, use a secondary container (e.g. plastic tub) large enough to contain a spill of the largest container. This chart indicates the most obvious chemical incompatibilities, and provides a basic segregation plan.

Acids

Examples: Acetic Acid; Chromic Acid*; Hydrochloric Acid; Hydrofluoric Acid; Nitric Acid*; Perchloric Acid*; Phosphoric Acid; Sulfuric Acid (*Indicates strong oxidizing acids and most of these will not be purchased or used by Daniel Hand High School.)

Storage Precautions:

- Store bottles on low shelf areas, or in acid cabinets.
- Segregate oxidizing acids from organic acids, and flammable materials.
- Segregate acids from bases, and from active metals such as sodium, potassium, etc.
- Segregate from chemicals which could generate toxic gases such as NaCN, iron sulfide, etc.

Bases

Examples: Ammonium Hydroxide; Potassium Hydroxide; Sodium Hydroxide

Storage Precautions:

- Separate bases from acids.
- Store bottles on low shelf areas, or in acid cabinets.

Flammables

Fuels are reducing agents, examples:

Acetone	Hexane
Benzene	Isopropyl Alcohol
Cyclohexane	Methanol
Ethanol	Propanol
Ethyl Acetate	Tetrahydrofuran
Ethyl Ether	Toluene
Gasoline	Xylene

Storage Precautions:

- Store in approved flammable storage cabinet(s) (required if there is > 10 gallons in the lab).

- Separate from oxidizing acids and oxidizers.
- Keep away from any source of ignition (flames, localized heat or sparks).
- Use only "flammable storage" (de-sparked) refrigerator

Oxidizers

React violently with organics (solvents, paper, wood, etc.)

Examples of Solids

Iodine

Nitrates, Salts of

Peroxides, Salts of

Potassium Ferricyanide

Sodium Nitrite

Examples of Liquids

Bromine

Hydrogen Peroxide

Nitric Acid

Perchloric Acid

Chromic Acid

Storage Precautions:

- Keep away from organic solvents, and other combustible materials (i.e. paper).
- Keep away from reducing agents.

Peroxide Forming Chemicals

Peroxides can be explosive and shock-sensitive. Examples: Ethers and acetals with alpha-hydrogen (e.g. ethyl ether, THF); Alkenes with allylic hydrogen (e.g. cyclohexene). Store tightly sealed to exclude oxygen. Label with date of receiving AND opening. Dispose within recommended guidelines – usually 6 months for ethers.

The following Peroxide-Forming chemicals will NOT be purchased or used by Daniel Hand High School:

Class B

Acetal

P-dioxane

Acetaldehyde

Ethylene glycol dimethyl ether

Benzyl alcohol

4-Heptanol

2-Butanol

2-Hexanol

Cumene

Methyl cyclopentane

Cyclohexanol

MIBK

Cyclohexene

2-Pentanol

Diacetylene

2-Propanol

Dicyclopentadiene

Tetrahydrofuran

Diethylene glycol dimethyl ether

Tetrahydronaphthalene

Diethyl ether

Trimethylbenzene

Vinyl esters

Class C

Acrylic Acid

Tetrafluoroethylene

Acrylonitrile

Vinyl Acetate

Butadiene

Vinyl Chloride

Chloroprene

Vinyl pyridine

Chlorotrifluoroethylene

Vinylidene chloride

Methyl methacrylate

Styrene

Pyrophoric Substances

Spontaneously ignite in air.

Examples: Some finely divided metals; Some organoaluminum compounds (LiAlH_4 , $\text{Al}(\text{CH}_3)_3$);

Silane; phosphorus, yellow (should be stored and cut under water)

Storage Precautions:

- Rigorously exclude air and water from container.
- Store away from flammables.

Pyrophoric chemicals will NOT be purchased or used by Daniel Hand High School.

Water Reactives

React violently with water to yield flammable or toxic gases.

Solids: Calcium carbide, magnesium, lithium, potassium, sodium

Liquids: phosphorous trichloride, thionyl chloride

Storage Precautions:

- Rigorously avoid exposure to water and air
- Store away from flammables
- Lithium, Potassium and sodium should be stored under kerosene or mineral oil

Water-reactive metals will NOT be purchased or used by Daniel Hand High School.

Highly Toxics, Carcinogens, and Reproductive Toxin

These chemicals can be very hazardous by themselves, or in combination with other chemicals. If they are easily inhaled, (gases and volatile liquids) then they are particularly hazardous.

Liquids - Seal tightly and store in a ventilated cabinet apart from incompatibles. Use secondary containment (e.g. plastic tub) to contain any spills.

Examples: Formaldehyde; Carbon disulfide; Mercury; Nickel carbonyl; Cyanide solutions

Gases - Store in a gas cabinet or other ventilated cabinet

Examples: Chlorine; Fluorine; Hydrogen chloride; Nitric Oxide; Hydrogen Cyanide

Solids - Store away from incompatibles (usually acids) that would release toxic gas upon contact.

APPENDIX H

Guide for Variable Air Volume (VAV) Hoods ("Phoenix" system)

Variable Air Volume (VAV) hoods — unlike a standard hood — automatically adjust the face velocity to stay within recommended safe work levels (~ 100 ft./min). A VAV hood is easily distinguished by the gray control box on the hood.

If the low-flow alarm engages, lower the sash until the alarm stops. **DO NOT** over-ride the safety alarm by permanently engaging the "Mute" or "Emergency" button (e.g., with tape). If your hood is consistently sounding the alarming, call maintenance.

Always work with the sash at or below the level of the red arrow indicated point shown on the hood sticker, because:

- If most building sashes are raised, this will generate a hood alarm, and at your neighbor's hood, due to the limited capacity of your building's ventilation.
- A lowered sash protects you against airborne chemicals and incidents up to 100 times more than at sash full open.
- The lower the sash, the greater the energy conservation – lower sash when not in use.
- During the performance of an experiment, store only the minimum of equipment and chemicals in your hood because:
 - Excess materials block air flow into the slots at back of the hood. Permanent equipment should be raised on a stand to allow the air flow into the lower slot.
 - Most lab fires/explosions occur in hoods. Minimizing chemical volumes will reduce the chances of a small accident escalating into a large one.
- Always work at least 6 inches inside the hood to maximize hood capture efficiency.

APPENDIX I

Flammable Liquid Safety

Safety Precautions

All flammable liquids found in school environments are also organic compounds. Their principal hazard is flammability. Many are also slightly toxic by inhalation and are body tissue irritants. Mild headaches or dizziness may be a symptom of overexposure to an organic vapor. Good ventilation is highly recommended whenever volatile organic compounds are used. Specific hazards for common organic solvents are presented in this review. Always wear chemical splash goggles, chemical-resistant gloves, and chemical-resistant apron whenever using flammable liquids. Consult current Material Safety Data Sheets for specific safety, handling, and disposal information.

Using and Dispensing Flammable Liquids

- If volatile organic solvents are going to be used, the lab must be well ventilated or have a working purge fan to ventilate the lab. The laboratory should also be equipped with one or two ABC, dry chemical fire extinguishers and fire blankets
- In addition to the other normal safety equipment (safety eyewash, safety shower, etc.).
- Always review the SDS before using any hazardous material in the laboratory.
- Flammable liquids should not be mixed with strong oxidizing agents. As the organic material is oxidized, heat is evolved and may ignite the material resulting in a fire.
- Extreme care must be taken when using flammable liquids around any heat source, flames, or electrical equipment. Laboratory equipment (stirrers, meters, etc.) are designed to be spark proof, but limiting vapors is always a good safety precaution.
- Organic vapors are heavier than air and will quickly travel along a lab bench or floor to an ignition source. Never use flammable liquids around an ignition source. Try to minimize the amount of volatile liquids used and be aware that organic vapors can travel great distances.
- Flammable liquids are very volatile. Dispense them in an operating fume hood.
- Use lab mats and/or plastic trays when dispensing organic solvents to contain spills and drips.
- Students should dispense flammable liquids from smaller bottles to limit spills and fumes. Do not allow students to dispense flammable liquids from containers larger than 1 liter. Larger volume containers increase the possibility of contamination and also increase the amount of fuel that will be available in case of a fire.
- During lab, dispense the flammable liquid from a central dispensing location and have students bring a graduated cylinder or test tube to the dispensing area. This will help to minimize spills and accidents as well as limit the amount of flammable liquid being transported back to the lab bench.

- Instruct students to remove only the amount of flammable liquid needed for the experiment from the reagent bottle. Never add chemicals back to reagent bottles.
- Have spill cleanup materials readily available whenever flammable liquids are used. If a spill occurs, immediately restrict unprotected personnel from the area, remove all ignition sources, and ventilate the area. If the spill is too large to contain, the vapors are overpowering, or ignition sources cannot be completely removed, immediately evacuate the school and call the fire department. If the spill is small, contain the spill with sand or an absorbent material. Depending on the spill material and the amount, allow the spilled material to evaporate off the sand or absorbent material in a fume hood or deposit it in a sealed bag or container.

Personal Protective Equipment and Safety Aids

- Consult the SDS for the specific personal protective equipment required and other safety precautions for the flammable material being used.
- Neoprene rubber gloves are recommended for use when handling organic solvents. Plastic or vinyl gloves will provide some protection against the occasional splash, small spill, and splatter that may occur when using or dispensing solvents.
- Operating eyewashes must be available in any classroom or laboratory where chemicals are used. Approved eyewashes must treat both eyes and provide a stream of clean, potable water for at least 15 minutes.
- Chemical splash goggles must be worn anytime flammable liquids are used. Safety glasses are not adequate protection.
- During demos, it is very important that students wear chemical splash goggles anytime flammable liquids are used. The possibility of an explosion or fire always exists and both students and teachers must be protected. If safety goggles are not available, use a heavy duty safety shield to protect your students.

First Aid

- Always seek professional medical attention upon exposure to any hazardous chemical, especially volatile organic solvents. For most organic solvents, the major hazards are flammability and inhalation. If there is a spill or accident, immediately remove any flames, heat, or electrical equipment from the area and begin to ventilate the area.
- If an organic liquid is splashed in the eyes, use an eyewash to irrigate the eyes with fresh, potable water for at least 15 minutes. Make sure the eyelids are held open to properly irrigate them. Ask the victim to look up, down, and sideways to better reach all parts of the eye. After using the eyewash, immediately seek professional medical help.
- If a flammable liquid is splashed onto bare skin, rinse the area with cool water for at least 15 minutes. Many organic solvents will “dry out” the skin and cause minor dermatitis. If the liquid causes burns or other skin irritations, seek medical help immediately.
- If a large amount of flammable liquid is splashed onto clothing, consider removing the clothing immediately and placing the clothing in a fume hood or outdoors. If flammable

liquid splashes onto your skin and clothing, remove clothing and then begin rinsing the affected areas with water (using the safety shower is ideal).

- If an organic liquid is ingested, please consult the SDS and immediately contact the school's Health Office or call the poison control center (1-800-222-1222) or local hospital emergency room. Follow their directions and seek medical attention as soon as possible. For most organic solvents, the goal is to trap the chemical in the stomach and prevent further injury caused by vomiting. Activated charcoal is sometimes given to help trap the chemical. **Do not** give the victim anything to drink or induce vomiting unless instructed by a medical professional.

APPENDIX J

Safety Guidelines for Chemical Demonstrations

(Guidelines from the American Chemical Society—Division of Chemical Education)

Chemical demonstrators must:

1. Know the properties of the chemicals and chemical reactions involved in all demonstrations presented.
2. Comply with all local rules and regulations.
3. Wear appropriate eye protection for all chemical demonstrations.
4. Warn the members of the audience to cover their ears whenever a loud noise is anticipated.
5. Plan the demonstration so that harmful quantities of noxious gases (e.g., NO₂, SO₂, H₂S) do not enter the local air supply.
6. Provide safety shield protection whenever there is the slightest possibility that a container, its fragments, or its contents could be propelled with sufficient force to cause personal injury.
7. Arrange to have a fire extinguisher at hand whenever the slightest possibility of fire exists.
8. Not taste or encourage spectators to taste any nonfood substances.
9. Not use demonstrations in which parts of the human body are placed in danger (such as placing dry ice in the mouth or dipping hands into liquid nitrogen).
10. Do not use “open” containers of volatile, toxic substances (e.g., benzene, CCl₄, CS₂, formaldehyde) without adequate ventilation as provided by fume hoods.
11. Provide written procedure, hazard, and disposal information for each demonstration whenever the audience is encouraged to repeat the demonstration.
12. Arrange for appropriate waste containers for and subsequent disposal of materials harmful to the environment.

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Additional safety guidelines from Flinn Scientific Inc.

1. Always practice all demonstrations before performing them in front of students. A demonstration should only be attempted after all the potential pitfalls and hazards have been identified.
2. Never attempt a demonstration that will place you or your students at risk.
3. Have students wear safety goggles or use a safety shield if there is the slightest possibility that a container, its fragments or its contents could be propelled with sufficient force to cause personal injury. A good rule of thumb is if heat or pressure are involved, audience protection is required.
4. If heat is involved in the demonstration, make sure all glassware is borosilicate (e.g., Pyrex®) glass and check for chips and cracks before using.

5. If a flammable liquid is used in a demonstration, make sure to cap all reagent bottles after dispensing the appropriate quantities and be aware of heat sources and flammable vapors. Never repeat a demonstration using flammable liquids until all containers and surfaces are cool to the touch.
6. Use fresh chemicals and clean glassware to prevent possible contamination.
7. All demonstrations should have an educational objective. If the demonstration uses toxic chemicals or a potentially hazardous procedure, review the demonstration again and be sure it has educational benefits.
8. Always ensure that electrical devices are properly grounded and inspect every electrical circuit before turning the current on.

APPENDIX K

Safety References

Your plan for teaching science safely and in compliance with OSHA regulations should include provisions for a library of safety-related materials. The following resources will be useful additions to your library.

Art Hazards News, Center for Safety in the Arts, 5 Beekman St., Suite 820, New York, N.Y. 10038.

CHEMECOLOGY, Chemical Manufacturers Association, 2501 M St. N.W., Washington, D.C.

Chemical Catalog Reference Manual, Flinn Scientific Inc., P.O. Box 219, Batavia, IL 60510-1261.

Chemical Health and Safety, American Chemical Society, Division of Chemical Health and Safety, Publications Marketing Dept., 1155 Sixteenth St. N.W., Washington, D.C. 20077-5768, 1994.

Compliance Magazine, HIS Publishing Group, P.O. Box 512, Libertyville, IL 60048-0512

Developing a Chemical Hygiene Plan, Jay A. Young, Warren K. Kingsley, George H. Wahl, Jr., American Chemical Society, 1155 16th St., N.W., Washington, D.C. 20003.

Flinn Fax! Flinn Scientific Inc., P.O. Box 219, Batavia, IL 60510-1261.

Life Safety Code Handbook, National Fire Protection Association, 1 Battermarch Park, P.O. Box 9191, Quincy, MA 02269-9904, 1994.

Manual of Safety and Health Hazards in the School Science Laboratory, Laboratory Safety Workshop, 101 Oak St., Wellesley, MA 02181-4723.

NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Prudent Practices in the Laboratory: Handling and Disposing of Chemicals, National Academy Press, 2101 Constitution Ave., Washington, D.C. 20418, 1995.

Safety in the Elementary Science Classroom, Robert A. Dean, et al., National Science Teachers Association, 1840 Wilson Blvd., Arlington, VA 22201-3000.

Safety News, VWR Scientific, 6411 Ivy Lane #714, Greenbelt, MD 20770-9888.

Understanding Chemical Hazards: A Guide for Students, American Chemical Society, 1155 16th St., N.W., Washington, D.C. 20003.

Written Hazard Communication Program for Schools and Colleges, Forum for Scientific Excellence, Inc., J.B. Lippincott Co., East Washington Square, Philadelphia, PA 19105.

Websites

Environmental Protection Agency

<http://www.epa.gov/enviro/html/emci/chemref/index.html>

OSHA

<http://www.osha.gov/safelinks.html>

National Institute for Occupational Safety and Health (NIOSH)

<http://www.cdc.gov/niosh/homepage.html>

Additional Information for the Science Teacher

Steps You Can Take to Prove You're a "Responsible" Science Teacher (this was produced by Flinn Science, Inc.)

Student X had a bad accident involving a chemical he obtained at school. As a senior in high school chemistry, the student was able to obtain a sizeable piece of elemental potassium from the stockroom. He wrapped the potassium in a paper towel and placed it inside his front pants pocket. Soon after, he walked home and by the time he was inside his house, the potassium spontaneously ignited and caught his pants on fire. The student sustained third-degree burns to his leg and abdomen and required skin grafting.

All science teachers dread the thought of having this type of "event" occur at their school. Who's responsible? The teacher? Student? School? A good definition for "who is responsible" is: "If you can reasonably foresee the consequences of what you're about to do, or are not about to do, you will be held responsible."

Today's science teachers must not only act responsibly, they must also be prepared to prove to others how they acted responsibly. Below are a few inexpensive ideas you can use in your classroom to document that you are a responsible science teacher.

Every member of the Science Department has been issued a copy of the Laboratory Manager's Professional Reference (Holt Science) and it is expected that each instructor has made themselves familiar with this reference.

Safety Agreements

On the first day of class every science class, you need to establish a contractual relationship with your students. (It is important to know that a student who takes a 1 trimester course and has completed a safety agreement **MUST** complete a new safety agreement if he/she enrolls in another course for a new course in the next trimester, i.e., one safety agreement **DOES NOT** cover a student for any other science course they may enroll in. A student safety agreement is a detailed listing of all of the rules of the laboratory. Review the safety agreement with your students and have them sign and date it. Students should then take the agreement home so their parents or guardians can review and sign the agreement as well. As a responsible science teacher, you think safety is so important that you want the parents to be involved the very first day of school. If the student, or parent, does not sign the agreement, the student will not be allowed to participate in any laboratory activity and will be given a failing grade for each day missed.

- Does the safety agreement have any legal weight? No, it does not. However, it does tell the students and parents that you are very serious about safety. Signed safety agreements will also go a long way in establishing that you are a responsible science teacher. Signed safety agreements document that the rules of the laboratory have been reviewed by all of the students in your class and you have their signatures to prove it.

Lesson Plans

- Your lesson plan book is a very valuable document to have should you ever have to prove to someone that you are a responsible science teacher. Your lesson plan book is your personal journal or diary that documents all of the activities you have done in class for the entire school year. Your lesson plan book is also a great place to document all the safety discussions you have with your students.
- Every time you discuss safety in class, jot down in your lesson plan book what you talked about. For instance, the day you discuss the safety contract, your lesson plan book should note that the safety contract was reviewed and discussed. Every time a lab or demonstration is done, select one of the rules from the safety contract, remind the students of the rule, and make note in your lesson plan book accordingly. Responsible science teachers constantly reinforce safety rules every day and get in the habit of writing in their lesson plan book what was discussed.

Safety Posters

Your students are visually oriented. Bright, colorful safety posters throughout the classroom/laboratory will help remind students that safety is important. While we would love for you to order our Flinn Scientific Safety Posters, we urge you to have students make their own. The next time you are absent from school and a substitute teacher watches the class, make that day a "safety day!" Provide the students with crayons, poster board, paper, and markers and have them make safety posters based on the safety contract. Decorate the walls with their homemade posters. Of course, your lesson plan book will clearly show that you think science safety is so important that your students spent the entire day making safety posters. What would normally have been a video day or worksheet day has now become an important safety day!

Firm Goggle Policy

A responsible science teacher must adopt a firm goggle policy. The policy we hope your school will adopt is "Any time chemicals, glassware, or heat is used, you must wear your laboratory goggles. No exceptions!"

Chemical Terms

When discussing laboratory safety the first couple weeks of school, you will be using terms like corrosive, flammable, oxidizer, etc. Do your students understand the meaning of these terms? Probably not! Try to explain and demonstrate to students what these terms mean.

Conclusion

"If you can reasonably foresee the consequences of what you are about to do, or are not about to do, you will be held responsible." Begin to implement some of the ideas we have suggested. Safety contracts, lesson plans, safety posters, a firm goggle policy, and definition of terms, will all go a long way in helping to prove you are a responsible science teacher.

Where and Why Science Accidents Occur

In 1996, Larry Duff, Ed.D. of Omaha, Nebraska released the results of a lab safety survey he conducted of junior and senior high school physical science/chemistry teachers in Nebraska. The response rate to his survey was over ninety-five percent.

Two very important findings came out of this survey.

- In grades 9-12, seventy percent of all accidents occurred at the ninth grade level.
- Ninety-three percent of all teachers surveyed said the largest reason for accidents occurring in the science lab was "Students' failure to carefully read and understand laboratory activity instructions."

Accidents occur because of "students' failure to carefully read and understand laboratory activity instructions". When told of this data, teachers simply nod their heads in agreement. If students did a better job following written and verbal instructions, fewer accidents would occur. What can educators do to help solve this problem? Here are a few possible solutions:

1. Instead of the teacher presenting the prelab safety instructions, have one of the student lab teams present the prelab safety instructions. A portion of their lab grade can be based on their prelab safety presentation. Depending on the number of labs you do a year, each student lab team should be able to prepare and present the prelab instructions 2-3 times a year. Students can consult their *Lab* manual, review Safety Data Sheets, look through the *Flinn Scientific Catalog/Reference Manual*, consult reference books like the Merck Index or perhaps even go "on-line" to reference safety information via the Internet. Students will learn and understand important safety rules if they have to do the research and present safety instructions to their peers. Maybe the safety message you want your students to hear will be better understood when it's coming from someone other than you.
2. Another possible solution is to pretest students on the techniques, procedures and safety information they must know in order to successfully perform the lab experiments. Students who don't pass the pretest, miss the lab experiment and receive a zero. Yes, a zero is harsh, but students need to understand that they cannot enter the lab and perform an experiment unless they fully understand what they are doing.
3. Make sure students read and understand the safety rules you have established in the science lab for conduct and behavior. A detailed safety contract outlining the rules of the lab must be the foundation of your science safety program. Discuss these rules and reinforce them throughout the school year.

The data in Dr. Duff's survey is invaluable. For the first time we have data which not only tells us where most of the high school science accidents occur, but also why. Give ninth

grade science students an extra dose of safety training and let's develop techniques to ensure students are prepared to perform lab experiments properly and safely.

Practical Solutions for Instructors to Reduce Their Liability

Teaching science is different than teaching other academic subjects because to properly teach science, students must receive instruction and engage in appropriate hands-on activities. More importantly, science teachers must teach in an environment using materials and equipment that have the potential to cause serious harm to both teacher and student. Science teachers must be trained in more than just teaching methods and classroom management. They must also receive specific training in laboratory safety. Science teachers must know, understand, and follow many rules and regulations to ensure the safety of students in their classrooms. Science teachers also owe their students a duty of care to properly supervise, instruct, maintain equipment and facilities, and warn students of potential harm in their classrooms. Accidents will happen in the classroom.

Teachers can, however, significantly reduce their risk of negligence liability and prevent classroom mishaps by following a few simple rules.

- Know the safety statutes that affect your classroom and carefully abide by them.
- Check with the State Department of Education, State Occupational Safety and Health Administration for statutes and regulations that apply to your classroom. At a minimum, each school should have in place an up-to-date Chemical Hygiene Plan (CHP) that describes the safety procedures that are required at your school.
- Document all efforts to resolve safety issues in your classroom. Any safety issues or equipment problems that need repair must be carefully documented in writing and submitted to the proper administrator for immediate action. If you cannot successfully resolve the issue at the site level, send a letter to the superintendent or school board describing the problem, your efforts to correct the condition, and possible solutions for resolving the problem. Attach copies of your documentation. Save all letters and documentation.
- Do not leave your classroom during any instructional period. Every teacher has a primary duty to properly supervise students. Never leave students unsupervised for any reason.
- All students should wear the appropriate personal protective equipment while working in the laboratory. Chemical splash goggles, and chemical resistant aprons should be worn whenever any chemicals (no matter how minimal the risk of perceived injury) are to be used by students. Protective eyewear must be worn during all laboratory activities and demonstrations.
- Teach safety all year and review safety procedures often. Teachers have a duty to provide proper safety instruction. Start the year with a student safety contract. Then get in the habit of reviewing a safety rule every day at the beginning of lab. It is critical that you review the appropriate safety precautions with students prior to beginning any laboratory activity. Remember to document all safety instruction that you provide in your lesson plan book.

- Make safety a priority in the classroom by establishing and modeling safe chemical handling practices. Set a good example for your students by always wearing appropriate personal protective equipment and performing laboratory procedures in a safe manner. Not only will your actions speak louder than words to your students, but if an injury to a student occurs, their attorney will not be able to use your good practices against you.
- Use smaller volumes and amounts of chemicals. Smaller chemical quantities result in smaller spills, reduced vapors, and less material for disposal. Smaller chemical quantities also usually result in less severe injuries to your students. Microscale as many labs as possible, particularly those that use volatile or hazardous chemicals.
- Demand appropriate safety training related to your duty of care in the science classroom. Your school district is responsible for appropriate training to enable you to meet your duty of care in the classroom. Science laboratories are industrial areas requiring specialized training and knowledge that must be updated frequently.
- Do not permit students to use damaged or defective equipment. Damaged or defective equipment can cause serious harm to students. Until the equipment can be repaired, do not use it. If the conditions of your laboratory facility are unsafe, then document the safety issues and do not permit laboratory activities until the conditions are remedied.
- Do not permit students to take chemicals or any other school equipment home to perform “experiments.” Theft of unlocked chemicals, performance of unauthorized experiments, and unsupervised home experiments expose students to potential injury and teachers to negligence liability.
- Be proactive rather than reactive.

Connecticut Science Supervisors Association

Responsibilities of the Teacher

The science teacher's responsibilities begin with a duty to offer appropriate instruction to students. In a laboratory situation, this requires that careful attention be given to the materials and techniques used by both teacher and student. The location and proper use of emergency equipment, evacuation procedures, and proper procedures for the handling of supplies and equipment should be taught in formal, planned lessons (See Appendix B for the Student Safety Agreement.) Students should be tested formally on the topics, and the material should be reviewed and reinforced periodically.

Specifically, directions for laboratory activities should be provided in *written* form, with the instructor reviewing the directions with students before the activity is done. In discussing the activity, the teacher should remind students of the procedures to be followed and of appropriate methods for the safe use and disposal of materials to be used. Students' knowledge and practice of laboratory safety techniques should be evaluated on an ongoing basis by the direct observation of students in laboratory situations, and the inclusion of safety-related questions on tests and quizzes administered throughout the year.

The requirement for appropriate instruction extends also to field trips and to projects done outside the school, e.g., as part of science fairs or exhibits. Even if the activity is being done as a "home" assignment, the teacher must be aware of the materials the student is using and must determine that safe procedures are being followed. The same safety guidelines used for in-class laboratory activities should be applied to out-of-class projects, whether they are independent science projects or school-related investigations. Written parental or legal guardian permission should be obtained before a student embarks on any out-of-school independent science project. In the case of a science field trip or planned class outdoor experiment, emergency medical information as well as written permission must be provided. Where necessary, specialized safety equipment may be required and should be available.

A second responsibility of the teacher is that of adequate supervision of student activities. The laboratory is a potentially dangerous environment, requiring the careful attention of the instructor. Lessons in laboratory safety should emphasize appropriate student behavior. Students should not conduct laboratory activities without supervision, and should be allowed in the laboratory only if the teacher is present. It is recommended that short-term substitute teachers not be permitted to conduct laboratory activities. If an extended teacher absence requires that regular classwork continue, the long-term substitute teacher must be both certified and qualified to conduct laboratory investigations.

Special-needs students may require an increased level of supervision. It is important that these students be active participants in the science program. However, their safety is the greatest consideration. The teacher must take into account the limitations and abilities of each special-

needs student and decide, on an individual basis, which experiments are appropriate for each one of these students to perform. Handicapped stations, both portable and those that can be permanently installed in a lab room, are available.

While teachers are aware of the need to exercise care in the use of chemicals, they must also be alert to the potential hazards in the biological and physical science laboratories. For example, the teacher must provide adequate instruction and supervision in students' use, handling, and disposal of live and preserved specimens. The physical science laboratory may present problems related to the use of electrical devices or in the handling of projectiles. Finally, the teacher must develop an awareness of potential allergens which may be used in the laboratory or which may pose a hazard in laboratory, field trips, or outdoor investigations.

Since the maintenance of a safe laboratory environment is an additional responsibility of the science teacher, the teacher must be aware of, and take steps to correct, unsafe conditions. The written notification of supervisors should be followed by additional requests for the correction of the problem, and documentation of the requests should be maintained by the teacher. (See Appendix A for sample forms.)

Additional concerns for the science teacher are the physical design and the condition of the laboratory. Of particular importance are:

A. Safety Equipment and Supplies

The Occupational Safety and Health Administration (OSHA) requires the presence of eyewash fountains and safety showers. Fire extinguishers and fire blankets should be a part of the basic equipment of every laboratory. The local fire marshal can be a source of information as to the appropriate type and placement of extinguishers. State and local codes will dictate the presence and location of shut-off valves for gas, electricity and water in the laboratory, as well as for the installation of ground-fault interrupters.

Materials for the containment and clean-up of chemical spills should be readily available. Commercial spill kits may be purchased from most school laboratory supply companies. Teachers or staff members who administer emergency treatment are protected from civil damages for ordinary negligence if they have satisfactorily completed a course in first aid with a local health department or with one of several organizations, such as the American Red Cross.

Each school district's purchasing agent will be able to provide the names of companies specializing in safety and emergency equipment and supplies. Also, the National Science Teachers Association publishes a document containing the names of suppliers of safety and emergency equipment and materials. A list of resources is given in the Appendix K.

B. Chemical Purchase, Storage, Disposal

While some element of risk is inherent in most laboratory activities, the responsibility of assessing the hazards and usefulness of chemical reagents is of particular concern to the teacher. The following should be considered when deciding on the chemicals to use in the science program:

- Identification of chemicals requiring particular care in handling, storage, and/or disposal;
- Identification and subsequent elimination of chemicals deemed too hazardous for use in a school science laboratory; and
- Revision of existing laboratory experiments which employ materials and/or procedures deemed too hazardous for use in a school science laboratory. The teacher is advised to consult professional literature on a regular basis in order to ensure that information is both current and correct.

Security is a vital element of chemical storage. All storage rooms and cabinets should be kept locked. The storage of chemicals in classrooms is inappropriate. Although alphabetical arrangement of chemicals is convenient, it may result in incompatible chemicals being placed in close proximity to one another. Recommended storage patterns may be found in the references listed in the Appendix G.

For reasons of health and safety, OSHA guidelines require the maintenance of a current chemical inventory. A copy of the inventory must be available, and the location of hazardous and flammable chemicals should be noted. In order to ensure that school personnel have access to information on hazardous chemicals present in the school, OSHA guidelines require the creation and maintenance of a file of Safety Data Sheets (SDS).

Proper maintenance of stored chemicals includes periodic inspections for signs of aging or deterioration of both the chemicals and their storage containers. Aging and deteriorating chemicals, chemical waste generated by the science program, and unwanted hazardous chemicals must be disposed of in an appropriate manner. The U.S. Environmental Protection Agency has identified reagents that present specific risks to the environment. It has specified procedures for the disposal of these reagents. Chemicals identified as hazardous must be disposed of in licensed landfills, and must be transported to these landfills by licensed disposal services. The Connecticut State Department of Environmental Protection maintains lists of licensed waste handlers and of state-licensed disposal companies. Since the cost of disposing of unwanted chemicals can be considerably greater than their purchase price, the teacher is advised to become familiar with disposal requirements before chemicals are purchased.

Copies of the Chemical Hygiene Plan, the Standard Operating Procedures, the Hazard Communication Program, and Materials Safety Data Sheets must be kept on file and be readily accessible to all school personnel.

C. Standards for Class Size

This section has been vastly reduced in size due to a waiver received in July, 2014 from the Fire Marshal for the Town of Madison which stipulates that, due to proper safety features in each science classroom, Daniel Hand High School is exempt from the minimum square footage requirement for science classrooms and can maintain their current policy of a maximum of 24 students per each science course that has a laboratory requirement as a requirement for the course.

Please see Appendix C for the documentation received for the two (2) waivers that Daniel Hand High School has been granted by the Fire Marshal for the Town of Madison.

NOTE: Remember that because you are a licensed science education professional, there is an expectation by the legal system relative to your performance. The science educator may determine, based on these safety codes/standards, that it is in fact unsafe in their science laboratory to conduct certain experimentation. In such cases, the science educator needs to consider alternatives for the short term such as altering the curriculum or omitting unsafe laboratory activities. The legal system would not look favorably on a science professional who was aware of an unsafe working environment, but didn't attempt to effect any change and had a safety incident. Negligence and liability can be very costly for all involved! Science can be fun, a learning experience and safe. In the long term, it takes knowledge, planning, commitment and cooperative initiatives with the school's administration/board of education to provide for a laboratory with a safe working environment.

By Dr. Ken Roy

Dr. Ken Roy is the Director of Science & Safety for Glastonbury Public Schools in Glastonbury, CT, an authorized OSHA instructor, and a member of the Board of Directors of the Laboratory Safety Workshop.

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Walter
Polson
Middle
School
Science
Department
Chemical
Hygiene
Plan

September 1, 2021 to June 30, 2022
Note Changes in red

Walter Polson Middle School Science Department Chemical Hygiene Plan

In accordance with the Federal Laboratory Standard and the Connecticut State Department of Education guidelines and the CT-OSHA Laboratory Standard, the Madison Board of Education and Superintendent recognize their responsibility for the protection of their employees. The attached chemical hygiene plan is therefore instituted to assist the overall safety program for the high school's Science Department staff. Representing the Madison Board of Education, the Superintendent hereby appoints Paul T. Mezick to be its high school Science Department's Chemical Hygiene Officer for the **2021-22** school year.

Although we have designated a Chemical Hygiene Officer, we realize that the success of the Chemical Hygiene Plan rests with all employees. The ultimate responsibility for the Chemical Hygiene Plan rests with the School District, Superintendent and the Madison Board of Education.

Paul T. Mezick

Date 9/3/2021

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Introduction

This Chemical Hygiene Plan applies to all science classrooms, laboratories and chemical store rooms/prep rooms in Walter Polson Middle School; specifically, Rooms 12 (Storage) 20, 21, 22, 24, 24A, 35, 36, 37, 39, 41 and 43. This Chemical Hygiene Plan has been developed in conformance with OSHA regulations at 29 CFR 1910.1200, known as the “Hazard Communication Standard” and 29 CFR 1910.1450, known as the “Laboratory Standard”.

The Laboratory Standard outlines the basic components of a Chemical Hygiene Plan, as follows:

- Standard Operating Procedures, i.e. general laboratory rules and procedures relevant to health and safety considerations
- Criteria the School System will use to determine and implement control measures to reduce exposure to chemical hazards, e.g. Engineering Controls (hoods, eyewashes, etc.), administrative procedures (SOPs), and use of Personal Protective Equipment (PPE)
- A requirement that hoods and other protective equipment are functioning properly
- Provision for employee information and training
- The circumstances under which a particular laboratory procedure will require prior approval from the School System or its designee
- Provisions for medical consultation and examination in the event of a chemical exposure
- Designation of Chemical Hygiene Officer and others personnel that are responsible for enforcement of this Chemical Hygiene Plan
- Provisions for additional employee protection for work with particularly hazardous chemicals

This Chemical Hygiene Plan is to be reviewed and updated annually.

A. General Employee Rules and Procedures

Conditions for employment in science classrooms require that teachers and other employees abide by the following principles and guidelines, especially when working with chemicals for instructional purposes.

1. Take proven measures to minimize all chemical exposures.
2. Avoid skin contact or inhalation of chemicals
3. Wear safety goggles and other necessary Personal Protective Equipment at all times when working with chemicals.
4. Know and understand the hazards for any chemical used. Know and understand the procedure for proper use, handling, storage and disposal of any chemicals used.
5. Ensure that classroom occupants have unrestricted access to basic safety equipment including a fire blanket, safety goggles, fire extinguisher, eyewash, and shower station.
6. Properly label all chemicals dispensed including those temporarily stored in a classroom. Include special hazard(s) where appropriate.

7. Do not store chemicals in a classroom for extended periods. If chemicals are to be stored for several days in order to perform a scheduled experiment, then all potentially hazardous chemicals must be stored in a locked cabinet.
8. Only authorized personnel are allowed in chemical storerooms.
9. In the case of teachers or students performing demonstrations, a teacher should perform and document a hazard risk assessment, provide a safety briefing to students, and place a safety barrier (as required) between the audience and the demonstration.
10. Know where and how to use master utility controls to shut off gas, electrical and water supplies. Gas jets must be turned off when not in use.
11. Do not dispense chemicals directly from a stock bottle nor return dispensed chemicals to a stock bottle.
12. Inform students and support staff of the locations of classroom safety devices (e.g., eyewash, fire extinguisher, etc.). Provide instruction on how to properly use classroom safety devices during a laboratory emergency.
13. Require all students to return signed Polson Laboratory Safety Agreement for each science course, and to pass a science safety assessment
14. No experiment should be conducted in a laboratory in which the exhaust system is not properly functioning. If, while running an experiment, the exhaust system fails for any reason, the experiment must be halted and all exposed chemicals properly sealed.
15. Certain chemicals must only be used in the fume hoods. If the fume hood is not working properly, the chemical cannot be used until the hood is repaired.
16. No more than the legal occupancy limit of students is are allowed in the lab.
17. All laboratory users, including, but not limited to instructors and students, shall be trained prior to laboratory use and at least annually on the Emergency Evacuation Plan (page 11 Chemical Hygiene Plan).
18. The Madison School System reserves the right to prohibit the purchase or use of certain particularly hazardous chemicals that would endanger staff and students.
19. The Madison School System will not allow any staff member to facilitate laboratory instruction who is not properly trained in the Chemical Hygiene Plan, the safe handling of chemicals or other science-related hazards.

B. General Laboratory Rules and Procedures for Students

To insure that all chemistry laboratory experiences are safe, positive experiences, the student will be required to abide by all of the following guidelines:

- a. All students will be issued a Laboratory Safety Acknowledgement. They will return a copy of this acknowledgement, signed by both the student and the parent or guardian. This acknowledgement is required for participation in laboratory activities. It will be kept on file by the instructor.
- b. Always conduct yourself in a responsible manner at all times. No horseplay or other fooling around should ever occur in the laboratory.

- c. Work only in your assigned lab station. Please do not wander around the room and distract other students or interfere with their work.
- d. Be properly prepared to conduct all experiments. Read written procedures in advance. Many experiments will have special safety instructions and techniques. Pay attention to laboratory safety instructions and be sure you understand what you are doing before you proceed.
- e. Wear the appropriate Personal Protective Equipment as designated by your instructor. Wear safety goggles, gloves, aprons, and face shields where required. Failure to use proper protective equipment may result in your being expelled from the classroom.
- f. Perform all experiments as directed. Do not do anything that is not part of an approved experimental procedure. Follow all instructions, both written and verbal, that are provided by your instructor. Obtain approval before making any changes. Do not perform any unauthorized experiments.
- g. Never work alone in the laboratory without instructor supervision.
- h. Wear appropriate clothing in the laboratory. Shoes should cover the entire foot, clothing should not be loose and floppy, especially the sleeves.
- i. Tie back long hair to keep it away from flames and chemicals.
- j. Keep the aisles clear at all times. Put large book bags completely under the tables or leave them in your locker. Push stools and chairs under the tables when they are not in use.
- k. Know the locations of the fume hoods, eyewash, fire blanket, and fire extinguishers.
- l. Absolutely no food or beverages for human consumption are allowed in the laboratory area. Do not eat in the laboratory area.
- m. Never take chemicals, supplies or equipment out of the laboratory without the knowledge and consent of the instructor.
- n. Do not enter the laboratory chemical stockroom without specific permission from your instructor.
- o. Handle all chemicals with care. Never taste a chemical. Check odors when instructed to do so by gently wafting some of the vapor toward your nose by hand.
- p. Read chemical labels and hazard warnings very carefully. Make sure that you have the correct substance in the correct concentration. Check the label twice before removing any of the contents. Review the instructor's safety instructions for handling hazardous materials.
- q. Report all accidents, spills, or injuries to your instructor immediately.
- r. Always protect the balance pans when weighing chemicals. If you spill material, clean it up immediately. Never return chemicals to the original stock bottles.
- s. Use the fume hood or make appropriate provisions for trapping hazardous gases that might be evolved during an experiment.
- t. Clean up spills immediately. Clean all lab equipment when you are finished with the laboratory experiment. Return your equipment to the place designated by your instructor when you are finished.

- u. Dispose of waste chemicals properly according to your instructor's instructions. Do not put hazardous chemicals or other solids in the sinks.
- v. If you break any glassware, inform your instructor and list the item broken on the breakage inventory sheet (See Appendix G for a sample sheet).
- w. Turn off your Bunsen burner when it is not in use.
- x. Treat burns immediately by putting the burned area under cold water.
- y. Do not leave glass thermometers unattended. Store them between the water tap and gas jets when you are not actually using them.
- z. I agree to provide my instructor with a list of allergies or other medical problems that could endanger my safety in the laboratory.

C. Personal Hygiene Guidelines for Instructors and Students

1. Do not eat or drink, or apply cosmetics in the laboratory.
2. Wash your hands thoroughly after working in the laboratory.
3. Never smell chemicals directly.
4. Never bring foods, open or closed into the laboratory.

D. Protective Clothing Requirements for Instructors and Students

1. Eye protection must be worn at all times when working with chemicals in the laboratory.
2. Additional safety clothing such as aprons and gloves may be required when the experiment warrants it. These **MUST BE WORN** if your instructor requires it.
3. Wear closed-toe and low-heeled shoes.
4. Do not wear clothing with loose or balloon sleeves that will get in the way of chemicals, flames or other objects.
5. Avoid ties and hanging jewelry.
6. Keep book bags and personal items out of the aisles and emergency exits.

E. Instructor's 'Housekeeping' Rules

1. Do not keep chemicals that are not involved in a current experiment stored in your lab. Chemicals that are involved in a current experiment should be either stored in a working hood or placed in a locked cabinet.
2. Properly dispose of waste chemicals.
3. Waste disposal containers should be properly marked.
4. All chemicals including solutions should be properly labeled with hazards.
5. All spills should be cleaned up promptly and properly.
6. Work areas and floors should be cleaned regularly.
7. Access to all safety equipment must be kept clear at all times.
8. If a circuit breaker panel box is located in a room, it must be (a) kept locked, and (b) the outlined area marked on the floor must be kept clear at all times.

9. The main gas supply for the student lab stations must be turned off via the emergency shut off switch when not in use.

F. Accidents and Spills

In the event of an emergency, all students will be evacuated from the laboratory using the nearest exit. Students will exit using the posted classroom evacuation route. All chemical spills will be cleaned up immediately using approved spill cleanup procedures.

- A Type ABC fire extinguisher will be kept available in each chemistry lab.
- A supply of sodium carbonate will be available to neutralize acid spills.
- A supply of spill cleanup absorbent will be available to contain spills.

G. General Chemical Storage Rules for the Chemical Hygiene Officer

1. An updated inventory will be kept detailing all chemicals in stock and their location. Stored chemicals will be inspected periodically.
2. All stored chemical solutions will be labeled with the chemical identity, concentration and hazard information
3. All new chemicals will be dated on arrival.
4. Chemicals will be stored in a separate secure area.
5. All incoming chemicals will be opened and transported by qualified science teachers.
6. All chemicals will be stored in compatible chemical groupings using an approved storage scheme (such as Flynn Scientific's system).
7. All flammable chemicals will be stored in approved flammable storage cabinets, away from ignition sources and oxidizers, out of direct sunlight and at the recommended temperature.
8. Chemicals will not be stored under fume hoods.
9. The chemical storage area will be labeled to properly identify the hazardous chemicals that are stored within.
10. Storage areas should be well ventilated with continuous ventilation to the outside air (no recirculation of storage room air is allowed).
11. Food shall not be stored in a laboratory refrigerator.
12. Chemicals shall not be exposed to heat or direct sunlight.
13. Compressed gases shall be handled as high energy sources and therefore potential explosives.
14. Corrosives will be stored in separate corrosive cabinets. Nitric Acid and Acetic Acid will be stored separately from other acids.
15. The only water-active solid that Polson School will purchase or order is Calcium and extreme care will be exercised in its use.

H. Specific Safety Rules for Hazardous Chemicals and Biologicals

1. No chemicals that emit potentially hazardous vapors will be used or purchased by Polson School.
2. Mutagens and teratogens will not be purchased or used in the laboratory.
3. Special care and handling will be exercised when using any chemical that is corrosive or toxic.
4. No alcohol lamps will be purchased or used.
5. No Peroxide-forming or Pyrophoric chemicals will be purchased or used (see Appendix F for a list of chemicals which are banned from purchase or use in Polson Middle School).
6. No culturing of unknown bacteria or viruses will be allowed.
7. No work will be performed on human blood, human cells or other human substances without proper training and use of Personal Protective Equipment.

I. Safety Equipment

1. The school shall maintain adequate safety equipment in each laboratory in compliance with the Laboratory Standard. This equipment shall include, but not be limited to the following items:
 - a. Indirectly-vented safety goggles for each student potentially subjected to liquid splash; impact-resistant safety glasses for each student potentially subjected to physical impacts only
 - b. Aprons for each student
 - c. Nitrile gloves for each student working in all chemical laboratories; vinyl gloves are acceptable in biological and physics laboratories
 - d. Eyewash
 - e. Safety Shower
 - f. Fire extinguisher
 - g. Fire blanket
2. All safety equipment will be maintained, inspected, and kept in working order.
3. **Dosimeters will be used monthly to ensure that goggle cabinet bulbs emit 100 mj/cm² during a 15-minute disinfection cycle.**
4. Fume hoods in Polson School are not functional, and thus, no chemicals that emit potentially hazardous vapors will be used or purchased by Polson School.
5. The laboratory ventilation system shall be periodically tested to insure that the accepted ventilation standard of 4-12 air exchanges per hour is maintained.
6. An online version of Safety Data Sheets shall be maintained, updated and made available to all instructors and the School Nurse.

J. Employee Safety Training

The Madison Public Schools will provide initial safety training upon hire/assignment to all instructors to any science laboratory/classroom and ongoing safety training sessions for all Science instructors. This training shall include:

1. Content and location of the Chemical Hygiene Plan.
2. Potential hazards in using laboratory chemicals.
3. Proper handling, labeling, storage, and disposal of chemicals.
4. Signs and symptoms of overexposure to chemicals.
5. Location and use of Safety Data Sheets.
6. Procedures to teach students to respect and comply with accepted safety procedures.
7. The School Nurse will provide First Aid training specific to potential laboratory hazards.

K. Exposure Evaluation of Instructors

It is the policy of Polson Middle School to promptly investigate any suspected overexposure to chemicals. In the event of an overexposure, we will document all chemicals and circumstances involved in the overexposure. This information shall be used to review safety procedures and further improve laboratory safety.

Signs of overexposure could include, but are not limited to, the following:

- Accidental breakage of a hazardous materials container
- A skin rash or irritation occurring after contact with a chemical
- Caustic splash to the eyes or face
- Symptoms of dizziness or nausea

If the monitoring of the air is deemed to be necessary, the results of such tests shall be made available to employees within 2 weeks.

L. Medical Evaluations

Medical consultation shall be available to the employee when:

- There has been a significant spill or uncontrolled release of chemical fumes.
 - Monitoring indicates that an overexposure to a chemical has occurred
 - There is a sign or symptoms of chemical overexposure
1. The attending physician shall be provided with the name of the chemicals used and the conditions under which the overexposure occurred.
 2. Medical examinations dealing with chemical exposure shall be documented and other employees working under the same conditions shall be notified. All documentation shall be kept on file.

3. All medical examinations and consultations shall be performed under the direct supervision of a licensed physician, and shall be provided to the employee without cost.

M. Monitoring

Monitoring will be necessary for substances regulated by a standard only if there is reason to believe that the exposure levels for the substance routinely exceed the Permissible Exposure Limit (PEL) for that substance. If monitoring shows no evidence of exposure, that monitoring may be discontinued.

If the initial monitoring shows evidence for exposure exceeding the PEL, steps must be taken immediately to reduce the exposure below the Permissible Exposure Limit. Monitoring then shall continue periodically to verify that those steps have been effective. Monitoring may be discontinued after it can be demonstrated that no further hazard exists. The results of all monitoring shall be fully accessible and available to all employees.

N. Emergency Evacuation Plan

1. In most cases, the teacher in charge of the classroom or affected area shall make the decision to evacuate.
2. In the event that evacuation of the entire building should be deemed necessary, the school office shall be immediately notified. An alarm shall be sounded and the building evacuated according to standard fire drill practices.
3. If only a classroom is to be evacuated, students shall exit by the nearest available exit. They shall then proceed out of the building in accordance with the standard fire drill practices.
4. In all cases, the teacher shall notify to school office to alert the building as to a possible hazard. The chemical hygiene officer shall also be notified to make a determination of the level of hazard.

O. Electrical Safety

1. Check electrical equipment and inspect for frayed cords and damaged connections; do not use and report damage to your supervisor immediately. Electrical tape is prohibited.
2. Multiple outlet strips must be plugged directly into a wall outlet. Power strips should have a circuit breaker. Extension cords are not to be permanently used with power strips.
3. Extension cords are not to be used in place of permanent wiring (use allowed if only on a temporary, immediate, basis)
4. Ensure extension cords are 14-gauge (heavy duty) at a minimum, and **temporarily** servicing only one appliance or fixture
5. Ensure extension cord is plugged directly into receptacle. Extension cords should never be used plugged end-to-end; use the proper length cord.

6. If extension cords are used, ensure cords are not running through walls, ceilings, under carpets or doors, and do not present a tripping hazard.
7. Cord guards should be provided across an aisle or other passageway to prevent tripping.
8. All electrical equipment must be properly grounded (three-prong plugs) or double-insulated. 3-prong plugs may only be used for 3-prong receptacles, and never altered to fit into an outlet.
9. Ground Fault Circuit Interrupters should be in place where electrical outlets are in use within 6 feet of water. Ensure GFCI's are working properly by using the "test" button.
10. All electrical boxes, panels and receptacles should be covered to protect against electrocution.
11. Control switches, circuit breakers and electrical panels must be free of obstruction. These items must be accessible at all times.

P. Disposal of Sharps

Sharps are defined as any object having acute corners, edges or protuberances capable of cutting or piercing, e.g. **syringe needles, razor blades, glass, etc.** These items **cannot be disposed of in the normal lab trash or dumpsters.** Every year custodians are injured by sharps in laboratory trash cans. Therefore, please follow these guidelines:

1. Lab glassware NOT contaminated by hazardous materials (e.g. pyrex, borosilicate)

Custodial staff will **not** remove glass trash from lab. Place broken or unbroken glass into a labeled "*Broken Glass*" trash box that is located in every science laboratory.

2. Needles and razor blades NOT contaminated by hazardous materials

These are particularly dangerous and require *extra precautions* beyond those of glassware:

- Each Biology lab is supplied with a sharps container. Needles and razor blades (scalpels) should be disposed of in these designated containers.
- When full, notify the Chemical Hygiene Officer so that he can remove the filled container and supply you with a new container.

Q. First Aid

Safety incidents requiring first-aid or first responder assistance for science teachers working in school laboratories include:

Heat/Chemical Burns: Chances are good that someone will get burned in the laboratory from Bunsen burners, matches, ring stands, hotplates, etc. Should that happen, **immediately soak the burned area in cold water.** Request immediate assistance from the school's health care provider.

Electrical Burns: Severity of the burn depends on the type, amount and length of contact. The electrical incident may also cause the heart to stop or beat erratically. Respiratory arrest may also occur. Signs of electrical injury include – unconsciousness, dazed, confused behavior, breathing difficulty, obvious burns on the surface of the skin, weak, irregular or absent pulse, burns both where the current entered and where it exited. You can also suspect a possible electrical injury if a sudden low noise such as a pop or bang is heard. An unexpected flash of light may also indicate an electrical incident. **If the teacher is trained or certified in CPR, initiate emergency care.** Otherwise, request immediate assistance from the school’s health care provider.

Bleeding: Bleeding can occur as a result of cuts from glass, metal, scalpels and other sharp objects. In situations where arterial bleeding occurs, prompt action is required. **Direct pressure over the wound with use of a barrier such as a rubber glove.** If a glove is not handy, use a shoe with the hand inside of it. The barrier is needed as a standard precaution. Request immediate assistance from the school’s health care provider.

Chemical Exposure: With an increased emphasis on hands-on, process and inquiry-based science, chemical exposure has a heightened probability of happening. Be certain to have the SDS and/or SDS available for each hazardous chemical used and review it prior to any laboratory work being done. Should there be an exposure, **have the injured person immediately (within 10 seconds) use the eyewash or acid shower,** as appropriate. Flush with copious amounts of tepid water for a minimum of 15 minutes. Request immediate assistance from the school’s health care provider.

Swallowed Poisons: Accidental swallowing of poisonous chemicals in the laboratory can happen. It is critical to review SDS and/or SDS with students prior to use of these chemicals so all are familiar with their potential harm to the body. **If the person becomes unconscious or is convulsing, do not induce vomiting.** The same is true should the person complain of a “burning feeling” in their throat. Provide plenty of water or milk if available. Request immediate assistance from the school’s health care provider. It is also wise to contact the **Poison Control Center 800-222-1222** if you know what poison has been accidentally taken.

Penetrating Objects: Use of projectiles, walking in a laboratory with sharp hazards, etc., can be hazardous and cause body penetration. **Do not remove the object.** Try to keep the individual calm and still. Request immediate assistance from the school’s health care provider.

Lacerations: Broken glassware or other sharp objects can cause cuts in the skin. If bleeding occurs, try to have the injured person **put on latex or NIOSH approved plastic gloves and apply direct pressure to control bleeding.** If that is not possible, use caution to keep a barrier (glove) between you and the injured person while trying to apply direct pressure. Request immediate assistance from the school’s health care provider.

Shock: Symptoms of shock include faint pulse, clammy skin, nausea and/or vomiting and increased breathing. **The victim should be lying down with feet elevated. Cover with a blanket to keep warm.** Request immediate assistance from the school's health care provider.

Automatic External Defibrillator

AEDS or Automatic External Defibrillators are small, lightweight devices that look at a person's heart rhythm (through special pads placed on the torso) and can recognize ventricular fibrillation (VF), also known as "sudden cardiac arrest" or SCA. If SCA is present, an AED will advise, and will talk the responder through some very simple steps to defibrillate. AEDs are designed to be used by lay rescuers and "first responders". The AED is part of CPR. For maximum survivor benefits, both tools must be used together!

Only certified AED and CPR trained employees are allowed to administer these tools in a cardiac emergency.

APPENDIX A FORMS

POLSON SCHOOL C.H.O. MONTHLY SCHEDULE FOR SAFETY COMPLIANCE

School Year _____

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Additions to Inventory									
Biological waste collection									X
Chemical waste collection									X
Eyewash Fountains Flush	X	X	X	X	X	X	X	X	X
Fire Extinguishers	X	X	X	X	X	X	X	X	X
Goggles hygiene									
Hood velocity check	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDS Updates									
Staff Training	X	X	X	X	X	X	X	X	X

POLSON SCHOOL WEEKLY SCHEDULE FOR SAFETY COMPLIANCE

Eyewash Flush, Hood & Safety Equipment Inspection Record

Room	Eyewash Flushed	Hood Inspected	GFCI	Fire Blanket	Fire Extinguisher	Gas Jets	SDS Folder	Goggle Sanitizing
20		NA						
21		NA						
22		NA						
24	NA	NA	NA	NA	NA	NA		NA
24A	NA	NA	NA	NA	NA	NA		NA
35		Not in Use						
36		NA	NA					
37		NA	NA					
39		NA				NA		
41	NA	NA		NA		NA		
43	NA	NA		NA		NA		
SR 12	NA	NA	NA			NA		

Signature of Inspector _____ **Date** _____

Notes: _____

Polson School Goggle Sanitation Record

Room # _____

Goggles must be properly sanitized after every use.

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Date: _____

Initials: _____

Note: Please leave completed copies affixed to goggle cabinet. The chemical hygiene officer will collect and retain completed goggle sanitation records.

APPENDIX B
WALTER POLSON MIDDLE SCHOOL
SCIENCE SAFETY ACKNOWLEDGEMENT DOCUMENT

PURPOSE: In science class, you will be taking part in many hands-on activities. To ensure that the science classroom is a safe learning environment, a list of safety rules has been developed. These rules must be followed at ALL times. Additional safety instructions will be given for each activity.

SAFETY RULES:

1. Conduct yourself in a responsible manner at all times in the science classroom. No horseplay, fooling around or practical jokes will be tolerated.
2. Follow all written and verbal instructions carefully. If you do not understand the instructions, ask your teacher.
3. Do not touch any equipment, supplies, or other materials in the science room without permission from the teacher.
4. Perform only authorized and approved experiments. Do not conduct any experiments when the teacher is not in the room.
5. Never eat, drink, chew gum or taste anything in the science room.
6. Keep hands away from face, eyes and mouth while using science materials or when working with chemicals. Wash your hands with soap and water before leaving the science room.
7. Wear safety glasses or goggles when instructed. Never remove safety glasses or goggles during an experiment. There will be no exceptions to this rule!
8. Keep your work area and the science room neat and clean. Bring only your laboratory instructions, worksheets, and writing instruments to the work area. Binders and other materials should be moved out of the way.
9. Clean all work areas and equipment at the end of the experiment. Return all equipment clean and in working order to the proper storage area.
10. Follow your teacher's instructions to dispose of any waste materials generated in an experiment.
11. Report any accident (fire, spill, breakage, etc.), injury (cut, burn, etc.) or hazardous condition (broken equipment, glassware, etc.) to the teacher immediately.
12. Consider all chemicals used in the science room to be dangerous. Do not touch, taste or smell any chemicals unless specifically instructed to do so.
13. Always carry a microscope with both hands. Hold the arm with one hand; place the other hand under the base.
14. Never open storage cabinets or enter the prep/storage room without permission from the teacher.
15. No not remove any chemicals, equipment or supplies from the science room without permission from the teacher.

16. Handle all glassware with care. Never pick up hot or broken glassware with your bare hands.
17. Use extreme caution when using matches, a candle, or hot plate. Only light candles when instructed and do not put anything into a flame. Do not leave a lit candle unattended.
18. Dress properly on lab days when instructed to do so- wear long pants and closed-toe shoes, long hair must be tied back, no dangling jewelry, and no loose or baggy clothing. Wear aprons and gloves when appropriate.
19. Know where the exits are located and what to do in case of an emergency or fire drill.
20. There are a few science rooms with fish or reptiles in them. Do not touch any animals, put anything into an aquarium or vivarium, remove animals from the classroom or tease the animals.

**POLSON MIDDLE SCHOOL
LABORATORY SAFETY AGREEMENT**

I, _____, have read and understand each of the above safety rules set forth in this document. I agree to follow them to ensure not only my own safety but also the safety of others in the science classroom or laboratory. I also agree to follow the general rules of appropriate behavior for a classroom at all times to avoid accidents and to provide a safe learning environment for everyone. I understand that if I do not follow all the rules and safety precautions, I will not be allowed to participate in science activities.

Student's signature

Date

Dear Parent or Guardian:

We feel that you should be informed of the school's effort to create and maintain a safe science classroom/ laboratory environment. Please read the list of safety rules. No student will be permitted to perform science activities unless this acknowledgement is signed by both the student and parent/guardian and a photocopy is on file with the teacher. Your signature on this acknowledgement indicates that you have read the Science Safety Acknowledgement Document, reviewed it with your child, and are aware of the measures taken to insure the safety of your son/daughter in the science classroom.

Parent's/Guardian's signature

Date

QUESTIONS

Do you wear contact lenses? YES NO

Are you color blind? YES NO

Do you have allergies? YES NO

If "yes", please list:

APPENDIX C
Chemicals Acceptable for Disposal as Regular Trash

Adapted from Flynn Scientific

Acacia powder, Gum Arabic	Magnesium Chloride
Acid, Acetic (less than 6 M)	Magnesium Oxide
Acid, Ascorbic	Magnesium Sulfate
Acid, Benzoic	Maltose
Acid, Boric	Manganese Chloride
Acid, Citric	Methyl Red
Acid, Hydrochloric (less than 6 M)	Methylene Blue
Acid, Lactic	Nutrient Agar
Acid, Nitric (less than 3 M)	Paraffin
Acid, Stearic	Petroleum Jelly
Acid, Succinic	Potassium Acetate
Acid, Sulfuric (less than 3 M)	Potassium Bicarbonate
Agar(s)	Potassium Bromide
Agarose Gels	Potassium Carbonate
Albumen	Potassium Chloride
Aluminum Oxide	Potassium Ferricyanide
Ammonium Bicarbonate	Potassium Iodide
Ammonium Phosphate	Potassium Phosphate
Ammonium Sulfate	Potassium Sulfate
Beef Extract	Potassium Sulfite
Bromophenol Blue	Sand
Broth, Nutrient	Silica Gel (unused)
Calcium Carbonate	Silicon Carbide
Calcium Chloride	Sodium Acetate
Calcium Phosphate	Sodium Ammonium Phosphate
Calcium Sulfate	Sodium Bicarbonate
Detergent	Sodium Bromide
Chromatographic Absorbents	Sodium Carbonate
Crystal Violet	Sodium Chloride
Dextrose	Sodium Citrate
Diatomaceous Earth	Sodium Iodide
Ferric Oxide (rust)	Sodium Phosphate
Ferric Phosphate	Sodium Sulfate
Ferric Sulfate	Sodium Sulfite
Ferrous Ammonium Sulfate	Starch
Galactose	Stearic Acid
Gelatin	Sucrose
Gum Arabic	Sugars
Lactose	Sulfur
Lauric Acid	Tin Metal
Litmus	Urea
Magnesium Carbonate	

**APPENDIX D
REGULATIONS CONCERNING EYE PROTECTIVE DEVICES
AS AUTHORIZED BY SECTION 214a OF THE
CONNECTICUT GENERAL STATUTES**

The regulations of Connecticut state agencies are amended by adding sections 10-21 4a-1 to 10-21 4a-3, inclusive as follows:

Section 10-21 41-1. By whom, when and where eye protective devices shall be worn: definitions. Any person who is working, teaching, observing, supervising, assisting in or engaging in any work, activity or study in a public or private elementary or secondary school laboratory or workshop where the process used tends to damage the eyes or where protective devices can reduce the risk of injury to the eyes concomitant with such activity shall wear an eye protective device of industrial quality in the manner in which such device was intended to be worn. For the purposes of sections 10-21 4a-1 to 10-21 4a-3, inclusive, “workshop” and “laboratory” shall include any room or area used to teach or practice industrial arts, vocational and technical education; science, arts and crafts, or any similar skill, activity or subject. The following list of sources of danger to the eyes and the type of protection required to be worn in each case is exemplary, not exclusive.

<u>SOURCE OF DANGER TO THE EYES</u>	<u>TYPE OF PROTECTION REQUIRED</u>
a) Caustic or explosive chemicals	Clear goggles, splash proof
b) Explosives, solids or gases	Clear goggles
c) Dust producing operations	Clear goggles, splash proof
d) Electric arc welding	Welding helmet
e) Oxy-acetylene welding	Colored goggles or welding helmet
f) Hot liquids and gases	Clear goggles, splash proof
g) Hot solids	Clear or colored goggles, or spectacles
h) Molten metals	Clear or colored goggles
i) Heat treatment or tempering of metals	Clear or colored goggles metals
j) Glare operations	Colored spectacles or goggles, or welding helmet
k) Shaping of solid materials	Clear goggles
l) Repairing or servicing of vehicles when hazard is foreseeable	Clear goggles or spectacles
m) Spraying and dusting	Clear goggles, splash proof

APPENDIX E

SUMMARY OF APPLICABLE OSHA STANDARDS

29 CFR 1910.1200 Hazard Communication Standard

- requires that Safety Data Sheets be current and available for all hazardous chemicals, and further requires the employer keep current a list of all hazardous chemicals on site.
- mandates a written Hazard Communication Program, training for new employees, and training for employees potentially exposed to new hazardous materials.
- sets standards for the labeling of hazardous chemicals.
- requires training for non-routine tasks which might involve exposure to hazardous chemicals, and for outside contractors, brought onto the work site, who might be exposed to hazardous materials.

29 CFR 1910.1450 Laboratory Standard

- requires that the employer monitor and limit employee exposure to hazardous chemicals.
- mandates the appointment of a qualified Chemical Hygiene Officer, and the development of a written Chemical Hygiene Plan detailing standard work practices and policies, and procedures for working with hazardous chemicals.
- requires initial and periodic employee training in the content of the Chemical Hygiene Plan including: chemical hazards; the content of SDS; measures, including protective clothing and equipment, to minimize exposure to hazardous chemicals; emergency procedures; exposure limits and signs of overexposure; and the availability of medical consultation and treatment.
- requires that a current inventory of hazardous chemicals be maintained and that all hazardous chemicals be appropriately labeled.
- mandates that records of air concentration monitoring results, exposure assessments, medical consultations and examinations be maintained for at least 30 years.

29 CFR 1910.1030 Occupational Exposure to Bloodborne Pathogens

- requires a written plan to eliminate or minimize employee exposure including the determination of the likelihood of exposure, and the tasks in which exposure might occur.
- mandates the listing of precautions to limit exposure and a description of work practices and protective equipment.
- requires employee training in techniques to avoid exposure, medical treatment available, including the availability of pre- and post-exposure Hepatitis B vaccination, and the accessibility and contents of the Exposure Control Plan.
- requires documentation of employee training (kept for three years) and post-exposure medical records (maintained for term of employment + 30 years).

APPENDIX F CHEMICAL COMPATIBILITY

INTRODUCTION: If incompatible chemicals are mixed, a fire, explosion, or toxic release can occur. Chemicals can often fall into more than one hazard category and therefore the chemical label and/or Safety Data Sheet (SDS) should be reviewed for storage requirements. Separate chemicals by adequate distance, or preferably by using physical barriers (e.g. storage cabinets). Avoid using the fume hood for chemical storage - this practice may interfere with the proper air flow of the hood. For especially dangerous materials, use a secondary container (e.g. plastic tub) large enough to contain a spill of the largest container. This chart indicates the most obvious chemical incompatibilities, and provides a basic segregation plan.

ACIDS: Examples: Acetic Acid; Chromic Acid*; Hydrochloric Acid; Hydrofluoric Acid; Nitric Acid*; Perchloric Acid*; Phosphoric Acid; Sulfuric Acid (***Indicates strong oxidizing acids and most of these will not be purchased or used by Polson Middle School.**)

Storage Precautions:

- Store bottles on low shelf areas, or in acid cabinets.
- Segregate oxidizing acids from organic acids, **and** flammable materials.
- Segregate acids from bases, **and** from active metals such as sodium, potassium, etc.
- Segregate from chemicals which could generate toxic gases such as NaCN, iron sulfide, etc.

BASES: Examples: Ammonium Hydroxide; Potassium Hydroxide; Sodium Hydroxide

Storage Precautions:

- Separate bases from acids.
- Store bottles on low shelf areas, or in acid cabinets.

FLAMMABLES-fuels are reducing agents, examples:

Acetone

Benzene

Cyclohexane

Ethanol

Ethyl Acetate

Ethyl Ether

Gasoline

Hexane

Isopropyl Alcohol

Methanol

Propanol

Tetrahydrofuran

Toluene

Xylene

Storage Precautions:

- Store in approved flammable storage cabinet(s) (required if there is > 10 gallons in the lab).
- Separate from oxidizing acids and oxidizers.
- Keep away from any source of ignition (flames, localized heat or sparks).
- Use only "flammable storage" (de-sparked) refrigerator

OXIDIZERS-react violently with organics (solvents, paper, wood, etc.)

Example Solids

Iodine

Nitrates, Salts of

Peroxides, Salts of

Potassium Ferricyanide

Sodium Nitrite

Liquids

Bromine

Hydrogen Peroxide

Nitric Acid

Perchloric Acid

Chromic Acid

Storage Precautions:

- Keep away from organic solvents, and other combustible materials (i.e. paper).
- Keep away from reducing agents.

PEROXIDE-FORMING CHEMICALS-peroxides can be explosive and shock-sensitive. Examples: Ethers and acetals with alpha-hydrogen (e.g. ethyl ether, THF); Alkenes with allylic hydrogen (e.g. cyclohexene). Store tightly sealed to exclude oxygen. Label with date of receiving AND opening. Dispose within recommended guidelines – usually 6 months for ethers. **The following Peroxide-Forming chemicals will NOT be purchased or used by Polson Middle School:**

CLASS B

Acetal

Acetaldehyde

Benzyl alcohol

2-Buanol

Cumene

Cyclohexanol

Cyclohexene

Diacetylene

Dicyclopentadiene

Diethylene glycol dimethyl ether

Diethyl ether

P-dioxane

Ethylene glycol dimethyl ether

4-Hepanol

2-Hexanol

Methyl cyclopentane

MIBK

2-Pentanol

2-Propanol

Tetrahydrofuran

Tetrahydronathpalene

Trimethylbenzene

Vinyl esters

CLASS C

Acrylic Acid	Tetrafluoroethylene
Acrylonitrile	Vinyl Acetate
Butadiene	Vinyl Chloride
Chloroprene	Vinyl pyridine
Chlorotrifluoroethylene	Vinylidene chloride
Methyl methacrylate	
Styrene	

PYROPHORIC SUBSTANCES-spontaneously ignite in air.

Examples: Some finely divided metals; Some organoaluminum compounds (LiAlH_4 , $\text{Al}(\text{CH}_3)_3$); Silane; phosphorus, yellow (should be stored and cut under water)

Storage Precautions:

- Rigorously exclude air and water from container.
- Store away from flammables.

Pyrophoric chemicals will NOT be purchased or used by Polson Middle School.

WATER REACTIVES -react violently with water to yield flammable or toxic gases.

Solids: Calcium carbide, magnesium, lithium, potassium, sodium

Liquids: phosphorous trichloride, thionyl chloride

Storage Precautions:

- Rigorously avoid exposure to water and air
- Store away from flammables
- Lithium, Potassium and sodium should be stored under kerosene or mineral oil

Water-reactive metals other than Calcium will NOT be purchased or used by Polson Middle School.

HIGHLY TOXICS, CARCINOGENS, and REPRODUCTIVE TOXIN

These chemicals can be very hazardous by themselves, or in combination with other chemicals. If they are easily inhaled, (gases and volatile liquids) then they are particularly hazardous.

Liquids - Seal tightly and store in a ventilated cabinet apart from incompatibles. Use secondary containment (e.g. plastic tub) to contain any spills.

Examples: Formaldehyde; Carbon disulfide; Mercury; Nickel carbonyl; Cyanide solutions

Gases - Store in a gas cabinet or other ventilated cabinet

Examples: Chlorine; Fluorine; Hydrogen chloride; Nitric Oxide; Hydrogen Cyanide

Solids -Store away from incompatibles (usually acids) that would release toxic gas upon contact.

APPENDIX G

Flammable Liquid Safety

Safety Precautions

All flammable liquids found in school environments are also organic compounds. Their principal hazard is flammability. Many are also slightly toxic by inhalation and are body tissue irritants. Mild headaches or dizziness may be a symptom of overexposure to an organic vapor. Good ventilation is highly recommended whenever volatile organic compounds are used. Specific hazards for common organic solvents are presented in this review. Always wear chemical splash goggles, chemical-resistant gloves, and chemical-resistant apron whenever using flammable liquids. Consult current Material Safety Data Sheets for specific safety, handling, and disposal information.

Using and Dispensing Flammable Liquids

- If volatile organic solvents are going to be used, the lab must be well ventilated or have a working purge fan to ventilate the lab. The laboratory should also be equipped with one or two ABC, dry chemical fire extinguishers and fire blankets
- In addition to the other normal safety equipment (safety eyewash, safety shower, etc.).
- Always review the SDS before using any hazardous material in the laboratory.
- Flammable liquids should not be mixed with strong oxidizing agents. As the organic material is oxidized, heat is evolved and may ignite the material resulting in a fire.
- Extreme care must be taken when using flammable liquids around any heat source, flames, or electrical equipment. Laboratory equipment (stirrers, meters, etc.) are designed to be spark proof, but limiting vapors is always a good safety precaution.
- Organic vapors are heavier than air and will quickly travel along a lab bench or floor to an ignition source. Never use flammable liquids around an ignition source. Try to minimize the amount of volatile liquids used and be aware that organic vapors can travel great distances.
- Flammable liquids are very volatile. Dispense them in an operating fume hood.
- Use lab mats and/or plastic trays when dispensing organic solvents to contain spills and drips.
- Students should dispense flammable liquids from smaller bottles to limit spills and fumes. Do not allow students to dispense flammable liquids from containers larger than 1 liter. Larger volume containers increase the possibility of contamination and also increase the amount of fuel that will be available in case of a fire.
- During lab, dispense the flammable liquid from a central dispensing location and have students bring a graduated cylinder or test tube to the dispensing area. This will help to minimize spills and accidents as well as limit the amount of flammable liquid being transported back to the lab bench.

- Instruct students to remove only the amount of flammable liquid needed for the experiment from the reagent bottle. Never add chemicals back to reagent bottles.
- Have spill cleanup materials readily available whenever flammable liquids are used. If a spill occurs, immediately restrict unprotected personnel from the area, remove all ignition sources, and ventilate the area. If the spill is too large to contain, the vapors are overpowering, or ignition sources cannot be completely removed, immediately evacuate the school and call the fire department. If the spill is small, contain the spill with sand or an absorbent material. Depending on the spill material and the amount, allow the spilled material to evaporate off the sand or absorbent material in a fume hood or deposit it in a sealed bag or container.

Personal Protective Equipment and Safety Aids

- Consult the SDS for the specific personal protective equipment required and other safety precautions for the flammable material being used.
- Neoprene rubber gloves are recommended for use when handling organic solvents. Plastic or vinyl gloves will provide some protection against the occasional splash, small spill, and splatter that may occur when using or dispensing solvents.
- Operating eyewashes must be available in any classroom or laboratory where chemicals are used. Approved eyewashes must treat both eyes and provide a stream of clean, potable water for at least 15 minutes.
- Chemical splash goggles must be worn anytime flammable liquids are used. Safety glasses are not adequate protection.
- During demos, it is very important that students wear chemical splash goggles anytime flammable liquids are used. The possibility of an explosion or fire always exists and both students and teachers must be protected. If safety goggles are not available, use a heavy duty safety shield to protect your students.

First Aid

- Always seek professional medical attention upon exposure to any hazardous chemical, especially volatile organic solvents. For most organic solvents, the major hazards are flammability and inhalation. If there is a spill or accident, immediately remove any flames, heat, or electrical equipment from the area and begin to ventilate the area.
- If an organic liquid is splashed in the eyes, use an eyewash to irrigate the eyes with fresh, potable water for at least 15 minutes. Make sure the eyelids are held open to properly irrigate them. Ask the victim to look up, down, and sideways to better reach all parts of the eye. After using the eyewash, immediately seek professional medical help.
- If a flammable liquid is splashed onto bare skin, rinse the area with cool water for at least 15 minutes. Many organic solvents will “dry out” the skin and cause minor dermatitis. If the liquid causes burns or other skin irritations, seek medical help immediately.
- If a large amount of flammable liquid is splashed onto clothing, consider removing the clothing immediately and placing the clothing in a fume hood or outdoors. If flammable

liquid splashes onto your skin and clothing, remove clothing and then begin rinsing the affected areas with water (using the safety shower is ideal).

- If an organic liquid is ingested, please consult the SDS and immediately contact the school's Health Office or call the poison control center (1-800-222-1222) or local hospital emergency room. Follow their directions and seek medical attention as soon as possible. For most organic solvents, the goal is to trap the chemical in the stomach and prevent further injury caused by vomiting. Activated charcoal is sometimes given to help trap the chemical. **Do not** give the victim anything to drink or induce vomiting unless instructed by a medical professional.

APPENDIX H

Safety Guidelines for Chemical Demonstrations

(Guidelines from the American Chemical Society—Division of Chemical Education)

Chemical demonstrators must:

1. Know the properties of the chemicals and chemical reactions involved in all demonstrations presented.
2. Comply with all local rules and regulations.
3. Wear appropriate eye protection for all chemical demonstrations.
4. Warn the members of the audience to cover their ears whenever a loud noise is anticipated.
5. Plan the demonstration so that harmful quantities of noxious gases (e.g., NO₂, SO₂, H₂S) do not enter the local air supply.
6. Provide safety shield protection whenever there is the slightest possibility that a container, its fragments, or its contents could be propelled with sufficient force to cause personal injury.
7. Arrange to have a fire extinguisher at hand whenever the slightest possibility of fire exists.
8. Not taste or encourage spectators to taste any nonfood substances.
9. Not use demonstrations in which parts of the human body are placed in danger (such as placing dry ice in the mouth or dipping hands into liquid nitrogen).
10. Do not use “open” containers of volatile, toxic substances (e.g., benzene, CCl₄, CS₂, formaldehyde) without adequate ventilation as provided by fume hoods.
11. Provide written procedure, hazard, and disposal information for each demonstration whenever the audience is encouraged to repeat the demonstration.
12. Arrange for appropriate waste containers for and subsequent disposal of materials harmful to the environment.

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Additional safety guidelines from Flinn Scientific Inc.

1. Always practice all demonstrations before performing them in front of students. A demonstration should only be attempted after all the potential pitfalls and hazards have been identified.
2. Never attempt a demonstration that will place you or your students at risk.
3. Have students wear safety goggles or use a safety shield if there is the slightest possibility that a container, its fragments or its contents could be propelled with sufficient force to

cause personal injury. A good rule of thumb is if heat or pressure are involved, audience protection is required.

4. If heat is involved in the demonstration, make sure all glassware is borosilicate (e.g., Pyrex®) glass and check for chips and cracks before using.
5. If a flammable liquid is used in a demonstration, make sure to cap all reagent bottles after dispensing the appropriate quantities and be aware of heat sources and flammable vapors. Never repeat a demonstration using flammable liquids until all containers and surfaces are cool to the touch.
6. Use fresh chemicals and clean glassware to prevent possible contamination.
7. All demonstrations should have an educational objective. If the demonstration uses toxic chemicals or a potentially hazardous procedure, review the demonstration again and be sure it has educational benefits.
8. Always ensure that electrical devices are properly grounded and inspect every electrical circuit before turning the current on.

APPENDIX I - SAFETY REFERENCES

Your plan for teaching science safely and in compliance with OSHA regulations should include provisions for a library of safety-related materials. The following resources will be useful additions to your library.

Art Hazards News, Center for Safety in the Arts, 5 Beekman St., Suite 820, New York, N.Y. 10038.

CHEMECOLOGY, Chemical Manufacturers Association, 2501 M St. N.W., Washington, D.C.

Chemical Catalog Reference Manual, Flinn Scientific Inc., P.O. Box 219, Batavia, IL 60510-1261.

Chemical Health and Safety, American Chemical Society, Division of Chemical Health and Safety, Publications Marketing Dept., 1155 Sixteenth St. N.W., Washington, D.C. 20077-5768, 1994.

Compliance Magazine, HIS Publishing Group, P.O. Box 512, Libertyville, IL 60048-0512

Developing a Chemical Hygiene Plan, Jay A. Young, Warren K. Kingsley, George H. Wahl, Jr., American Chemical Society, 1155 16th St., N.W., Washington, D.C. 20003.

Flinn Fax! Flinn Scientific Inc., P.O. Box 219, Batavia, IL 60510-1261.

Life Safety Code Handbook, National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9191, Quincy, MA 02269-9904, 1994.

Manual of Safety and Health Hazards in the School Science Laboratory, Laboratory Safety Workshop, 101 Oak St., Wellesley, MA 02181-4723.

NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Prudent Practices in the Laboratory: Handling and Disposing of Chemicals, National Academy Press, 2101 Constitution Ave., Washington, D.C. 20418, 1995.

Safety in the Elementary Science Classroom, Robert A. Dean, et al., National Science Teachers Association, 1840 Wilson Blvd., Arlington, VA 22201-3000.

Safety News, VWR Scientific, 6411 Ivy Lane #714, Greenbelt, MD 20770-9888.

Understanding Chemical Hazards: A Guide for Students, American Chemical Society, 1155 16th St., N.W., Washington, D.C. 20003.

Written Hazard Communication Program for Schools and Colleges, Forum for Scientific Excellence, Inc., J.B. Lippincott Co., East Washington Square, Philadelphia, PA 19105.

Websites

Environmental Protection Agency

<http://www.epa.gov/enviro/html/emci/chemref/index.html>

OSHA

<http://www.osha.gov/safelinks.html>

National Institute for Occupational Safety and Health (NIOSH)

<http://www.cdc.gov/niosh/homepage.html>

Additional Information for the Science Teacher

Steps You Can Take to Prove You're a "Responsible" Science Teacher (this was produced by Flinn Science, Inc.)

Student X had a bad accident involving a chemical he obtained at school. As a senior in high school chemistry, the student was able to obtain a sizeable piece of elemental potassium from the stockroom. He wrapped the potassium in a paper towel and placed it inside his front pants pocket. Soon after, he walked home and by the time he was inside his house, the potassium spontaneously ignited and caught his pants on fire. The student sustained third-degree burns to his leg and abdomen and required skin grafting.

All science teachers dread the thought of having this type of "event" occur at their school. Who's responsible? The teacher? Student? School? A good definition for "who is responsible" is: "If you can reasonably foresee the consequences of what you're about to do, or are not about to do, you will be held responsible."

Today's science teachers must not only act responsibly, they must also be prepared to prove to others how they acted responsibly. Below are a few inexpensive ideas you can use in your classroom to document that you are a responsible science teacher.

Every member of the Science Department has been issued a copy of the Laboratory Manager's Professional Reference (Holt Science) and it is expected that each instructor has made themselves familiar with this reference.

Safety Agreements

On the first day of class every science class, you need to establish a contractual relationship with your students. (It is important to know that a student who takes a 1 trimester course and has completed a safety agreement **MUST** complete a new safety agreement if he/she enrolls in another course for a new course in the next trimester, i.e., one safety agreement **DOES NOT** cover a student for any other science course they may enroll in. A student safety agreement is a detailed listing of all of the rules of the laboratory. Review the safety agreement with your students and have them sign and date it. Students should then take the agreement home so their parents or guardians can review and sign the agreement as well. As a responsible science teacher, you think safety is so important that you want the parents to be involved the very first day of school. If the student, or parent, does not sign the agreement, the student will not be allowed to participate in any laboratory activity and will be given a failing grade for each day missed.

Does the safety agreement have any legal weight? No, it does not. However, it does tell the students and parents that you are very serious about safety. Signed safety agreements will also go a long way in establishing that you are a responsible science teacher. Signed safety agreements document that the rules of the laboratory have been reviewed by all of the students in your class and you have their signatures to prove it.

Lesson Plans

Your lesson plan book is a very valuable document to have should you ever have to prove to someone that you are a responsible science teacher. Your lesson plan book is your personal journal or diary that documents all of the activities you have done in class for the entire school year. Your lesson plan book is also a great place to document all the safety discussions you have with your students.

Every time you discuss safety in class, jot down in your lesson plan book what you talked about. For instance, the day you discuss the safety contract, your lesson plan book should note that the safety contract was reviewed and discussed. Every time a lab or demonstration is done, select one of the rules from the safety contract, remind the students of the rule, and make note in your lesson plan book accordingly. Responsible science teachers constantly reinforce safety rules every day and get in the habit of writing in their lesson plan book what was discussed.

Safety Posters

Your students are visually oriented. Bright, colorful safety posters throughout the classroom/laboratory will help remind students that safety is important. While we would love for you to order our Flinn Scientific Safety Posters, we urge you to have students make their own. The next time you are absent from school and a substitute teacher watches the class, make that day a "safety day!" Provide the students with crayons, poster board, paper, and markers and have them make safety posters based on the safety contract. Decorate the walls with their homemade posters. Of course, your lesson plan book will clearly show that you think science safety is so important that your students spent the entire day making safety posters. What would normally have been a video day or worksheet day has now become an important safety day!

Firm Goggle Policy

A responsible science teacher must adopt a firm goggle policy. The policy we hope your school will adopt is "Any time chemicals, glassware, or heat is used, you must wear your laboratory goggles. No exceptions!"

Chemical Terms

When discussing laboratory safety the first couple weeks of school, you will be using terms like corrosive, flammable, oxidizer, etc. Do your students understand the meaning of these terms? Probably not! Try to explain and demonstrate to students what these terms mean.

Conclusion

"If you can reasonably foresee the consequences of what you are about to do, or are not about to do, you will be held responsible." Begin to implement some of the ideas we have suggested. Safety contracts, lesson plans, safety posters, a firm goggle policy, and definition of terms, will all go a long way in helping to prove you are a responsible science teacher.

Where and Why Science Accidents Occur

In 1996, Larry Duff, Ed.D. of Omaha, Nebraska released the results of a lab safety survey he conducted of junior and senior high school physical science/chemistry teachers in Nebraska. The response rate to his survey was over ninety-five percent.

Two very important findings came out of this survey.

- In grades 9-12, seventy percent of all accidents occurred at the ninth grade level.
- Ninety-three percent of all teachers surveyed said the largest reason for accidents occurring in the science lab was "Students' failure to carefully read and understand laboratory activity instructions."

Accidents occur because of "students' failure to carefully read and understand laboratory activity instructions". When told of this data, teachers simply nod their heads in agreement. If students did a better job following written and verbal instructions, fewer accidents would occur. What can educators do to help solve this problem? Here are a few possible solutions:

1. Instead of the teacher presenting the prelab safety instructions, have one of the student lab teams present the prelab safety instructions. A portion of their lab grade can be based on their prelab safety presentation. Depending on the number of labs you do a year, each student lab team should be able to prepare and present the prelab instructions 2-3 times a year. Students can consult their *Lab* manual, review Safety Data Sheets, look through the *Flinn Scientific Catalog/Reference Manual*, consult reference books like the Merck Index or perhaps even go "on-line" to reference safety information via the Internet. Students will learn and understand important safety rules if they have to do the research and present safety instructions to their peers. Maybe the safety message you want your students to hear will be better understood when it's coming from someone other than you.
2. Another possible solution is to pretest students on the techniques, procedures and safety information they must know in order to successfully perform the lab experiments. Students who don't pass the pretest, miss the lab experiment and receive a zero. Yes, a zero is harsh, but students need to understand that they cannot enter the lab and perform an experiment unless they fully understand what they are doing.

3. Make sure students read and understand the safety rules you have established in the science lab for conduct and behavior. A detailed safety contract outlining the rules of the lab must be the foundation of your science safety program. Discuss these rules and reinforce them throughout the school year.

The data in Dr. Duff's survey is invaluable. For the first time we have data which not only tells us where most of the high school science accidents occur, but also why. Give ninth grade science students an extra dose of safety training and let's develop techniques to ensure students are prepared to perform lab experiments properly and safely.

Practical Solutions For Instructors to Reduce Their Liability

Teaching science is different than teaching other academic subjects because to properly teach science, students must receive instruction and engage in appropriate hands-on activities. More importantly, science teachers must teach in an environment using materials and equipment that have the potential to cause serious harm to both teacher and student. Science teachers must be trained in more than just teaching methods and classroom management. They must also receive specific training in laboratory safety. Science teachers must know, understand, and follow many rules and regulations to ensure the safety of students in their classrooms. Science teachers also owe their students a duty of care to properly supervise, instruct, maintain equipment and facilities, and warn students of potential harm in their classrooms. Accidents will happen in the classroom.

Teachers can, however, significantly reduce their risk of negligence liability and prevent classroom mishaps by following a few simple rules.

- Know the safety statutes that affect your classroom and carefully abide by them.
- Check with the State Department of Education, State Occupational Safety and Health Administration for statutes and regulations that apply to your classroom. At a minimum, each school should have in place an up-to-date Chemical Hygiene Plan (CHP) that describes the safety procedures that are required at your school.
- Document all efforts to resolve safety issues in your classroom. Any safety issues or equipment problems that need repair must be carefully documented in writing and submitted to the proper administrator for immediate action. If you cannot successfully resolve the issue at the site level, send a letter to the superintendent or school board describing the problem, your efforts to correct the condition, and possible solutions for resolving the problem. Attach copies of your documentation. Save all letters and documentation.
- Do not leave your classroom during any instructional period. Every teacher has a primary duty to properly supervise students. Never leave students unsupervised for any reason.
- All students should wear the appropriate personal protective equipment while working in the laboratory. Chemical splash goggles, and chemical resistant aprons should be worn whenever any chemicals (no matter how minimal the risk of perceived injury) are to be used by students. Protective eyewear must be worn during all laboratory activities and demonstrations.
- Teach safety all year and review safety procedures often. Teachers have a duty to provide proper safety instruction. Start the year with a student safety contract. Then get in the habit of reviewing a safety rule every day at the beginning of lab. It is critical that you review the appropriate safety precautions with students prior to beginning any laboratory activity. Remember to document all safety instruction that you provide in your lesson plan book.
- Make safety a priority in the classroom by establishing and modeling safe chemical handling practices. Set a good example for your students by always wearing

appropriate personal protective equipment and performing laboratory procedures in a safe manner. Not only will your actions speak louder than words to your students, but if an injury to a student occurs, their attorney will not be able to use your good practices against you.

- Use smaller volumes and amounts of chemicals. Smaller chemical quantities result in smaller spills, reduced vapors, and less material for disposal. Smaller chemical quantities also usually result in less severe injuries to your students. Microscale as many labs as possible, particularly those that use volatile or hazardous chemicals.
- Demand appropriate safety training related to your duty of care in the science classroom. Your school district is responsible for appropriate training to enable you to meet your duty of care in the classroom. Science laboratories are industrial areas requiring specialized training and knowledge that must be updated frequently.
- Do not permit students to use damaged or defective equipment. Damaged or defective equipment can cause serious harm to students. Until the equipment can be repaired, do not use it. If the conditions of your laboratory facility are unsafe, then document the safety issues and do not permit laboratory activities until the conditions are remedied.
- Do not permit students to take chemicals or any other school equipment home to perform “experiments.” Theft of unlocked chemicals, performance of unauthorized experiments, and unsupervised home experiments expose students to potential injury and teachers to negligence liability.
- Be proactive rather than reactive.

Connecticut Science Supervisors Association

Responsibilities of the Teacher

The science teacher's responsibilities begin with a duty to offer appropriate instruction to students. In a laboratory situation, this requires that careful attention be given to the materials and techniques used by both teacher and student. The location and proper use of emergency equipment, evacuation procedures, and proper procedures for the handling of supplies and equipment should be taught in formal, planned lessons (See Appendix B for the Student Safety Agreement.) Students should be tested formally on the topics, and the material should be reviewed and reinforced periodically.

Specifically, directions for laboratory activities should be provided in *written* form, with the instructor reviewing the directions with students before the activity is done. In discussing the activity, the teacher should remind students of the procedures to be followed and of appropriate methods for the safe use and disposal of materials to be used. Students' knowledge and practice of laboratory safety techniques should be evaluated on an ongoing basis by the direct observation of students in laboratory situations, and the inclusion of safety-related questions on tests and quizzes administered throughout the year.

The requirement for appropriate instruction extends also to field trips and to projects done outside the school, e.g., as part of science fairs or exhibits. Even if the activity is being done as a "home" assignment, the teacher must be aware of the materials the student is using and must determine that safe procedures are being followed. The same safety guidelines used for in-class laboratory activities should be applied to out-of-class projects, whether they are independent science projects or school-related investigations. Written parental or legal guardian permission should be obtained before a student embarks on any out-of-school independent science project. In the case of a science field trip or planned class outdoor experiment, emergency medical information as well as written permission must be provided. Where necessary, specialized safety equipment may be required and should be available.

A second responsibility of the teacher is that of adequate supervision of student activities. The laboratory is a potentially dangerous environment, requiring the careful attention of the instructor. Lessons in laboratory safety should emphasize appropriate student behavior. Students should not conduct laboratory activities without supervision, and should be allowed in the laboratory only if the teacher is present. It is recommended that short-term substitute teachers not be permitted to conduct laboratory activities. If an extended teacher absence requires that regular classwork continue, the long-term substitute teacher must be both certified and qualified to conduct laboratory investigations.

Special-needs students may require an increased level of supervision. It is important that these students be active participants in the science program. However, their safety is the greatest consideration. The teacher must take into account the limitations and abilities of each special-needs student and decide, on an individual basis, which experiments are appropriate for each one of these students to perform. Handicapped stations, both portable and those that can be permanently installed in a lab room, are available.

While teachers are aware of the need to exercise care in the use of chemicals, they must also be alert to the potential hazards in the biological and physical science laboratories. For example, the teacher must provide adequate instruction and supervision in students' use, handling, and disposal of live and preserved specimens. The physical science laboratory may present problems related to the use of electrical devices or in the handling of projectiles. Finally, the teacher must develop an awareness of potential allergens which may be used in the laboratory or which may pose a hazard in laboratory, field trips, or outdoor investigations.

Since the maintenance of a safe laboratory environment is an additional responsibility of the science teacher, the teacher must be aware of, and take steps to correct, unsafe conditions. The written notification of supervisors should be followed by additional requests for the correction of the problem, and documentation of the requests should be maintained by the teacher.

Additional concerns for the science teacher are the physical design and the condition of the laboratory. Of particular importance are:

A. SAFETY EQUIPMENT AND SUPPLIES

- The Occupational Safety and Health Administration (OSHA) requires the presence of eyewash fountains and safety showers. Fire extinguishers and fire blankets should be a part of the basic equipment of every laboratory. The local fire marshal can be a source of information as to the appropriate type and placement of extinguishers. State and local codes will dictate the presence and location of shut-off valves for gas, electricity and water in the laboratory, as well as for the installation of ground-fault interrupters.
- Materials for the containment and clean-up of chemical spills should be readily available. Commercial spill kits may be purchased from most school laboratory supply companies. Teachers or staff members who administer emergency treatment are protected from civil damages for ordinary negligence if they have satisfactorily completed a course in first aid with a local health department or with one of several organizations, such as the American Red Cross.
- Each school district's purchasing agent will be able to provide the names of companies specializing in safety and emergency equipment and supplies. Also, the National Science Teachers Association publishes a document containing the names of suppliers of safety and emergency equipment and materials. A list of resources is given in the Appendix I.

B. CHEMICAL PURCHASE, STORAGE, DISPOSAL

While some element of risk is inherent in most laboratory activities, the responsibility of assessing the hazards and usefulness of chemical reagents is of particular concern to the teacher. The following should be considered when deciding on the chemicals to use in the science program:

- Identification of chemicals requiring particular care in handling, storage, and/or disposal;
- Identification and subsequent elimination of chemicals deemed too hazardous for use in a school science laboratory; and
- Revision of existing laboratory experiments which employ materials and/or procedures deemed too hazardous for use in a school science laboratory. The teacher is advised to consult professional literature on a regular basis in order to ensure that information is both current and correct.

Security is a vital element of chemical storage. All storage rooms and cabinets should be kept locked. The storage of chemicals in classrooms is inappropriate. Although alphabetical arrangement of chemicals is convenient, it may result in incompatible chemicals being placed in close proximity to one another. Flynn Scientific has a very good recommended storage pattern in their catalog.

For reasons of health and safety, OSHA guidelines require the maintenance of a current chemical inventory. A copy of the inventory must be available, and the location of hazardous and flammable chemicals should be noted. In order to ensure that school personnel have access to information on hazardous chemicals present in the school, OSHA guidelines require the creation and maintenance of a file of Safety Data Sheets (SDS).

Proper maintenance of stored chemicals includes periodic inspections for signs of aging or deterioration of both the chemicals and their storage containers. Aging and deteriorating chemicals, chemical waste generated by the science program, and unwanted hazardous chemicals must be disposed of in an appropriate manner. The U.S. Environmental Protection Agency has identified reagents that present specific risks to the environment. It has specified procedures for the disposal of these reagents. Chemicals identified as hazardous must be disposed of in licensed landfills, and must be transported to these landfills by licensed disposal services. The Connecticut State Department of Environmental Protection maintains lists of licensed waste handlers and of state-licensed disposal companies. Since the cost of disposing of unwanted chemicals can be considerably greater than their purchase price, the teacher is advised to become familiar with disposal requirements before chemicals are purchased.

Copies of the Chemical Hygiene Plan, the Standard Operating Procedures, the Hazard Communication Program, and Safety Data Sheets must be kept on file and be readily accessible to all school personnel.

SUBJECT TO APPROVAL

**Madison Public Schools
Board of Education Regular Meeting
August 17, 2021
7:30 PM
Polson Library & Remote**

MEETING MINUTES

Full documentation of these proceedings can be found through on demand video located in the Meetings/Minutes section of the district website

1. Call to Order / Attendance

The public meeting of the Madison Board of Education was called to order by Chair Galen Cawley at 7:35 p.m. Mr. Cawley led the Pledge of Allegiance.

Present: Galen Cawley, Greg DeSantis, Cathy Miller, Tom Pellegrino, Emily Rosenthal, Katie Stein.

Also present: Craig Cooke, Ph.D., Superintendent; Gail Dahling-Hench, Assistant Superintendent; Bill McMinn, Facilities Director; Zoe Roos, Communications Specialist, several members of the public.

Chair Cawley began by thanking teachers and administrators for their dedication and work over the summer and for their extraordinary efforts over the past 18 months. The district's goal is to have 180 days of school, in person. In anticipation of public comment this evening, Chair Cawley noted there will be legitimate disagreements regarding issues such as the state mandated mask policy. Tonight is a business meeting and after Dr. Cooke's report, there will be time for board member comments and public input which will be limited to 3 minutes per person. Our Board Secretary, Emily Rosenthal will monitor the length of comments – a yellow card will represent there are 30 seconds left, a red card will mean to wrap up as quickly as possible. Chair Cawley also reiterated the board is available by email.

2. Superintendent's Report

Craig A. Cooke, Ph.D.

Dr. Cooke began his report noting that Governor Lamont will not be changing his executive order mandating the wearing of masks in schools through September 30, 2021. The district will follow that mandate and by doing so are acting in accordance with the Centers for Disease Control and the American Academy of Pediatrics. Dr. Cooke reiterated the goal of 180 in-person school days, and the best path forward to achieve that at this time is to follow the mandate.

There are areas where we have relaxed mandates or recommendations from the CDC and our local Department of Health, specifically the three feet rule for quarantine. It is likely that

students who are fully vaccinated will not have to quarantine, and then rather than maintaining a six-foot distance, we are looking at a 3-foot distance. School buses, as with any public transportation, requires that riders wear masks.

Outdoor physical education, recess and sports will take place without masks, with the exception of indoor swimming and volleyball. As indicated previously, we do plan to return to a more normal school operation. Cohorting will be much less than the last school year. The district follows a cohort model K-3, but beyond that the school day will be much different with open recess, sharing of student materials and lunch resuming in the cafeterias. The CIAC has announced sports can begin on schedule (football has already begun) and extracurricular activities will begin as well.

Dr. Cooke reported Madison is one of the highest vaccinated towns in the State, including 60% of the town's 12-17 year-old population and another 5% who have started the process. We estimate 2/3 of our students will be vaccinated by the start of school.

We are looking forward to welcoming teachers back on August 25 with new teacher orientation scheduled for August 24. Convocation will be held in smaller groups, by building, and Chair Cawley will be joining us. Dr. Cooke noted this is the third consecutive year we are asking teachers to do something we have never asked of them before. Thank you to Gail Dahling-Hench for leading our re-opening group which met today and to all who assisted with the reopening plan. Thank you to Bill McMinn and the entire facilities group for taking such care with our buildings and keeping them very clean! Thank you to our Technology team who have worked tirelessly throughout the summer in virtually every area. We are pleased to report that the Chromebooks that have arrived are ready for our students.

Dr. Cooke noted we have seen an increase in kindergarten enrollment throughout the summer (Jeffrey, 89; Ryerson 65), with students continuing to enroll. After exploring all avenues to move a teacher from another location, we felt it best to hire an additional teacher at Jeffrey, the cost of which will be paid out of savings from some unexpected retirements and resignations which occurred this summer.

Also on the agenda tonight is the review and approval of our 10 year CIP Plan. Bill McMinn spoke to the adjustments to the 22/23 plan at each of the schools.

3. Board Member Comments

Emily Rosenthal thanked Dr. Cooke for his report and updates, as well as teachers, the opening committee, and Gail Dahling-Hench for her work.

Katie Stein echoed Mrs. Rosenthal's comments. Mrs. Stein expressed her concern about students arriving at school without masks, asking if there will be a policy or can a policy be created to designate a staff member to address that. Mrs. Stein also asked about religious exemptions - if we have students with religious exemptions that have been approved, what can be done in the classroom to mitigate that situation for students who are not? Will there be an option for distance learning? Mrs. Stein also voiced the importance of talking about how the district has utilized the American Rescue Plan and ESSER grant dollars to help support the re-entry to school.

Dr. Cooke provided the following:

To my knowledge, we did not see any issues with mask wearing in the schools. Students were incredibly compliant and after speaking with my colleagues, in many other districts as well. With regard to exemption, there is a process to go through which the State has promised they will address; however, to my knowledge, there were no exemptions last school year. We did have students who took more mask breaks or those with accommodations. We do anticipate that occurring again this year and will deal with that on a case by case basis with assistance from the school medical advisor. If there are students who are approved, we will look at other mitigation strategies. The State has indicated there will be no distance learning option for this year; however, there will be exceptions when a student is quarantined. We were fortunate to have received approximately \$1.2 million in grant money which will be allocated over the next three years. We have put funding towards social emotional efforts and have hired full time social workers in each of our schools. On the academic side, we have reduced class sizes and added interventionists at the K-3 level, where we feel will need the greatest academic support. We also spent some money on technology, as well as on building substitutes.

With no further Board comments, Chair Cawley moved to the Public Participation portion of the meeting, noting there will be disagreements and stressing that the district is under a State Executive Order.

4. School / Community Session

4.1. Public Participation

Numerous members of the public were present. Full comments can be found on the recording on the district website.

5. Board of Selectmen Liaison Scott Murphy

No report – Mr. Murphy was not in attendance this evening.

6. Consent Agenda (Ref. Bylaw #9540.2 and #9540.8) – No consent agenda

7. Board Committees / Liaison Updates (Ref. Bylaw #9450)

7.1. Curriculum and Student Development

Members: Diane-Infantine-Vyce, Chair; Greg DeSantis, Catherine Miller

No report – the committee has not met.

7.2. Communications Committee

Members: Tom Pellegrino, Chair; Diane-Infantine-Vyce, Greg DeSantis

No report – the committee has not met.

7.3. Facilities Committee

Members: Emily Rosenthal, Chair; Happy Marino, Katie Stein

No report – the committee has not met. Mr. McMinn provided an update on what has taken place over the summer. Yearly, extensive cleaning of the buildings, which is still ongoing, but will be ready for the return of the teachers. Mr. McMinn spoke about the problems with getting carpet, and the challenges of taking apart a classroom, specifically at the elementary level, in order to lay down new carpeting and paint, and then putting that classroom back together. Carpet had been removed at the high school and we had no choice but to replace it with what was available. The solar project has been delayed as we are waiting for the steel to arrive, which may create issues when the teachers return. Mr. McMinn spoke to the shortage of custodians, noting one new full-time person was hired over the summer.

7.4. Finance Committee

Members: Katie Stein, Chair; Happy Marino, Tom Pellegrino

No report – the committee has not met.

7.5. Personnel Committee

Members: Violet McNerney, Chair; Diane Infantine-Vyce, Catherine Miller

In Dr. McNerney's absence, Chair Cawley reported that NAGE has moved into mediation as a formal agreement has not been met. Formal teacher contract talks will commence in the next few weeks. We are waiting to hear from the Teamsters in order to move the custodial contracts for mediation forward.

7.6. Policy Committee

Members: Happy Marino, Chair; Violet McNerney, Emily Rosenthal

No report – the committee has not met. Mrs. Rosenthal noted there is one policy on the agenda tonight for a first reading: #3020.7 Budget Procedures and Line Item Transfers.

8.7. LEARN Liaison

Katie Stein

No report.

9. Action Item: Motion to approve \$2,462.86 donation from Stop & Shop A+ School Rewards to Jeffrey Elementary School

MOTION: by Miller, seconded by Stein to approve the \$2,462.86 donation from Stop & Shop A+ School Rewards to Jeffrey Elementary School
AYES: Cawley, DeSantis, Miller, Pellegrino, Rosenthal, Stein
NAYS: None
ABSTAIN: None
MOTION CARRIED: 6-0

10. Action Item: Motion to approve the disposal of used equipment

MOTION: by Stein, seconded by Pellegrino to approve the disposal of used equipment.

AYES: Cawley, DeSantis, Miller, Pellegrino, Rosenthal, Stein

NAYS: None

ABSTAIN: None

MOTION CARRIED: 6-0

Action Item: Motion to add agenda item to approve the Board of Education's prepared CIP expenditures.

MOTION: by Stein, seconded by Rosenthal to add an agenda item to approve the Board of Education's prepared CIP expenditures.

AYES: Cawley, DeSantis, Miller, Pellegrino, Rosenthal, Stein

NAYS: None

ABSTAIN: None

MOTION CARRIED: 6-0

Action Item: Motion to approve the Board of Education's prepared CIP expenditures of \$951,832 as noted in the documentation. All in favor, motion carried 6-0.

11. Action Item: Motion to approve the minutes of the July 6, 2021 Board of Education Meeting (Ref. Bylaw #9540.0)

MOTION: by Rosenthal, seconded by Miller to approve the minutes of the July 6, 2021 Board of Education Meeting

AYES: Cawley, DeSantis, Miller, Pellegrino, Rosenthal, Stein

NAYS: None

ABSTAIN: None

MOTION CARRIED: 6-0

12. Future Agenda Items

13. Meetings/Dates of Importance

14. Adjournment

MOTION: by Stein, seconded by Pellegrino to adjourn the meeting at 8:56 p.m.

AYES: Cawley, DeSantis, Miller, Pellegrino, Rosenthal, Stein

NAYS: None
ABSTAIN: None
MOTION CARRIED: 6-0

The Town of Madison does not discriminate on the basis of disability, and the meetings are ADA accessible. Individuals who need assistance are invited to make their needs known by contacting the Town's ADA/Human Resources Director, Deb Milardo, at 203-245-5603 or by email at milardod@madisonct.org at least five (5) business days prior to the meeting.



DATES OF IMPORTANCE

- September 21, 2021 Public Forum on School Building Project – 7:30 p.m.
- September 28, 2021 Finance Committee Meeting – 5:30 p.m.
Policy Committee Meeting – 6:30 p.m.
Board of Education Meeting – 7:30 p.m.
(Workshop: Academic Results)
- October 12, 2021 Curriculum & Student Development Committee – 5:30 p.m.
Facilities Committee Meeting – 6:30 p.m.
Board of Education Meeting – 7:30 p.m.
- October 26, 2021 Finance Committee Meeting – 5:30 p.m.
Policy Committee Meeting – 6:30 p.m.
Board of Education Meeting – 7:30 pm
(Workshop: Public Forum)
- November 9, 2021 Curriculum & Student Development Committee – 5:30 p.m.
Facilities Committee Meeting – 6:30 p.m.
Board of Education Meeting – 7:30 p.m.
- November 30, 2021 Finance Committee Meeting – 5:30 p.m.
Policy Committee Meeting – 6:30 p.m.
Board of Education Meeting – 7:30 pm
(Workshop: School Development Plans)