References:

Chapter 246-366 WAC: State Board of Health Rule for Primary and Secondary Schools
Chapter 296-800 WAC: Safety and Health Core Rules
Division of Occupational Safety & Health (DOSH) Directive (WRD) 13.00 Emergency Washing Facilities
Chapter 296-24 WAC: GENERAL SAFETY AND HEALTH STANDARDS
PART E HAZARDOUS MATERIALS, FLAMMABLE LIQUIDS, SPRAY FINISHING
PART K COMPRESSED GAS AND COMPRESSED GAS EQUIPMENT
Chapter 296-828 WAC: HAZARDOUS CHEMICALS IN LABORATORIES
Chapter 296-901 WAC: GLOBALLY HARMONIZED SYSTEM FOR HAZARD COMMUNICATION
RCW 28A.320.125: Safe school plans—Requirements—Duties of school districts and schools—Drills—Rules—First responder agencies. (wa.gov)
Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, Updated Version | The National Academies Press (PP)
Chapter 51-52 WAC: STATE BUILDING CODE ADOPTION AND AMENDMENT OF THE 2021 EDITION OF THE INTERNATIONAL MECHANICAL CODE
eCFR :: 29 CFR 1910.1450 -- Occupational exposure to hazardous chemicals in laboratories.
1910.1450 App A - National Research Council Recommendations Concerning Chemical Hygiene in Laboratories (Non-Mandatory) | Occupational Safety and Health Administration (osha.gov)
1910.1048 - Formaldehyde. | Occupational Safety and Health Administration (osha.gov)
1926.152 - Flammable liquids. | Occupational Safety and Health Administration (osha.gov)
Chapter 296-856 WAC: Formaldehyde
fema_earthquakes_reducing-the-risks-of-nonstructural-earthquake-damage-a-practical-guide-fema-e-74.pdf
Chapter 70A.230 RCW: MERCURY (wa.gov)
DOH School Chemical Data Base 333-253.xlsx (live.com)
Chapter 70.100 RCW: EYE PROTECTION—PUBLIC AND PRIVATE EDUCATIONAL INSTITUTIONS (wa.gov)
Chapter 173-303 WAC: DANGEROUS WASTE REGULATIONS
School Chemistry Laboratory Safety Guide (cdc.gov)
Toolkit for Safe Chemical Management in K-12 Schools | US EPA
Schools | Washington State Department of Health School Environmental Health and Safety – Resources
Safety and School Science Instruction | NSTA
Green Chemistry for K-12 Teaching Washington State Department of Ecology
F413-012-000 Employer's Guide to the Hazard Communication Rule (wa.gov)
eCFR :: 29 CFR 1910.1450 -- Occupational exposure to hazardous chemicals in laboratories.
2021 Washington State Fuel Gas Code Digital Codes (iccsafe.org)
2021 Washington State Mechanical Code Digital Codes (iccsafe.org)
2021 Washington State Building Code Digital Codes (iccsafe.org)
2021 Washington State Fire Code Digital Codes (iccsafe.org)
F413-012-000 Employer's Guide to the Hazard Communication Rule (wa.gov)

K. Science Classrooms and Laboratories		**WAC or other Code Reference**	**Standard/ Recommended Practice**	**Plan Review**	**Reason for Change**
K 001	Science laboratories shall have an inventory list of all chemicals. This list must be updated periodically. (Recommendation is annually or more frequently.)	296-901~~800-17005~~ ~~296-800-17010~~ RCW 28A.320.125(3)(b)~~(3)(b)~~	PP 2.D.4		
K 002	Science laboratories shall have a written Chemical Hygiene Plan (CHP) that is available to all students and staff members. It shall be reviewed annually and updated when necessary. Also see K 024. (New science teachers shall review the CHP as part of their ~~Employee~~ employee ~~Safety~~ safety ~~Orientation~~orientation; see K 052.)	296-828-20005 296-901-1401062-~~40009~~	PP 2.B		

K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
	NOTE: The L&I DOSH Directive (WRD) 13.00 Emergency Washing Facilities provides guidance on implementation of WAC 296-800-150 rules for emergency eye washes and showers and is a reference for K 003-K 007.				
K 003	Emergency eyewash and shower stations shall be provided as required by SBOH ~~L~~and L & I 's ~~WISHA~~ DOSH rules when the eyes or body may come in contact with corrosives, strong irritants, or toxic chemicals. Safety data sheets (SDSs) should be referenced to determine the hazards. ~~Emergency facilities.~~ Emergency fixtures ~~an~~d shall be located within 50 feet or ten seconds walking distance from all lab science work stations, including in chemical preparation rooms. There shall be no obstacles in the pathway to the stations, including doors (unless there is panic hardware on the exposure side).	296-800-15030 ~~ANSI Z 358.1-1998~~ 246-366-140 ADA	ANSI Z 358.1 PP 7.F.2.5,	X	
K 004	Emergency showers must deliver water to cascade over the user's entire body at a minimum rate of 20 gallons (75 liters) at 30 psi per minute for 15 minutes or more with tepid water (60ºF-100ºF).	296-800-15030 ~~ANSI Z 358.1-1998~~ ADA	ANSI Z 358.1 PP 7.F.2.5.1	X	
K 005	Eye-wash stations and emergency showers shall be handicap accessible and operable "hands-free" so that the user can hold both eyes open. Hand-held squeeze bottles, some drench hoses, and many faucet-mounted devices (with 2 or more valves for activation) ~~Hand-held showers and eye-wash equipment~~ do not meet current L & I DOSH ~~WISHA~~ rules. ~~(except as auxiliary or extra protection).~~ Refer to DOSH Directive 13.00 for acceptable emergency washing equipment.	296-800-15030 ~~ANSI Z 358.1-1998~~ ADA	ANSI Z 358.1 PP 7.F.2.5, 9.B.8	X	
K 006	Eye wash stations shall provide 0.4 gallons (1.5 liters) per minute for 15 minutes or more at 30 psi with tepid water (60ºF-100ºF). In some areas with high water pressure, flow regulators may be required on the eye wash stations.	296-800-15030 ~~ANSI Z 358.1-1998~~ ADA	ANSI Z 358.1 PP 7.F.2.5	X	
K 007	Emergency showers and eye wash units shall be inspected and tested for proper operation annually. Inspections should include examination of the piping, water temperature and quality, activation to check that the valves and other hardware work properly, and water flow rate. Plumbed emergency eye washes must be activated weekly. Written documentation of tests shall be maintained on site.	296-800-15035	~~PP 7.F.2.5~~		
K 007a (D 023)	Emergency ~~S~~showers and ~~E~~emergency ~~E~~eye ~~W~~washes should have plumbed drains. Emergency showers should have a contained area sufficient to hold and direct the water when activated to the floor drain. Emergency ~~E~~eye ~~W~~wash basins should be directly connected to a drain pipe. This will facilitate the requirement for activating them weekly and prevent wet floors, flooding, slips, and falls. Shower curtains are recommended for privacy.		OSPI and DOH 296-800-15030, 15035, 15040 296-800-22025, 22030 PP 9.B.7	x	

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K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
K 007b (D 024)	Acid neutralization tanks in science labs are not recommended. These tanks are prone to blockage and inadvertent disposal of acidic wastewater above discharge limits.		OSPI and DOH	x	
K 008	In chemical laboratories, chemical storage rooms, and ~~photography darkrooms~~other spaces using chemical products or solvents, an increased rate of outdoor air ventilation is required by the ~~WA Ventilation Code; i.e., 20 cfm per occupant.~~ IMC Chapter 4 Ventilation and Table 403.3.1.1 Required Outdoor Ventilation Air. See ~~Section F~~ Indoor Air Quality Section F (~20 cfm/person).	~~296-62-11005 WAC 51-13, Table 3-4~~ 51-52-403.3.1.1	PP 9.C	X	
K 009	~~A building commissioning report which documents outside air volumes meeting 15-20 cubic feet per minute (cfm) per occupant is recommended. (See Indoor Air Quality Section).~~ A building commissioning report on all newly constructed school buildings should document meeting minimum or higher outside air requirements where required and~~&~~ wher~~e~~n elected to be included in the design. All schools should follow the minimum Commissioning and Operations recommendations in the WSSP. (See Indoor Air Quality Section F 014)	~~51-13 Sec.304~~ 51-52-403.3.1.1	PP 9.C WSSP	X	
K 010	~~There shall be an on-demand, mechanical ventilation system providing additional air exchange as required by WISHA and the WA ventilation Code for chemical areas such as photo darkrooms, storerooms, and chemistry labs (this is in addition to the building HVAC system). (See Indoor Air Quality Section).~~ An on-demand mechanical exhaust system providing emergency air evacuation/purge is recommended for chemical areas such as photo darkrooms, storerooms, science labs (and other appropriate areas) with exhaust directly to the outside. "Locate room purge buttons at the exits in laboratories with chemical hoods. For most laboratory buildings, activating the room purge button shuts down or minimizes supply air while increasing exhaust ventilation. In the event of a chemical spill, activating the purge system will help ventilate the resulting chemical vapors more quickly."	~~296-62-11005 296-62-075 296-62-40025 WAC 51-13~~	Prudent Practices *9.B.7 Safety Equipment and Utilities 9.C.6.4 Room Purge Systems* NFPA 45	X	
K 011	All chemical fumes and vapors shall vent directly to the outside without re-entrainment into the building or the building HVAC system. (See Indoor Air Quality Section F 003).	~~296-800-1104062-11007 246-366-080~~ 51-52/IMC, Table 403.3.1.1 501, 502	PP 9.C NFPA 45	X	
K 012	Make-up air must be provided to laboratories in amounts equal to exhaust air~~-~~ to maintain negative pressure~~when the ventilation rate is increased~~. (See Indoor Air Quality Section F 005).	~~296-62-11009~~ 51-52/IMC 501, 502	PP 9.C NFPA 45	X	

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K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
K 013	Only Underwriters Laboratory (UL) approved~~No unapproved~~ heating devices are allowed in laboratories or storerooms. ~~Portable electric stoves are not approved heating devices for laboratories and storerooms.~~	~~296-24-985 U~~ 51-54A/IFC 603	NFPA 70/NEC	X	
K 014	Electrical receptacles shall be properly grounded. Ground fault interrupter (GFI) devices shall be provided on all electrical receptacles within six (6) feet of sinks and other grounding sources. This includes fume hoods with a cup sink and water supply.	296-800-280 51-54A/IFC 603~~296-24-95607 NEC NFPA 45~~	NFPA 70/NEC 200 NFPA 45 PP 7.C.1.2	X	
K 015	All electrical equipment shall be properly grounded. Portable electrical equipment shall be double-insulated or provided with a UL-listed ground prong.	296-800-280~~40 296-24-95607 296-24-95609 NEC~~	NFPA 70/NEC 200 NFPA 45 PP 7.C.1.1	X	
K 016	Electrical extension cords shall be UL-listed, and the wire size shall be appropriate for the applied use. Use must comply with L&I rules. (C 031)	51-54A/IFC 603 296-800-28030 ~~296-24-95609 UFC NEC~~	NFPA 70/NEC 200 NFPA 45 PP 7.C.1.1		
K 017	There shall be at least one ~~demonstration~~ fume hood for each laboratory where hazardous chemicals are used. ~~It is recommended that~~ If there is also a~~-~~ demonstration hood~~s~~, it should be installed away from walls so students can view demonstrations from three sides.	~~296-62-40009 (3)(c) 296-828~~ 296-366-080	NFPA 45 PP 9.C.2 29 CFR 1910.1450 App A	X	
K 017a	If a demonstration hood is built into the wall between the chemical storage room and the classroom, the hood's sashes and cupboard doors must be lockable when not in use to prevent unauthorized access to the chemical stockroom or prep room.		DOH & OSPI	X	
K 018	Fume hoods in school buildings must comply with AHERA asbestos regulations.	AHERA		X	
K 019	Chemicals should not be stored in fume hoods ~~except where the hood has been specifically built with a ventilated storage area. Chemicals should not be stored in the demonstration or working area of the hood~~. Evaporation of dilute solutions containing non-volatile, non-hazardous waste such as metal salts in water ~~in the hood~~ in appropriately labeled open beakers provided with secondary containment is allowed.	~~296-828~~62-~~40025 (3)(d)(ii (E)~~	PP 9.C.2 29 CFR 1910.1450 App A		
K 020	All fume hoods shall exhaust directly to the outside, away from all occupied areas and air intakes in order to prevent exhaust from reentering the building.	~~296-62-11007 UMC 296-62-40025~~ 51-52/IMC 501, 502		X	

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K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
K 021	Fume hood air velocity should be ~~6~~80-125 linear feet per minute (lfm) and should be checked quarterly with a velocity meter. Written documentation of all tests should be maintained on site. The exhaust capture path should direct contaminants away from the user. With the sash raised to 12 inches, the air flow should measure at least ~~6~~80 lfm.	~~ASHRAE 10-1995~~ ~~ANSI Z 9.5~~ ~~296-62-40025 (3) (c) (iv) (G)(H)~~	ANSI Z 9.5 PP 9.C.2 ASHRAE/ANSI 110 29 CFR 1910.1450 App A NFPA 45-7	X	
K 022	Fume hood use is required when using known or suspected carcinogens, mutagens, teratogens, chemicals which are fast acting/highly toxic, listed as toxic via skin absorption or inhalation, or chemicals with a threshold limit value (TLV) or permissible exposure limit (PEL) of 50 ppm or less. This determination shall be based on information provided by ~~material~~ safety data sheets.	~~296-62-4005~~ ~~296-62-4009~~ ~~296-62-40025 (3)(e)(i)(AA)~~ 296-828 WAC 296-07306	PP 9.C.1	X	
K 023	All electrical devices used in the fume hood such as switches, lights, motors, etc., shall be explosion-proof.	~~296-24-95613~~ ~~NEC~~	PP 7.C.1.2 NEC 7	X	
K 024	The chemical hygiene officer (e.g., science department chairperson or science teacher) shall develop and carry out ~~maintain~~ a written chemical hygiene plan (CHP; see K 002). It should include an operation~~s~~ and maintenance program for laboratory fume hoods, emergency eye washes and showers, and other mechanical equipment in science laboratories.	296-828-20005 296-901-14010~~296-62-40009(3)(c)296-62-40009(3)(h)296-62-40025 (3)(c)(iv)(H)~~	PP 7.C.1.2		
K 025	Master gas shutoffs are required. Master electricity and water shutoffs are recommended. Directional signs should be provided to the ~~electricity and gas master~~ shut-offs as well as other safety items in all laboratory areas. "The dedicated shutoff valve shall be readily accessible, located within the laboratory space served, located adjacent to the egress door from the space, and shall be identified by approved signage stating, "Gas Shutoff."	~~296-62-40025(3)(d)(viii)~~ 51-52 / International Fuel Gas Code 409.6	PP 9.B.7	X	
K 026	Invisible hazards (radiation, chemical, electrical, laser, and heat) should~~all~~ be posted with warning signs or symbols when present.	~~296-24-140~~ ~~296-62-09004(6)~~ ~~296-24-14001/09~~ ~~296-62-40025~~	PP 29 CFR 1910.1450 App A ANSI Z136.1-2007	X	
K 027	Food items (for human consumption) should not be permitted in chemical laboratories or storerooms (including lab refrigerators). No eating, drinking or gum chewing shall~~ould~~ be allowed in labs to prevent poisoning through ingestion. All food items to be used for experiments and refrigerators used to store them shall~~ould~~ be labeled "Not for human consumption."	~~296-62-40025(3)(e)(I-J-K)~~ 29 CFR 1910.141(g)(2) & (4)	PP 6.C.2.3		

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K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
K 028	Chemical storerooms shall be lockable and inaccessible to unsupervised students, and have self-closing doors per WISHA, DOH, and State Fire Code (UFC) requirements for chemical laboratories and chemical storerooms. Doors shall have a one-hour fire rating per UIFC (or greater if required by local fire code).	296-62-40009 296-62-40025 U 51-54/IFC Ch. 50 51-50/IBC 414.2.4	PP 5E,10, 2.D.2 29 CFR 1910.1450 App A	X	
K 029	Chemical storerooms should be large enough for adequate and proper storage of chemicals. Storage areas should be maintained in a neat, organized, and clean manner with chemicals stored compatibly.	296-62-40025	PP 5E, 2.D.2 29 CFR 1910.1450 App A	X	
K 030	Chemical storerooms should have sturdy, well-supported shelves secured to the walls. All shelves should have "earthquake" (or "spill-prevention") lips on all shelf edges. Doors that close on cabinets do not replace the need for spill-containment "lips" on the front edge of shelves.	296-62-40025	PP 5E, 2.D.2 FEMA E-74 6.5 29 CFR 1910.1450 App A	X	
K 031	Chemical storerooms should have all hazardous chemicals stored at or below eye level (typically below 5' 60") with heavy objects stored on lower shelves below eye-level. Higher shelves may be used for other items, e.g., light-weight glassware, equipment, paper goods, etc.	296-62-40025	PP 2.D.2, 5E 29 CFR 1910.1450 App A	X	
K 032	Chemical storage areas should be kept cool (between 55 and 80 degrees F) and dry (relative humidity between 30 and 60%).	296-62-40025	Consult SDSs	x	
K 033	Chemicals shall be stored according to their properties, in separated compatible storage groups, not alphabetically (i.e., flammables, health hazard, reactive, oxidizer, radioactive, etc.).	296-62-40009296-62-40025 NFPA 45 8.3.4	PP 2.D.2, 5E 29 CFR 1910.1450 App A	x	
K 034	Chemicals should be organized and stored according to a recognizable, safe system (e.g., Flinn, Baker, Sargent-Welch, etc.) to separate segregate incompatibles. Labels shallould clearly denote at least the identity of the container's chemical contents, warnings about it's health and physical hazards, of each container and the date received. Chemicals should also have the four color NFPA diamond on the container for emergency responders.	296-62-40025 296-901	PP 2.D.2, 5E	X	
K 035	Chemicals marked only with teacher lesson codes (e.g., A, B, C, D), for student testing/analysis, require a supplemental form of identification that meets the labeling requirements. These preparations should not be stored long-term. allowed in permanent storage. Mix only enough for required use and dispose of as required. one day's classes and then restock or dispose. All unmarked chemicals should be labeled with container contents and re-shelved, or disposed of, in accordance with WAC requirements.	296-901800-17025 296-62-40025	PP Chapter 5		

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K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
K 036	~~All flammables shall be stored in approved flammable storage cabinets with self-closing doors. Flammables (red labels), and acids, and bases (white labels), shall be stored separately.~~ Flammable liquids in excess of 10 gallons total shall be stored in approved flammable storage cabinets with self-closing doors. Cabinets shall be locked or located in a locked room when not in use. Flammables (red labels), acids, and bases shall each be stored separately. Flammable wastes must be disposed of in approved flammable waste containers. Flammable waste containers must be emptied daily. Consult with your local fire marshal for specifics on storage of flammables. L 028a, R 011c)	296-24-33009 NFPA 45 8.3.4 51-54A IFC 5704.3.4.4, Ch 57 173-303-630	PP 5.E.5	X	
K 037	~~The chemicals in Table 1 of Appendix D to this Guide are a safety hazard and may not be used in K-12 schools according to OSPI and DOH. If found, they must be removed from the school by qualified personnel and properly disposed of in accordance with the school's chemical hygiene plan and DOE regulations.~~ A school may not purchase for use in a primary or secondary classroom bulk elemental mercury or chemical mercury compounds. ~~By~~As of January 1, 2006, all primary and secondary schools in the state must have removed and properly disposed of all bulk elemental mercury, chemical mercury, and bulk mercury compounds used as teaching aids in science classrooms, not including barometers. (Barometers are not recommended; see K 068.)	~~296-62-40009 246-366-140 OSPI-DOH~~ RCW 70A.230.040			
K 038	Schools should only store and use chemicals appropriate for their level of science instruction. The DOH School Chemical Datab~~-~~Base, originally developed by the King County Local Hazardous Waste Management Program and the Washington State Science Teachers' Association, lists science laboratory chemicals, their physical, health, and environmental hazard, the lowest grade level it should be used in, storage category, experiments where used, disposal method, and whether it should not be allowed at any grade level. "Banned candidate" chemicals should not be used in schools. ~~The chemicals in Table 2 of Appendix D to this Guide have been determined by DOH and OSPI as suitable in small quantity and in advanced classes in senior high laboratories. No more than one pound of each chemical may be stored on site in any case.~~	~~296-62-40009~~ 246-366-140	OSPI and DOH		
K 039	Chemicals should be purchased in the smallest commercially available container or in a quantity that will meet the school's needs for approximately five ~~one academic~~ years, whichever is more practical and affordable. All chemicals should be dated upon receipt into the lab or storage area.	~~296-62-40025(3)(d)(11)(A-E)~~	PP 2D, Ch 5 29 CFR 1910.1450 App A		

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K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
K 040	Chemicals should be dispensed to students in the minimum amount necessary for immediate use. Green chemistry curriculum is recommended to reduce chemical hazards in the classroom and waste disposal costs. Refer to Department of Ecology guidance.	~~296-62-40025(3)(d)(11)(A-E)~~	PP 2D, Ch 5 29 CFR 1910.1450 App A		
K 041	~~There should be a separate storage shelf, cabinet, or area for water reactive compounds (e.g., metallic sodium, potassium, or calcium) and organic peroxides.~~ Separately store water-reactive compounds, e.g., elemental lithium, sodium, potassium, magnesium, and calcium. If availability of separated shelf space is limited, store them with dry metal elements like copper, iron, and zinc. Organic peroxide reagents are not appropriate in K-12 schools.	~~296-62-40025~~	PP 5E 29 CFR 1910.1450 App A		
K 042	All concentrated acids should be stored in approved acid cabinets. ~~Non-compatible acids should be stored separately (e.g., nitric, acetic).~~ Separate concentrated nitric acid from organic acids like acetic acids. Store concentrated sulfuric and hydrochloric acids on separated shelves to prevent accidental release of chlorine gas. Non-metal cabinets are recommended to prevent corrosion of the cabinet by acid vapors.	~~296-62-40025~~	PP 5E 29 CFR 1910.1450 App A		
K 043	Laboratory-grade, flammable-rated refrigerators and freezers should be used to store sealed chemical containers of flammable liquids that require cool storage. Do not store food or beverages in the laboratory refrigerator. ~~Only explosion-proof refrigerators shall be used to store volatile chemicals.~~ Non-explosion proof refrigerators or other electrical devices shall not be located in areas with vaporous or flammable chemicals.	~~UFC Art. 79~~	29 CFR 1910.1450 App A PP 5E	X	
K 044	Instructors shall wear personal protective equipment (PPE) when using corrosive, toxic, reactive, or irritating chemicals and during hazardous activities as required by L & I ~~WISHA~~ rules.	296-800-160 ~~296-62-40025(3) (d)~~	PP 7.F.1.3		
K 045	Eye protection, safety glasses, goggles, and face shields shall meet the requirements of the American National Standards Institute (ANSI Z.87.1). Students shall wear personal protective equipment (PPE) when using corrosive, toxic, reactive, or irritating chemicals and during hazardous activities.	RCW 70.100 296-800-160 ~~296-62-40009~~	PP Ch 6, 7.F.1.3 29 CFR 1910.1450 App A		

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K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
K 046	A non-asbestos fire blanket should be provided, identified, readily available, and visible to students and staff. Fire blankets can be used to wrap a burn victim to douse flames as well as to cover a shock victim and to provide a privacy shield when treating a victim under a safety shower in the event of a chemical spill. NOTE: Laboratory personnel should be taught that fire blankets can be dangerous if used incorrectly. Wrapping a fire blanket around a person on fire can result in a chimney-like effect that intensifies, rather than extinguishes, the fire. Fire blankets should never be used on a person when they are standing.	~~296-62-40025~~	PP 2.F.2		
K 047	Safety shields on the demonstration table should be used for demonstrations wherever the possibility of explosion exists.	~~296-62-40025~~	PP 7.F.2.2		
K 048	Jewelry should not be worn if personal safety would be jeopardized.	~~296-62-40025~~	DOH & OSPI		
K 049	Loose hair should be restrained so that personal safety is not jeopardized.	~~296-62-40025(e)(i)(P)~~	DOH & OSPI		
K 050	All laboratories should have a written clean-up plan for spills. All laboratories should have a spill clean-up kit or materials for absorbing spills identified and readily available to students and staff.	~~296-62-40025(3)(d)(ix)(C)~~ 296-800 296-828	29 CFR 1910.1450 App A PP 2.F.3,4, 6.C.10		
K 051	Waste disposal shall be ~~disposed~~ in accordance with Department of Ecology (ECY)~~OE~~ regulations. No waste or old chemicals shall be poured down the drain or put in the solid waste without written approval from local sewer or solid waste authorities.	173-303 ~~296-62-40025(3)(e)(i)(EE-GG)~~	PP Ch 8	X	
K 052	A written and documented lab safety orientation that includes components of the Chemical Hygiene Plan (CHP; see K 002, K 024) shall be provided for all staff and students.	296-901~~800-17030~~ ~~296-62-40011~~	PP 1.D.1, 2.B, Ch 4 29 CFR 1910.1450 App A		
K 053	A telephone for reporting emergencies shall be located in or near the laboratory. Emergency telephone numbers shall be readily accessible. Staff shall be trained in emergency procedures.	RCW 28A.335.320 296-800-110 ~~180-41-035(3)~~ ~~296-62-40025(3)(d)(viii)(A)~~	29 CFR 1910.1450 App A PP 3.D.2.1	X	
K 054	Lab floor plans shall be kept in the school office. A listing of exits, chemicals, and storage places of chemicals shall be included for use by emergency responders. Exits shall be clearly marked and free of obstruction.	~~296-800-310~~ ~~296-62-40025~~ RCW 28A.320.125	29 CFR 1910.1450 App A	X	

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K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
K 055	Fire extinguishers shall be provided (ABC type). Fire extinguishers shall be identified and readily accessible to staff and students. The instructor shall be trained in fire extinguisher use. Demonstration or hands-on training shall be provided during the lab safety orientation.	296-800-300 ~~30010~~ ~~296-62-40025(3)(d)(vi)(D)~~	PP 2.F.2	X	
K 056	A fire alarm system shall be provided. Alarm pull stations shall be identified and readily accessible to staff and students.	296-800-31070 ~~296-62-40025(3)(d)(ix)(B)~~	PP 2.F.2	X	
K 057	Fire retardant lab coats shall be used as required by L & I ~~WISHA~~ PPE rules when appropriate for a specific project or demonstration.	296-800-160	PP 6.C.2.6.2 29 CFR 1910.1450 App A		
K 058	Formaldehyde ~~is~~ should not be ~~allowed~~ in K-12 schools. Laboratories using formaldehyde solutions must comply with the OSHA Occupational Standard for Formaldehyde. Biology specimens stored in formaldehyde should~~all~~ be decanted and preserved in a formaldehyde-free alternative, e.g., Flinnsafe, Carosafe, propylene glycol, or alcohol solution. Formaldehyde disposal shall adhere to ECY~~DOE~~ Dangerous Waste regulations.	~~296-62-07540OSPI-DOH~~ ~~1~~296-856 29 CFR 1910.1048 173-303	PP 11.C.1		
	Note: Specimens may contain up to 3.5% formaldehyde, even though they are stored in formaldehyde-free holding solutions. Formaldehyde is a gas; formalin is the diluted liquid form of it that's used in schools, typically at a 3.7% concentration. Dispose of specimens that lack information identifying the preservative and holding solutions. Schools should purchase formalin-free specimens if possible, or specimens stored in formalin-free holding solutions. Also see K 075.				
K 059	Biology specimens should~~all~~ be stored in sealed containers to prevent evaporation of liquid contents and resulting IAQ issues. Specimens preserved in hazardous or dangerous chemicals, e.g., alcohol, should~~all~~ be stored in locked cabinets.	~~296-62-080 Part J~~ OSHA 1926.152 NFPA 30	PP 5.E.1		
K 060	Glassware should be free of all cracks, chips, sharp edges, and other defects.	~~296-62-40025(3)(e)(i)(L)~~	PP 4.E.9		
K 061	~~Material~~ Safety Data Sheets (~~M~~SDS~~s~~) are maintained and readily available for all chemicals in the lab.	~~296-800-17035~~ ~~296-62-40011~~ ~~296-62-40015~~ 296-901 29 CFR 1910.1200	PP 4.B.2 29 CFR 1910.1450 App A		
K 062	A first aid kit shall be provided and adequately stocked in the lab area.	296-800-15020	PP 2.F.2	X	

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K. Science Classrooms and Laboratories		WAC or other Code Reference	Standard/ Recommended Practice	Plan Review	Reason for Change
K 063	Containers of non-hazardous substances (e.g., distilled water) must be labeled to avoid confusion. (ALL CONTAINERS MUST BE LABELED REGARDLESS OF THE CONTENTS.)~~.~~	296-901~~800-17025~~	PP 5D, 5E 29 CFR 1910.1450 App A		
K 064	Appropriate gloves, matched to the hazard, shall ~~must~~ be provided, and worn when the potential for hand contact with chemicals exists.	296-800-16065 ~~296-62-40025(3)(e)(i)(S)~~	PP 6.C.2.6 29 CFR 1910.1450 App A		
K 065	Closed toe shoes shall ~~must~~ be worn at all times in the laboratory. (No sandals or perforated shoes.)	296-800-16060 ~~296-62-40025(3)(e)(i)(P)~~	PP 6.C.2.6.2 29 CFR 1910.1450 App A		
K 066	A sink with soap and paper towels must be available in the lab for hand washing.	296-800-23025 ~~296-62-40025(3)(e)(i)(M)~~	PP 9.B.5.2, AppA.C.1.c	X	
K 067	Electrical ~~Panel~~ panel circuit breaker switches for the ~~Lab~~ lab shall ~~must~~ be accessible and the breakers labeled. A clear and unobstructed means of access with a minimum width of 30 inches and a minimum height of 78 inches shall be maintained from the operating face of an electrical panel board.	296-800-280~~28022~~ ~~296-800-28025~~ 51-54/IU~~FC~~ 604.3, ~~8509~~ NFPA 70 110.26		X	
K 068	Mercury liquid, compounds, and apparatuses are banned from schools. The lone exception is one functional mercury barometer is allowed per school, though not recommended. All mercury, mercury compounds, and mercury containing apparatuses ~~barometers~~ should be disposed of in compliance with ECY~~PA and DOE~~ regulations. The "Eco-Celli" barometer is a mercury-free barometer that will visually communicate the chemistry lesson of barometric pressure. ~~Information is available at:~~	~~EPA and DOE~~ RCW 70A.230.040 173.303			
K 069	Ethidium Bromide is hazardous via skin contact or ingestion. Gloves and eye protection shall be worn when handling it. Only purchase in kits and when done using it, dispose as toxic hazardous waste~~, though not classified as a hazardous material, can be very hazardous if poured down a sink or placed in the trash stream. Disposal practices for this chemical should be the same as for hazardous materials when concentration is above 0.1 %. Check with local or state agencies for disposal of aqueous and solvent solutions.~~. Alternative chemicals should be used whenever possible.	~~DOH and DOE~~ 173-303	DOH School Chemical Data Base		
K 070	~~NOTE: Batelle Research Center operates a website to assist schools with laboratory waste minimization and pollution prevention at: http://www.seattle.battelle.org/services/e&s/P2LabMan/index2.htm~~ Resource: CPSC/CDC/NIOSH School Chemistry Laboratory Safety Guide				

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K 071	~~NOTE: King County operates a website for teachers and students relating to Laboratory Safety in Schools at: http://www.govlink.org/hazwaste/schoolyouth/index.cfm~~ Resource: Toolkit for Safe Chemical Management in K-12 Schools | US EPA				
K 072	~~Vermont operates a website for school administrators and teachers titled "School Science Lab Cleanout Project." It includes a sample Chemical Management Plan, Chemical Inventory Guidelines with "excel" inventory forms and several sample plans and forms at: www.anr.state.vt.us/dec/ead/mercury/SchoolCleanout/cleanout.htm~~ The DOH School Environmental Health and Safety Program has numerous resources on Science Lab safety and inspection training videos.				
K 073	Resource: ~~NOTE:~~ The National Science Teachers ~~Education Leadership~~ Association ~~(NSELA) operates a website with many aides for school science teachers at: http://www.nsela.org/index.htm.~~ ~~See the article "Hazardous Chemical Removal" by Cliff Schrader at: http://www.nsela.org/safesci6.htm~~				
K 074	**Owl Pellets.** Always obtain owl pellets for dissection from reliable supply sources that sterilize them. After dissection, children need to thoroughly wash their hands with warm water and soap, and surfaces used for dissection must be thoroughly cleaned and disinfected.		DOH & OSPI K12HSG Appendix F		
K 075	**Animal Dissection.** Always obtain animals and animal parts for dissection from reliable supply sources. Specimens should not be preserved in formaldehyde. Animals found dead are not appropriate for classroom display or dissection. If a dead animal is brought to school, report it to your local health jurisdiction immediately and do not allow anyone else to touch it. Also see K 058-K 059.		DOH & OSPI K12HSG Appendix F		
K 076	**Taxidermy**. Preserved/stuffed animals are not to be handled by students. They are preserved with toxics, including arsenic and mercury. They are also potential allergens.		DOH & OSPI K12HSG Appendix F		

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