

Safety Mindedness in Visual and Media Arts: An Educator's Guide

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1. Introduction

This document represents current health and safety practices and strongly recommended procedures, based on the current research of the Ontario Art Education Association. It is for the benefit of elementary and secondary school educators teaching Visual Arts and Media Arts, and for school administrators and supervisory board officials. **Teachers must consult their board's operating procedures to ensure that their plans and actions comply with local policy.** Teachers with further questions should consult with their board and other available resources provided in this document. As noted in Health Canada's *Information for Art Class Teachers*, "teaching art must include enforcing safety rules, informing students how to perform a task safely and effectively, and showing them how to work in a safe environment" (2012, p.2).

As this document represents best practices and advice at the time of publication, OAEA and its Directors provide this information and recommended practices as professional advice only. OAEA and its Directors cannot be held liable for guidance or recommendations provided in this resource, or information errors due to government/district school board policy changes or manufacturer's alterations to materials or equipment.



2. Health and Safety Legal Responsibilities

Ontario's Occupational Health and Safety Act (1990), enforced by the Ministry of Labour, mandates health and safety regulations for all employees working in schools. On-site inspections are carried out in collaboration with school board Health and Safety staff, teachers federations, and Ministry officials. Teachers are also directed to the Ontario College of Teachers' Professional Advisory, *Safety in Learning Environments: A Shared Responsibility* (2013).

Students are protected under Ontario's Education Act (1990), and direction is summarized in The Ontario Curriculum documents, *The Arts, Grades 1 - 8* (pp.58-59); *The Arts, Grades 9 & 10* (pp.44-45) and *The Arts, Grades 11 & 12* (pp.46-47). Safety-mindedness practices, embedded in curriculum expectations, are consolidated in two Ministry of Education resource guides, *Health and Safety: Scope and Sequence of Expectations, Grades 1 - 8 and The Kindergarten Program and Grades 9 - 12* (2017).

Ultimately, it is every teacher's ethical and moral responsibility—one's duty of care—that determines healthy, secure classroom practices. In short, these include:

- ensuring that dangerous activities, conditions or materials have been substituted or eliminated;
- establishing and enforcing safe rules of behaviour;
- practising and evaluating students' understanding of correct and/or safe procedures;
- and maintaining regular records of health and safety activities that are part of a standard Visual/Media Arts program.

Following the best practices laid out in this resource, in addition to other local policies and resources, will contribute to meeting your 'duty of care' as an educator.

3. Types of Hazards, Effects of Exposure & Risk Factors

Types of Hazards:

- Chemical (e.g., paints, dyes, glazes, inks, clay, metals)
- Physical (e.g., lifting, noise, use of machinery & tools, repetitive strain, posture)
- Ergonomic (e.g., work stations, furniture design, vibration, body position)
- Radiation & Electricity (e.g., welding, lasers, kilns, power bars, cables)

Effects of Exposure can be (a) **acute**, a direct threat that shows up almost immediately after exposure such as burns from contact with a corrosive chemical or bleeding following a cut, or (b) **chronic**, that results from repeated exposure over months or years.

Risk Factors:

- **Toxicity** or how harmful the material is;
- **Degree of Exposure**, meaning how often, for how long, and the amount of the substance;
- **Total Body Burden** or how much already exists in the body;
- **Susceptibility** to a toxic substance depends on one's age, health, and individual physiology; and
- **Combined Exposure** to two or more chemicals that may interact and compound problems.

Common Routes of Exposure:

- **Ingestion**: poisons taken in through the mouth;
- **Absorption**: chemicals are taken in through the skin or skin abrasions (e.g., a scratch or cut) and the eyes (e.g., splashing or rubbing);
- **Inhalation**: gases, smoke or particulates breathed in through the nose and into the respiratory system.

Hazardous Chemical Ingredients and Substitutions:

Chemical Form	Potential Hazards	Substitutions
Adhesives	can cause skin, eye and respiratory irritation	use water-based, non-toxic glues & paste
Aerosols	release particulates that remain air-borne and can be inhaled; also, are highly flammable	use non-aerosol products
Corrosives	can burn and damage skin on contact, give off vapours, and may even become explosive if improperly mixed	replace concentrated corrosives with diluted solutions, use under well-ventilated conditions, and never with K-8 students
Pigments	can be chemically dangerous in powdered form, from both inhalation and absorption	use pre-mixed paints, dyes, and glazes
Solvents	can cause dermatitis and damage eyes and respiratory tract; poisonous if swallowed or inhaled	use water-based, less toxic solutions or vegetable oils

4. Health & Safety Related to Child and Adolescent Development

Students' growth and development are critical factors in their physical health and safety. The body's natural immune system is not fully developed until at least 18 - 22 years of age; therefore, children and teens are more likely to absorb toxic materials that can cause body damage. As well, faculties of reasoning, impulse control, risk assessment, and emotional response evolve slowly and at differing rates, depending on the individual and their environments.

Children have under-developed brain and nervous systems, making them highly susceptible to absorbing toxic substances. Relative to their body weight, children actually inhale more air than adults; coupled with smaller air passages and limited body defences, youngsters are more at risk from inhalation hazards. A child's lower body weight and the greater absorption capacity of children's intestinal tract are also significant: the smaller and younger the child, the greater the risk of poisoning from ingestion. Luckily, the deliberate ingestion of hazardous materials disappears as children get older, but their understanding of safety precautions and overall cleanliness may take a little more time and targeted instruction.

Adolescents, depending on a myriad of developmental factors and signposts, generate a greater tolerance for toxic materials, but their health can still be impacted by inhaling, absorbing or accidentally ingesting noxious substances. Intellectually and social-emotionally, most secondary school students possess the ability to comprehend safety rules and cautions about working with potentially hazardous substances, tools, and equipment. For this reason, most adult art media and equipment can be used with adolescents. Further insights about adolescent development can be found in *Stepping Stones: A Resource on Youth Development* (Government of Ontario, 2012).

Students with intellectual and emotional exceptionalities may require greater direction and supervision with visual and media arts materials and equipment. Modifications to furniture and equipment augmentations may be needed for those individuals with physical exceptionalities. As always, it's best practice to discuss in advance all necessary modifications and/or accommodations with each student, their parent(s)/guardian(s), and education colleagues.

5. Mental Health and Well-being

While this resource mainly focuses on the physical safety and health of students and teachers, we would be remiss if students' mental health and wellness were not addressed. A comprehensive approach to school climate and safety fully integrates mental health and well-being. "Students who feel safe in the classroom and more connected to their school are more likely to succeed in school and beyond. Research that makes the case for psychological safety in addition to physical safety helps explain why more schools are paying attention to school climate, incorporating practices like social-emotional learning, trauma-informed practices, and positive disciplinary policies into their schools." (*Integrating Mental Health into School Safety*, p.2)

Exceptional, well researched professional documents and websites exist that all teachers should be familiar with: *Supporting Minds: An Educator's Guide to Promoting Students' Mental Health and Well-being* (Ontario Ministry of Education, 2013); *Professional Advisory: Supporting Students' Mental Health* (OCT, 2018); *Everyday Mental Health Classroom Resource* (School Mental Health Ontario & ETFO, 2021); *Mental Health Literacy* (Calgary, AB, 2022); *Integrating Mental Health into School Safety* (Kognito, n.d.).

Teachers are also directed to resources that address trauma-informed or therapeutic approaches to visual art and media art learning, as well as current research and practices that focus on social-emotional learning (SEL). See the Resources listed at the end of this document.

6. WHMIS Training / Professional Learning

Canadian labelling laws require that products used, handled or stored in workplaces (including schools) come under the jurisdiction of the Workplace Hazardous Materials Information System (WHMIS). This regulation covers any and all hazardous products, requires that Materials Safety Data Sheets (MSDSs) accompany these same products, and employee education about WHMIS and hazardous materials take place. Teachers of Visual and Media Arts usually receive this training at the start of their career and must intermittently renew their training, as required by their employer, so that their knowledge is current with changing regulations.



In addition, opportunities for both elementary and secondary teachers of Visual and Media Arts to better understand health and safety priorities should be (1) provided by district school boards / private or independent schools and (2) actively pursued as individual professional learning. Organizations such as the Council of Ontario Directors of Education should be consulted regarding resources, direction, and institutional leadership related to health and safety, as well as student injury prevention in schools.

See Health Canada's *Information for Art Class Teachers: Chemical Safety* (2012), available online, for further detailed information.

7. Student Instruction in Safe & Healthy Practices

"As students mature, gain independence, and explore their learning and working environments in even more complex ways, it is imperative that they gain the knowledge and skills... to identify and minimize risks to their health and safety." (*Health and Safety, Grades 9 - 12: Scope and Sequence of Expectations*, p.2) Active participation—learning by doing—through shared responsibility, implicates students in the effective delivery of any health and safety program. Explicit instruction, establishing routines and co-constructing rules, student self-regulation and hygiene, peer vigilance, and studio maintenance all factor into a complete program of health and safety awareness, as producers of art.

7.1 Hazard Recognition

Students need to be taught to recognize a potential health or safety hazard. This involves both an act of **imagination**, as in "What if...?" or "What might happen if...?", and **activism**, as in "I should immediately wipe up that spill" or "I need to inform the teacher about Hardeep's injury." Safety minded teachers, although ever-apprised and vigilant, cannot be everywhere at once; students have to assume responsibility for their learning by being their own safety wardens. Helping students to recognize what constitutes a hazard tempers ego-centrism by awakening a regard for their surroundings and promoting empathy for their classmates. Ultimately, student participation in managing safe, hazard-free spaces can reinforce their studio "habits of mind" and empower uninhibited production.

Instruction about hazards must not frighten students or make them hyper-cautious about working with visual art materials or equipment—we want them to take risks with their work. The purpose is to alleviate fear and demonstrate a degree of respect for the processes and products of art making. A reasonable strategy is to interrogate students' prior knowledge about specific processes and materials, to uncover what they do and don't know about their proper use. Some educators advocate testing students about specific safety protocols; this strategy might be perceived as punitive, whereas integrating safety rule prompts and questions into typical instruction would prove more intuitive and contextually fitting.

7.2 Safety Expectations & Rules

Ministry curriculum documents for The Arts contain some expectations related to health and safety (see #2. above), however they are not extensive in depth, number or breadth. Teachers must ensure that students can meet these specific expectations, but also need to establish their own requirements and guidelines for students, in their learning space. K - 8 students should learn safety rules that are task-specific (i.e., proper handling of scissors; avoid putting paint brushes or art paste in their mouths; thoroughly washing their hands after an art making task); 9 - 12 students can be provided with a more comprehensive list of health and safety expectations as part of their course orientation, when semesters begin.

Co-creating essential classroom standards—or rules—is accepted practice among constructivist-oriented educators. This can also be done for safety mindedness procedures. One strategy is to give students a hypothetical scenario, ask them what's unsafe or hazardous about it, then devise a rule to govern that situation. There's greater chance that rules "will stick" if students are involved in their inception. As well, be judicious and efficient about classroom rules: too many will mean they're ignored; too trivial will mean they're not taken seriously.

Just as many adults require frequent reminders about basic rules, children and adolescents need refreshers and reinforcement. Classroom signs offer visual reminders; students can even be involved in making these. Placement (Is it at the correct height? Is it adjacent to the pertinent equipment?), priority (Where does a problem exist? Should the sign warn, instruct or simply remind?), and changing signs (Is

the message too dated and therefore lost? How often should signs be changed?) are instructional considerations. Also remember, a bit of wit or humour can more easily grab attention.

Teachers should have reasonable, but effective consequences in place for uncooperative or deliberately careless behaviour, especially connected to the health and safety of others. Regardless of an individual student's artistry or the quality of their work, failure to follow established procedures for the safe use of equipment and materials should result in the interruption of all creative work, a sort of "time-out" until compliance can be assured and demonstrated.

7.3 Emergency Situations

Just as fire drills or lock-downs prepare everyone for a school-wide emergency, teachers should designate time to familiarize students with the locations and use of art room safety equipment. Where are fire extinguishers, fire blankets, eye wash stations, and first aid kits? More mature/responsible students can be trained in their proper use, depending on local regulations. It is not unreasonable to expect senior students to incorporate demonstrations of conventional health and safety procedures into their studio routine.

If a student, teacher or guest is injured, all work should instantly stop and the supervising teacher alerted. A good practice would be to have a pre-designated student go for assistance (e.g., teacher next door, main office), if requested. Bystanders should know to keep clear of the situation unless asked to assist. And it's entirely appropriate to inquire with students about how they should conduct themselves during an emergency.

7.4 Safety Contracts

A strategy that some teachers and schools have successfully adopted to promote greater student responsibility is the safety contract. Used in Science and Technological Studies programs for years, these commitments on paper ask students to pledge that they will follow safety protocols and positively contribute to the wellbeing of everyone in a class or extra-curricular activity. Students and parents/guardians signatures are included for those under 18 years. (See a sample in **Appendix A**.)

7.5 Students' Responsibilities

Teachers should strive for partial release of responsibility by devising independent, developmentally appropriate roles for students, as partners in a larger health and safety classroom plan. Have this conversation with students at the beginning of the year/semester, about their contribution. Ask: "How can you assist me [the teacher] with the safety and well-being of the class?"/ "Suggest ways you can help your peers stay safe and healthy when working in our Visual/Media Arts studio."

Students can assume responsibility—possibly leadership—in some of the following ways:

- a) **Distributing tools or materials** as assigned, then collecting and counting tools at class end.
- b) **Clean-up duties** to wipe down their own tables/desks at the end of class. Create an alphabetical listing where students are paired for a week-long duty to wipe down sinks and counters. Cleaning tasks can be designated based on the media use or activity, i.e., rinsing clay tools or collecting textbooks.
- c) **Safety monitors** can be appointed, from among voluntary, dependable students, to occasionally monitor equipment use (e.g., printmaking press or an editing suite). Of course, this doesn't exempt teachers from their standard of care responsibility, so prudent use of this strategy is advised.
- d) **Safety Watch** is a proactive strategy where the teacher reviews established classroom health and safety practices, related to a particular medium or activity. Similar to an oral quiz, teachers can make this recall of "what to watch out for" or "look-fors" a part of daily instruction.

8. Risk Management: General Tips & Advice

Key indicators or "look-fors" in this section are summarized in the "Safety Mindedness Checklist for Teachers and Administrators" (**Appendix B**), at the end of this resource.

8.1 Choosing Safer Materials

Always use the safest materials that are available. Substitute non-toxic (preferably biodegradable) for toxic or particulate materials (i.e., water-based printmaking inks; use pre-mixed paints, clays, and glazes). Nevertheless, visual and media arts consumable materials used in classrooms should be appropriately approved and labelled. In many jurisdictions, only district school board/independent school tender-purchased, sanctioned materials are to be ordered. Check your DSB/school's Operating Procedures for further information. **Individual teachers should not purchase and/or bring into a**



classroom any consumable material, including cleaning products, that have not been board-approved or properly labelled for use with children, including adolescents. A Materials Safety Data Sheet should be made available for any visual or media arts consumables, either through your DSB/school's health & safety officer or directly from the retail supplier or manufacturer. Any new materials must be provided with an MSDS. Some DSB/school's require an MSDS binder to be maintained in the art studio, containing MSDS with materials information, in case required by first responders during an emergency. Follow your board policies and procedures pertaining to the management of WHMIS and MSDS information.

8.2 Housekeeping & Classroom Organization

- **Large scale equipment** in Visual and Media Arts classrooms (e.g., paper cutter, drying rack, etching press, pottery wheel, drill press, editing suite) should be situated away from high traffic aisles, sinks, heating registers, and doorways, otherwise they impede movement. If possible, large equipment should be fixed in-place.
- **Shelving** should always be permanently fixed to walls and easily accessible for students.
- **Computers and media equipment** should be located on ergonomically appropriate tables or desks, and affixed to avoid movement. Wiring and power bars should be located behind equipment and properly secured. (See **10.1** below for details.)
- **Floors** should be regularly dry and damp mopped; avoid sweeping as it creates dust. Spills, spatters, and sink puddles should be immediately cleaned up. In wet areas, non-slip adhesive strips can be attached to the floor.
- Place **garbage receptacles** where they're required, i.e., next to sinks, adjacent to "messy" areas. Recyclable materials should be separated and disposed in their proper receptacles.
- Insure that **water temperature** is not erratic, otherwise students could be burned by scalding water.
- Maintain your **plumbing** by prohibiting semi-dried acrylic paints, clay, plaster or other semi-liquid materials from being washed down drains. Clay traps, where available, attached to the plumbing should be cleaned out twice-yearly, by professionals and outside of school hours. Sometimes a bucket of lukewarm water placed next to a sink can be used for initial cleaning of brushes or clay tools, prior to a final rinsing under a tap.
- **Tables/desks** should be configured to allow for easy access to sinks, storage cupboards, and exits. Students should be required to push unoccupied chairs/stools underneath tables. For easier cleaning by custodial staff, seating can be placed on table/desk tops at the end of the day.
- **Lighting** needs to be of sufficient illumination for the size of the room. Ensure dead lights are replaced as soon as possible. When darkening the room for projection or other purpose, make certain that some light is still available for safety reasons. Natural exterior light reduces the amount of electricity consumed to provide general and task lighting; natural light also has proven health and well-being benefits for students and staff. Classrooms with spotlights or track lighting should be regularly checked and replaced, and only serviced by custodians or qualified technicians.
- **Classroom/studio size** should correspond to the planned art activities. Provincial/school board policies often constrain class sizes, but health and safety regulations should influence, or possibly supersede overcrowding in Visual and Media Arts classrooms. Check your DSB/school's safety policies concerning "high risk" settings (e.g., science labs, technology shops, family studies rooms, gymnasias), as well as federation collective agreements, to see if Visual Arts facilities qualify for lower class sizes. Ultimately, if the room or class size cannot be adjusted, the curriculum has to be.
- Adequate **storage** should be provided for bulk supplies, materials in use, and student artworks/portfolios. Cluttered or disorganized rooms can promote careless work habits among students, as well as attitudes of impatience and indifference to others' work. Students' artworks-in-progress need to be respected by having their own storage space, if possible. Individual portfolios are often used as a further means of organization.
- **Collected materials and props**, a purposeful preoccupation of many Visual and Media Arts teachers, need to be boxed and stored, preferably away from regular work areas. Bi-yearly health and safety inspections often note disorganized, unkempt classroom spaces as hazards. An annual culling of books, magazines, props, student examples, etc. is a good habit to acquire.
- **Donated materials or equipment** from the larger community must (a) conform to your DSB's policy regarding donated materials (many do not allow this practice) and (b) undergo inspection and

subsequent approval for equipment (e.g., a pottery wheel, etching press, photo lighting) and materials (e.g., wallpaper ends or carpet samples, corrugated cardboard, wood scraps, styrofoam, textile scraps). Improperly serviced, slightly damaged or outdated equipment may prove a hazard to children or teens if not inspected by a knowledgeable and trained technician. Materials may also be of inferior quality, ill maintained or pose a health hazard (e.g., infested clothing or nails in wood scraps).

- **Waste disposal** should occur daily, even if financial constraints have recently forced cutbacks on custodial care in many schools and garbage is not always removed each night. Teachers can reduce waste and be role models by limiting paper towel use, recycling approved materials, and reusing plastic or tin containers for water, paints or clay slip. (See **8.8** below for proper disposal of hazardous waste.)

8.3 Hygiene, Clothing & Audio Devices

- **Food and beverages** should never be consumed in Visual and Media Arts classrooms/studios. For instance, ingesting food contaminated by paint or glaze residue on a table can cause illness or poisoning. Bottled water is generally acceptable, although it should be consumed at some physical distance from most art activities.
- **Hand washing**, using soap and water, should occur at the conclusion of all art making classes. Teachers may have to be insistent about this routine, but it's one that can easily eliminate ingestion problems.
- Avoid putting any **art materials or tools in mouths**. Sucking oil off new pen nibs or absent-mindedly putting a paint brush handle in the mouth are unsanitary habits that should be discouraged.
- **Clothing** in an art room/studio can accidentally be stained or dust-covered, depending on what's happening. In younger grades, students can bring a clothing cover from home (e.g., an old shirt), while art aprons or smocks may be more acceptable to older students. Any loose-fitting clothing, jewelry (e.g., neck chain or bracelet) or long hair that's not pulled back could potentially cause safety problems when using electric tools, pottery wheels or etching presses. Short of enforcing a dress code, students need to be made aware that functional personal attire must be considered in any co-constructed art room safety plan.
- **Audio devices** (e.g., cell phone with ear buds, headphones, etc.) are permitted by some teachers, for use during art production. Students insist that listening to music helps them concentrate, a rationale that will not be disputed here; however, audio devices can easily become a distraction, "tuning out" the teacher, along with ambient noise and conversation. Eliminating one's hearing during an emergency can have dire consequences. Again, a protocol should be established and firmly enforced if audio devices are permitted.

Art educator Olivia Gude says partial distraction and excessive noise are anathema to genuine productivity: "We've probably all... experienced times in our art classes when we were frustrated because creative chaos became simply noisy chaos with no work being accomplished. Talk about this experience with students. Get their ideas on how to create a serene working atmosphere" (NAEA Mentor, 2015).

8.4 Ventilation

- **Windows**, where available, should be open as frequently as possible to allow for free air circulation, in order to eliminate inhalation of dusts or low-level fume irritants (e.g., melted wax, solvents). The recent COVID-19 pandemic and the pronounced prevalence of students' allergies and sensitivities has exposed ventilation inadequacies in schools. Teachers must be extra vigilant about any materials that have strong odours and only use these when appropriate ventilation systems are installed and students have been warned. Otherwise, substitute odour-producing materials with those that are odourless or much less repellent.
- **Ventilation systems** must be available for ceramic kilns, either an overhead canopy hood or built-in extraction fan, found in newer models. Fans must be used during all bisque and glaze firings. For other situations, portable fans are usually insufficient for removing fumes or dust; they merely recirculate contaminated air. Other activities (e.g., acid etching, silk screen printmaking, soldering, woodworking, using solvents) require an adjoining ventilation system (i.e., a slotted, counter-height hood or "elephant trunk," moveable exhaust) to remove fumes or dust. For recent information about HVAC in schools, see Ministry of Education Memorandum 2021:B14. See also **Design Standards for School Art Facilities** (National Art Education Association, 2015); unfortunately, no similar Canadian resource currently exists.

8.5 Personal Protective Equipment

Prior to undertaking any visual or media arts process, teachers should become very familiar with the procedures, techniques, and resulting products. Part of this learning includes awareness about any personal protective equipment (PPE) that must be worn by everyone involved. PPE shields an individual from direct exposure to chemicals, air-born particles, vapours, mist, dust, and excessive noise. Getting students—who often believe they’re impervious to injury—to routinely use required PPE is usually difficult; however, with the advent of the COVID-19 pandemic, the importance of donning PPE, for certain tasks, may be received with less anxiety and fewer protests. Generally, most K - 8 visual and media arts activities will not involve PPE, although this is not absolute; “better safe than sorry” is the motto to follow.

- **Eye protection**, in the form of safety glasses or goggles, is essential for certain kinds of activities. Safety glasses (with the side panel protection) should be worn for sculpture techniques that involve flying chips, splinters, carving or forming wire. Goggles must be worn while working with any corrosive materials, fumes, or excessive dust. Students who wear contacts must be extra cautious as fumes and dust can easily seep under lenses. Any eye protection devices should be thoroughly disinfected or washed after daily use.
- **Dust masks and respirators** protect from vapours (e.g., melting wax, soldering, etching acid, photography darkroom chemicals, heated plastics, some glues or adhesives) and materials that give off air-born particulates (e.g., fired clay or soapstone, plaster, sanded wood, charcoal or soft pastel residue). Respirators are usually employed only under extreme conditions and under direct teacher supervision. Never allow students to share or exchange disposable dust masks.
- **Nitrile gloves**, instead of allergy-inducing latex or vinyl, should be worn when handling potentially hazardous or toxic materials, as well as materials that will (temporarily) stain the skin (e.g., fabric dyes, etching inks, wood stains, food colouring). Immediately replace a torn or leaking glove. Heat resistant Kevlar gloves should be available for use with kilns and other extreme heat-producing equipment.
- **Protective clothing**, as mentioned in 8.3 above, may be requisite for any messy, splash-causing activity in K - 8 classrooms. These can include aprons, smocks or old shirts. In 9 - 12 classes, occasionally aprons, even lab coats may be necessary. However, fashion-conscious secondary school students should be made aware—and continually reminded—that production work in Visual and Media Arts is frequently dirty and stain-causing.



8.6 First Aid

- **First aid kits** are critical equipment for every Visual Arts and Media Arts classroom. Ensure all staff know its location and that kits are regularly checked and maintained with replacement, non-lapsed supplies. Standard first aid supplies will be approved and regulated by school/DSB purchasing agents or policy. Supplements to first aid kits (e.g., antibiotic gels or creams, different band-aids) should be referred to authorities for approval. **Except during an emergency situation, students should never be given access to first aid kits.**
- **First aid training** should be made available to all teachers. Alternatively, information about first-aid certified staff members, including non-teaching staff, should also be known. Don't ignore minor cuts or abrasions, even if students dismiss any attention. Nitrile gloves must be donned when an injury involves blood. Burns should be immediately flushed with cold water; avoid applying any ointments or antibiotic creams because the skin requires time to air dry or these may trigger an allergic reaction. Be aware that shock might be the result of an injury and its undue emotional stress. Always seek assistance from medical professionals and administration in serious cases. Immediately afterwards, make sure that a safety incident report is completed and filed with your administration.



- **Fire extinguishers** must be easily visible and indicated by prominent signs. There must be one extinguisher in each Visual/Media Arts classroom and any adjoining office, studio or seminar room spaces. Extinguishers must be inspected regularly by a qualified building supervisor or the equipment supplier's designate to comply with Ontario Ministry of Labour safety codes. If there is a fire in the classroom, follow school fire safety protocols. Use an extinguisher only if you have been trained and feel sufficiently confident.
- **Eye wash stations** should be attached to or adjacent to sinks and always be in working order. If one is not built-in, teachers should know the location of the nearest eye wash station, usually in the custodial/building supervisor's space. Students need to be instructed in their proper use. Under no circumstances are they to use eye wash attachments for cleaning sinks. A weekly inspection of eye wash stations should include water reaching both eyes; running the stream until it is clear; and making certain the water is a comfortable temperature. For facts about using an eye wash station, see the **Canadian Centre for Occupational Health and Safety's** website.

8.7 Equipment & Tool Maintenance and Repair

- **Large fixed equipment** must be checked regularly and properly maintained or repaired. Operating instructions should be readily available and shared with all teachers who use specific machinery (e.g., kiln computer controls). As noted in **8.2** above, the locations of fixed equipment should not hinder movement.
- **Ceramic kilns** ideally should be located in a separate storage or ancillary room, away from students. If it must be placed/already exists in the same instructional space, a lockable metal cage should be placed around it. Under no circumstances should students be allowed near a firing kiln. Keep kiln interiors cleaned of clay debris and dust, especially around heat elements; wear a dust mask and use an industrial vacuum cleaner. Keep the immediate vicinity around the kiln clear of paper or any other potentially flammable materials. Avoid placing items, even drying ceramic works, on top of a kiln.
- **Paper cutters**, either guillotine-type or rotary trimmers, must be placed on a table or counter that allows sufficient space for their use. Avoid moving a paper cutter; designate a permanent counter or table site. A blade guard and lock should be fixed to guillotine cutters. Never leave the blade arm raised when the cutter is not in use, even for a moment.
- **Printmaking presses**—whether etching, relief or proofing—should be covered and moved out of the way when not in use. Students must be taught that these are not toys and should not be used for anything else other than printmaking. Table-top etching presses should have their cylinders raised and metal beds removed after production, otherwise the bed can eventually warp over time. If possible, eliminate temptation to touch by removing the press spokes or drive wheel. Ensure that students are fully trained to use a press, and be in the vicinity when prints are being pulled. Annual oiling and inspection of parts is proper maintenance.
- **Metal drying racks** (those with spring hinges) should only be used for drying artworks on paper and not general storage. Though not usually a hazard, their frames can become bent from excessive weight, causing these storage units to collapse.
- **Pottery wheels** should be stored away or covered when not in use. Student need to be trained in cleaning procedures and removal of excess clay. Also, due to the physical demands of wheel-throwing, students should be required to take occasional breaks in order to alleviate back muscle strain.
- **Cutting tools**, including scissors, can be dangerous without required training (and frequent reminders) in their proper use. Blunted scissors for primary and junior students are no less dangerous if improperly handled. Keep cutting tools sharpened and replace dull utility knife blades. Store cutting tools in lidded containers or labelled drawers, and check that the number of tools distributed and returned tallies. Also, insist that the correct tool is used for the required task (i.e., don't cut wire with tin snips or scissors; don't cut cardboard or matte board on a paper cutter). Doing so can dull or damage the cutting tool. Educate students to pass a sharp tool handle first, not to grab a falling tool, and always handle linocutting tools and utility knives so that they cut away from their bodies.
- **Power tools** (drill, jigsaw, sander, circular saw) require direct instruction and safety training. Designate specific areas for power tool use. Proper PPE is also required. Cordless, battery-powered

tools are less hazardous than those requiring a power or extension cord (tripping hazard). Remove all blades and bits for storage. Keep electrical tools away from sinks or other water sources. Regular tool inspection counts as preventive maintenance.

- **Equipment repairs** should never be undertaken by the teacher unless they are qualified or trained to do so. It is the school's responsibility, when notified, to undertake and finance required repairs. In some instances, repair money may be accessed from centralized school board funds.

8.8 Chemical Storage & Disposal (See also #4. above)

- **Solvents and flammable liquids** (e.g., lacquer thinner, turpentine, shellac & thinner, linseed oil, any petroleum distillates) should never be stored in a classroom. If you must use any of these materials in a secondary classroom, take added precautions regarding their use, ventilation, and storage. A metal storage (safety) can, with a spring-closing lid, is preferable. A metal, fire-resistant Flammables Safety Cabinet is the optimal storage choice, although these are expensive.
- Potentially **toxic or corrosive materials** (e.g., sulphuric acid used in zinc etching, epoxy glue, some ceramic glazes, aerosol spray paints, rubber cement) must never be used in K - 8 classes. These materials must be clearly labelled (according to WHMIS requirements), the hazards fully understood by their consumers, and stored away from working spaces when not in use. Again, a Flammables Cabinet is the best storage solution.
- **Chemicals** should not be stored (a) above eye level; (b) on the floor, even temporarily; (c) under a fume or ventilation hood; or (d) placed in direct sunlight or next to a heating source.
- **Paper towels or rags** used with flammable or corrosive materials should never be discarded in a waste paper, recycling or regular garbage bin. A separate, flammable waste container—metal, with a spring-loaded lid and foot-operated cover—should be available in the classroom. These must be emptied by custodial staff every night.
- **Hazardous waste disposal** is centrally coordinated in school boards, multiple times each year. This notice doesn't generally impact K - 8 visual art programs; secondary schools are more likely to accumulate hazardous chemical waste from science, technological studies, and visual art activities. Protocols require notifying administrators and building managers about the presence of hazardous waste that must be picked-up, according to school and local government policies. Check with your admin. and board operating procedures about how to proceed.
- A **materials inventory** is an effective control and means of quick reference for all hazardous materials. This can be updated annually and recorded in chart form. Notes about any MSDS concerns should be documented, along with material specifics, amounts on hand, frequency of use, storage particulars, and disposal requirements. It would be wise to share a copy with your building manager and administration.

9. Visual Arts Materials & Equipment Use

To reiterate, only materials purchased from school board tenders or approved suppliers, accompanied by MSDS, should be used in Visual Art and Media Art classrooms (See **8.1** above). Order only what is required for a particular semester, term or quarter as some materials may degrade or dry out with time. Use up old stock before new.

9.1 Drawing

- Drawing media used in PJ grades must be non-toxic (e.g., graphite, chalk, crayon, charcoal, oil pastels). Charcoal and chalks should be used sparingly and under well-ventilated conditions.
- In grades 7 - 12, when using dust-producing media (e.g., chalk or soft pastels, charcoal, graphite sticks) direct students to tap their drawings into a garbage receptacle, rather than blowing off excess residue. Damp mop floors immediately after class.
- Only water-based markers (e.g., Crayola™) or those labelled as non-toxic should be used. Permanent markers contain harmful solvents and have a distinct odour. Never use flavour-scented markers with K - 8 students as they may be ingested.
- Fixatives must not be used anywhere near students, and only by a teacher. Best to spray drawings out of doors, weather permitting.
- Avoid using rubber cement for mounting drawings, illustrations or graphic designs, with all students K - 12. Chemicals in some rubber cements are extremely flammable and some can cause nerve damage.

9.2 Painting

- Choose water-based, non-toxic liquid tempera or tempera “pucks” for PJ grades. Avoid paints in powdered form.
- Finger paints should be labelled as such. Thorough hand-washing must follow.
- Student-grade acrylic and watercolour paints can be used in upper elementary grades.
- Teachers should distribute paint in separate containers or palettes; don’t allow PJ students to help themselves from larger bottles. Acrylic paints used in senior elementary classes should also be teacher-allocated or carried out by trusted monitors.
- Substitute acrylics for oil paints. Oil paints and their solvents (e.g., linseed oil, turpentine) should only be used in highly ventilated spaces, under strict supervision. A few oil pigments contain extremely toxic chemicals—get to know which ones. Many DSBs/schools have banned the use of oil paints due to their volatility, slow drying, and student allergies.
- Water miscible oils are still oil-constituted, but use vegetable oils in their make-up. Water replaces regular solvents, however these paints still dry by oxidation, releasing vapours that should not be inhaled.
- Aerosol spray paints should only be used outdoors, under careful supervision. Many DSBs/schools have banned them altogether from school properties.
- When airbrushing, students must wear an approved mask and work in adequate ventilation to avoid inhalation of airborne particles.
- Historical technique simulations come with their own concerns: egg tempera paints can only be stored a few days because the egg vehicle will turn rancid; teachers should also check students for egg allergies. For fresco, use pre-mixed plaster to combine with water and liquid, not powdered pigments.
- Use house paints sparingly and in well-ventilated spaces. Alkyd or latex is preferable to oil.

9.3 Printmaking

- Water-based relief inks should only be used in PJ grades. Liquid tempera can be substituted when doing relief or stencil prints.
- In the PJ grades, avoid these techniques: etching, drypoint, engraving, lithography, and woodcuts. For Junior grades, a type of screen printing can be accomplished with adapted materials.
- Working in pairs when senior elementary and secondary students are using an etching press will offer assistance to individuals and monitor activity.
- In grades 7 - 12, organize the classroom so that an inking area (near sinks) remains separated from the printing space (student's desks).
- Substitute softoleum or similar rubber matrix materials for traditional linoleum, as the rubber cuts more easily and tool slippage is greatly reduced.
- Always use a bench hook for relief carving and rubber mats under drypoint engravings.
- If oil-based inks cannot be substituted, use vegetable oil as the solvent.
- Copper or zinc etching requires extraction ventilation, mandatory use of PPE, an adjacent eye wash station, and rigorous enforcement of rules. For melting wax grounds and rosin, use a ceramic surface hot plate with an auto-shutoff timer and have thermal/silicone gloves available.
- Never hand-wipe printing plates. Use tarlatan or newspaper. Avoid barrier creams as they do not offer the same protection as nitrile gloves.
- Substitute water-based inks for screen printing. Avoid using shellac, lacquers or tusche as these all contain solvents or mineral spirits, and are extremely flammable. Paper, liquid wax, frisket or contact paper can be used instead of lacquer-based films and blackout.
- Contaminated oily waste (inky cloths, gloves, paper towels) should be disposed in a metal, lidded, and labelled waste container. Alert custodians so that this refuse can be separately stored and dealt with by hazardous waste professionals.

9.4 Ceramics

- Always use moist clay, rather than powdered, to avoid dust inhalation. Avoid allowing K - 8 children to sand bisque-fired clay works because of the dust. Grades 9 - 12 students should also be discouraged from sanding fired pieces. Students must use wet sandpaper and a dust mask if they feel sanding is necessary, and perform the action directly over a garbage bin. During decent weather, sanding outside is preferable. Clay dust can cause silicosis after extensive exposure.
- Air-dry modelling clays can be substituted for earthenware clay bodies, with younger children.
- Elementary children should never be permitted to make ceramic objects that could be used for food or drink.

- Clean-up should consist of spraying tables or desks with a vinegar/water solution, then wiping down with paper towels and disposing with regular waste. Avoid sponges or cloths as they retain dust.
- Ceramic glazes, essentially liquid glass, should never be used with PJ students as some contain toxic chemicals. Alternate means of decorating fired clay works include acrylic paint, watercolour paint (with a final coat of acrylic medium), even tempera paint, although this is not water-resistant. Watercolours, augmented with coloured pencils, creates an attractive effect, as well.
- Glazes used with secondary students must be labelled "lead-free" and "cadmium-free." Purchase glazes in liquid form. A "food safe" glaze designation is required for any pottery intended for food or drink. Underglazes might prove better for younger students as painted effects are more predictable. Glazes should be brushed on, rather than dipped or sprayed.
- Potters' wheels should be used only by senior elementary and secondary students. Make sure adjustments can be made to the wheel for students, depending on arm length. Prolonged wheel throwing requires a position change or stretch to avoid back or carpal tunnel problems.
- Clay tools can be sharp. For PJ students, substitute with blunt kitchen knives, popsicle sticks, and other plastic utensils.
- Clay can significantly dry out the skin. Suggest that students use a skin moisturizer or hand cream after thoroughly washing their hands (teacher modelling can be persuasive).
- Frequently wash aprons as they contain dried clay and produce dust.
- See section 8.7 above for information about Kilns and Pottery Wheels.

9.5 Sculpture

- Use age-appropriate three dimensional media with PJ students: cardboard, papier-mâché, modelling clay or plasticine, wood assemblage, (earthenware) clay, wire (certain gauges), balsa wood, plaster of Paris (for casting & carving)
- Do not expose K - 8 students to dust from any sculptural materials.
- Paste for papier-mâché can turn rancid with a few days; use approved wallpaper paste and newspaper, rather than paste and pulp mixtures as they contain other chemicals and produce dust.
- Mixing and pouring plaster into moulds should occur outside of class, if at all possible, in grades 4 - 8. In secondary classes, students should wear dust masks if mixing plaster and be warned of the exothermic reaction (gives off heat) as plaster hardens.
- Never allow students to do body casts using plaster gauze/bandage due to the potential for burns, caused by the exothermic reaction. Plaster gauze can be formed over an armature, instead.
- Sharp carving tools, in grades 1 - 6, must be avoided; instead, substitute kitchen cutlery or plastic, student-friendly carving tools.
- Caution must be exercised in secondary classes when carving wood, plaster or stone as tools must be sharp. Blocks should be clamped in place or braced against a bench hook to avoid movement. Students must wear safety glasses/goggles to protect against flying chips and dust. They should be reminded to always carve with movements that flow away from the body and not in close proximity to others.
- Some soapstones contain traces of asbestos. Check with and purchase only from accredited suppliers.
- For modelling wax, use a hair dryer, rather than a heat gun to soften the wax. If melting wax for casting, use a crock pot or double boiler on a ceramic surface hotplate; keep melting temperatures as low as possible. Never work with an open flame.
- Avoid melting plastics or Plexiglas as these expel potentially toxic fumes and are flammable under the right conditions.
- Use acrylic paint for finishing plaster or wood sculptures, or add colour to plaster during mixing. Mineral oil, rather than linseed, can be rubbed into soapstone to achieve a patina.
- Wire used three dimensionally requires the use of safety glasses/goggles and possibly gloves. Metals fasteners, smaller gauge wire, and staples can be used to secure most wires. Soldering requires precautions about burns and fumes; proper PPE is necessary.
- Carving or cutting wood with power or hand tools also requires PPE. Clean up sawdust immediately and/or use tools that have an attached dust collecting system (get permission to use the school's Construction Shop).

9.6 Photography

- **Under no circumstances should darkroom photographic processing be done with elementary students.** Photo processing or darkroom chemicals can cause skin, eye, and respiratory irritation, as well as headaches, dizziness, and nausea. Substitute digital or cell phone cameras, Polaroid or Fuji



instant cameras, pinhole cameras, and photograms (using kid-safe papers), where darkroom processing is unnecessary.

- If darkroom techniques are practised (and they should be, if done safely), (a) purchase pre-mixed chemicals; (b) ensure that there is good extraction ventilation; (c) use a dedicated darkroom with sufficient physical space to allow unhampered movement; and (d) have safety equipment (e.g., eye wash station, PPE, spill kit) easily available and insure that all students are trained in its use. Photo chemicals must be appropriately stored and disposed of (See section **8.8** above).
- Coach students in safer darkroom practices: use tongs, instead of bare hands, with all developers, stop baths, and fixers; wear safety glasses or goggles; cover all baths when not in use to prevent evaporation and release of fumes; never dump used photo chemicals down a drain and into the municipal sewage system.
- All darkrooms should be equipped with a spill kit, in case of a major chemical mishap. Contact your building manager or administration or regional health & safety officer for further details.
- Lighting equipment, for indoor photography, should be handled with care; hot lights can cause burns; cables and extension cords must be taped down to avoid trip hazards; and never aim a beam directly into another's eyes.
- Digital photography with its computer manipulation requires other physical considerations. (See section **10.1**)
- When photographing people outside of a specific class or student group, permission must be obtained from those involved. Privacy and an individual's right to be photographed must always be respected; therefore, obtaining consent should be included as a routine part of every student photo shoot. Schools frequently have standard media release forms for this purpose.

9.7 Crafts

- **Textiles and fibre art** forms include weaving, felting, macramé, appliqué, batik, printing, and dyeing. Age-appropriate, adapted techniques can be used with PJ students (e.g., puppetry, felt collage, yarn weaving, paper quilting, repurposed clothing, animal hats).
- Any textiles should be new material. All approved, donated fabrics should be thoroughly inspected and washed before use.
- Plant (e.g., flax, jute, cotton), animal (e.g., wool, silk), and synthetic textiles (e.g., felt, nylon, acrylics) and yarns can produce dust from fine fibres. Vacuum or damp mop daily, after extensive use.
- Check stored fabrics for mold contamination. Store in a dry, humidity-free space.
- Promote caution when using sharp objects such as scissors, rotary cutters, needles, and pins.
- When using natural dyes from plants, research the types of plants in order to avoid anything poisonous or toxic. Purchase dyes in liquid or paste form to avoid inhaling powder residue. If using a commercial mordant dye, select a cold water type to avoid heating water. Wear appropriate PPE while mixing and dyeing fabrics or yarns.
- For batik resist, heat wax in an electric frying pan with temperature control or a double boiler to avoid overheating and possible fire. Use the lowest possible temperature for melting. Paraffin wax, rather than beeswax, or soya wax (plant-based, petroleum free) are non-toxic replacements.
- For ironing out batik wax, use layers of newspaper when ironing and an exhaust fan to reduce melting wax fumes.
- Fabric printing—using silk screens or relief blocks—can be accomplished using commercial block printing inks, that do not have to be heat set, and silk screen inks that are non-toxic and non-flammable.
- **Stained glass** should only be undertaken with senior secondary students, under strict procedures and using a dedicated classroom space.
- Thoroughly demonstrate glass cutting procedures. Students must wear safety glasses/goggles and gloves to avoid cuts from glass shards. Glass edges should be sanded with emery paper.
- Any glass fragments or small sheets should not be placed in the regular trash container, but separately wrapped in newspaper or kraft paper and masking tape, and labelled as "glass" for disposal.
- Use lead-free came and solders (e.g., tin, copper, silver or zinc) and less toxic fluxes. Frequently wipe the work surface with a damp cloth.
- **Copper enamelling** should only be undertaken with senior secondary students, under strict procedures and using a dedicated classroom space.
- To clean metallic bases for enamelling, substitute less toxic substances such as powdered pumice and water or a coarse sponge and dishwashing liquid.

- Enamelling kilns should be located on stable, fire-resistant counter tops and under extraction ventilation or near an open window with a fan. Enamel firings release toxic metals, fluorides, and smoke. (See 8.7 above for further kiln details.)
- Students should wear special PPE as they are working with an open kiln, which can cause thermal burns: welder's gloves, tongs, safety glasses/goggles, and wear long sleeved shirts. Keep a supply of ice water on hand for minor burns. Goggles with a shade number of 1.8 to 3—to protect against infrared radiation—should be used when looking into a hot kiln.
- When applying powdered enamels, brush on or dip them, instead of dusting or spraying. If spraying on, use a spray booth with an exhaust fan, and an N95 respirator. Normal housekeeping precautions against ingestion, inhalation, and fire hazards should be reinforced.
- To finish edges, do wet sanding or grinding to avoid dust.
- Enamel pieces should never be used for food or drink because of the risk of toxic metals leaching into foods or liquids.
- **Jewelry** making with PJ students can involve materials like beading, papier maché, paper quilling, plastic lacing, found objects, and air-dried clays (e.g., Das™ or Sculpd™). Avoid polymer clays (e.g., brands like Fimo™ and Sculpey™) as these emit toxic chemicals when baked to set the clay, even though this would be done outside of the classroom.
- If using soft soldering for metal jewelry, use lead- and antimony-free solders and less toxic fluxes. Exhaust ventilation, proper PPE, and a soldering iron holder are required for this type of thermal work.

9.8 Information / Consumer Design (Graphic Design)

- Creative design production in grades 1 - 8 (e.g., illustration, calligraphy, costume or poster design) can be accomplished with drawing, painting, and printmaking media and techniques. Any other specialized materials that teachers wish to use must be child-friendly, classroom-approved, and thoroughly researched.
- Much of design production in secondary school grades has migrated to digital platforms, from conventional drawing/drafting and cut-and-paste techniques. However, teachers need to be fully aware of the various, potential health hazards of digital technologies. (See 10.1 below for details.)
- Airbrush use must be strictly regulated. Use only water-based paints and avoid toxic pigments that contain lead, cadmium, mercury or manganese. Spraying should occur in a ventilated spray booth or students must don a respirator with N95 filters and have a window exhaust fan nearby. Make certain that students are properly trained in airbrush use, even those individuals who use them at home.
- For some illustrations, opaque gouache paints are used. This medium should be similarly handled like other paint media. (See 9.2 above.)
- Fixatives must not be used anywhere near students, and only by a teacher. Best to spray drawings out of doors, weather permitting. Otherwise, a spray booth must be used, along with a respirator. Substitute clear acetate or tissue paper covering sheets, instead of spray fixatives.
- Avoid using rubber cement for mounting drawings, illustrations or graphic designs, with all K - 12 students. Chemicals in rubber cement and its thinner can cause nerve damage and all are extremely flammable.
- Permanent, felt-tipped markers used for marker renderings in fashion, interior or industrial design courses should be alcohol-based, not toxic xylene-based. An inhalation hazard from using most permanent markers results from using a number of them at the same time, at close range.
- Further detailed safety considerations can be found on the Ontario Council for Technology Education's website under **Communications Technology - Graphic Arts Emphasis**.

9.9 Stage Design & Production

- See ***Play It Safe: A Safety Manual for School Theatres/Studios***. This resource has extensive and detailed information about theatrical design and production safe practices.

9.10 Non-Traditional Media or Hybrid Art Forms

- As new art forms and materials are introduced in elementary and secondary schools, teachers must exercise the same degrees of vigilance, caution, and practical expertise that they would apply to conventional visual art media and materials. Most of the above safeguards will apply.
- Performance art health and safety concerns can be located in existing drama/theatre resources: ***Play It Safe: A Safety Manual for School Theatres/Studios*** & ***Performing Arts Safety Manual*** (University of California).
- For sound/audio art works, refer to section 10.2 below.


10. Media Arts Materials & Equipment Use

10.1 Computers

Digital art created on a desktop computer (e.g., photo manipulation, animation, graphic design, video & audio editing, game design, interactive media, etc.) relies on computer technologies that seem relatively harmless, but possess unique, less conspicuous hazards.

- Ergonomic considerations for computer work stations should take into account (1) appropriate desk height; (2) monitor placement so that the top of the monitor is at eye level; (3) a viewing distance of 45 - 60cm., without leaning forward; (d) the keyboard and mouse are mounted under the table surface, with forearms horizontal and wrists straight; (e) shoulders are not elevated; (f) the head is erect and eyes are forward; (g) legs are bent at 90°; (h) the lower back is supported; (i) feet are flat on the floor; and (j) knees sufficiently clear the bottom of the work surface.
- Computer chairs should have (a) adjustable, "dynamic" backs; (b) seat pans that support the thighs, have at least 5 cm. of padding, and a curved front; (c) a swivel base, with five sturdy legs; and (d) a back rest with lumbar support.
- Wiring, cables, and power bars should be located behind hard drives and monitors. Cables should be bundled and secured, well away from user's feet and hands.
- Work breaks should be required of students to avoid body fatigue, especially from long periods of sitting. Even a 30 second stretch is beneficial. These pauses can be formally organized, but delivered with a bit of fun and playful competition (e.g., finger calisthenics or low-impact "hip-hop").
- Screen fatigue, including vision and eye strain, can occur for many reasons. To alleviate these problems: (a) reduce screen glare by blocking reflected light (i.e., dim ambient room lighting; close curtains on exterior windows); (b) situate terminals at right angles to windows; (c) make screen brightness and contrast adjustable for individual comfort; and (d) take regular breaks.
- Recent moves to allow students to use their personal devices (e.g., tablets, laptops, cell phones) means that screen size has diminished and prolonged work at that reduced level can also contribute to eye strain. Teachers should follow similar precautions that apply to desktop hardware. In addition, laptops and tablets (a) should be used on hard surfaces—not on laps—to improve posture and lessen lumbar strain, and (b) raised to near-eye level to ease neck strain.
- Warnings about duration and sound intensity pertaining to ear bud and head phone use need to be highlighted. Hearing loss and other audiological problems can result from excessive volume and/or extensive use.
- Internet accessibility, enabled by WiFi in schools, as well as the ubiquity of personal devices, social media, and digital instruction across all aspects of education, mean that student-artists need to fully comprehend and demonstrate their responsibilities as "digital citizens." Teachers and entire schools should adopt student standards (if not already in place), like those from the **International Society for Technology in Education (ISTE)**, and seek out resources and professional learning opportunities (e.g., **National Online Safety (NOS)** and **Media Smarts**).
- Student use of social media as vehicles for artistic production and collaboration should not be discouraged, but teachers must make social media guidelines and protocols abundantly clear, and treat infractions promptly and seriously. See the above NOS and ISTE resources for approaches and ideas.

10.2 Video or Film Production

- All students require rigorous training and practical experience in using video cameras, camcorders, and editing & audio equipment. Without this, equipment damage can occur and legal regulations (e.g., permission requirement before filming people) may be breached. In addition, mandatory inspection of equipment by those using it should be a routine practice, both before and after use. A dated and submitted checklist works well.
- Spent batteries should be discarded in a clearly labelled, plastic container. Once full, the container should be sealed and stored to await a hazardous waste disposal pick-up or to be recycled.
- Rechargeable batteries and their docks should be monitored. Recharge at room temperature. Don't overload electrical outlets by plugging in too many charging docks.
- **Students must be properly trained and certified before using any ladder, scaffolding, or lift/platform. Coordinate this training with your building manager/custodian and DSB/school safety staff. Require students to work in pairs, with ladders: one climbs while the other spots by holding the ladder. Teachers can easily be held liable and students can be injured.** 
- Extension cords, power bars, and equipment cables on floors must be taped down with duct tape or gaffer's tape, to avoid tripping hazards. Always wrap power cords, once or twice, around a table

or equipment cord leg; this will prevent equipment being pulled to the floor if someone trips over a cable or cord.

- Training and practice with lighting equipment set-up, handling, and striking should be an integral part of any film/video production curriculum. Procedures such as (a) donning insulated gloves when handling lights; (b) never touching or adjusting a 'hot' light; (c) lowering a lighting stand before removing a 'cold' light; (c) using safety chains to attach a light to an overhead grid or stand; and (d) stabilizing a light stand with a sandbag should be demonstrated and continually reinforced.
- LED lamps, now industry standard, have specific procedures for handling and must be disposed of separately from regular waste.
- Warnings about duration and sound intensity pertaining to ear bud and head phone use need to be highlighted. Hearing loss and other audiological problems can result from excessive volume and/or extensive use.
- Remind students to be fully aware of their surroundings during a video/film shoot. No running or horseplay around equipment or those using it. Audio ear buds or head phones should only be used by the person handling audio recording; otherwise, everyone else should be focussed on the action happening around them.
- Prior to shooting any film or video (i.e., a documentary or interview) with people outside of a specific class or student group, permission needs to be obtained from those involved. Privacy and an individual's right to be photographed or filmed must always be respected; therefore, a video consent and release should be incorporated into any student film or video production work.
- Detailed video/film production health and safety guidelines (re: lighting, scenography, sound recording) can be found in existing drama/theatre resources: ***Play It Safe: A Safety Manual for School Theatres/Studios*** and ***Performing Arts Safety Manual*** (University of California). Also, see safety instructional videos for **Communications Technology - Video Emphasis**, from the OCTE's website.

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12. Appendices

Appendix A - Sample Student Safety Contract

Visual Arts Student Safety Contract Anywhere Secondary School

Purpose

Visual Arts is a practical, hands-on class that requires the use of various materials, tools, and equipment. The health and safety of all students is a priority for your classmates, teacher, and parent(s)/guardian(s). To ensure a safe Visual Arts classroom, together we have developed a list of expectations that everyone needs to follow daily. By signing this safety contract, you commit to abide by these guidelines and reinforce their use among your peers, at all times. A parent's or guardian's signature is also required at the bottom of this form.

Expectations & Responsibilities

1. You are expected to conduct yourself in a responsible, caring manner at all times.
2. Follow all written and verbal instructions. If you don't understand a direction or have a question about an instruction, ask your teacher. Seek permission if you wish to work on a non-assigned art task.
3. Students are never allowed to work alone in the room, without teacher supervision.
4. Avoid touching any tools or equipment until you are instructed to do so. Never touch anyone else's artwork unless given permission.
5. Eating, drinking beverages, and gum chewing are not allowed in the Visual Arts room. Bottled water is permitted.
6. Place all knapsacks, purses, and books under your table, out of the way of the aisles. Leave your coat in your locker.
7. Audio devices are not permitted. Cell phones are not to be used inside the classroom, without permission.
8. Everyone is responsible for cleaning their own working space. Clean-up time happens during the final ten minutes of class. As well, a clean-up list will be created and posted; designated individuals are responsible, along with a partner, for cleaning the side counters and sinks at different times, throughout the semester.
9. You must maintain a notebook for this course in which to keep all task instructions, notes, and evaluation sheets. This should be brought each day.
10. Push chairs under your table when not in use. These must be placed on table tops at the end of the school day.
11. Be aware of what's going on around you and look out for potential safety hazards. Inform your teacher immediately if you recognize an unsafe situation or witness an accident or injury. A first aid kit is available in case of a minor injury.
12. Read labels on containers or instructions about tool use.
13. Students are not permitted in the Visual Arts store room or computer lab unless given teacher permission.
14. Once informed, know where the fire exits are located and specific procedures in case of a lock-down.
15. When using sharp tools, always work with them away from your body. Carry them with blades or tips point down, grasping them by their handles. Never try to catch a falling sharp tool.
16. Dress appropriately for a Visual Arts class—expect some messiness. Long hair, loose jewelry or baggy clothing may need to be secured, to avoid interfering with activities.
17. Never use the eye wash station for anything other than first aid. You will be instructed in its use.
18. Please inform your teacher if you have a serious allergy or wear contact lenses.
19. You should wash your hands with soap and water, at the conclusion of each class. Use the required personal protective equipment (e.g., dust mask, nitrile gloves, safety glasses) as directed.
20. Borrowing of materials or tools is only permitted for class assignments. Tools must be signed out and back in, when returned. Arrangements will be made to replace or repair any damaged or lost tools or materials.

I, _____, have read and agree to follow these safety expectations and responsibilities as outlined above. I will fully cooperate with my teacher and fellow students to maintain a safe working space. I realize that any misbehaviour or unsafe conduct in the Visual Arts class that ignores this contract, may result in disciplinary action or my temporary withdrawal from an activity or the class.

Student Signature _____ Dated _____

Dear Parent or Guardian,

We feel that you should be informed about the school's effort to promote and maintain a safe, healthy Visual Arts/Media Arts program. The general safety instructions above, as well as other task-specific ones, can assist in preventing and eliminating hazardous or unsafe learning conditions. Your signature below indicates that (a) you have read these expectations and (b) will encourage your child to follow and promote these guidelines, to the best of their ability.

Parent/Guardian Signature _____ Dated _____

Appendix B - Safety Mindedness Checklist for Teachers and Administrators

Ref. #	Housekeeping & Classroom Organization			
1	Large equipment (e.g., etching press, drying rack) is permanently located and isolated from high traffic areas	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
2	Shelves are affixed to walls and easily accessible for students.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
3	Computers & media equipment are placed on ergonomically-appropriate furniture. Electrical wiring is behind equipment and properly secured.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
4	Floors are reasonably clean, free of dirt, art materials, water & dust. Flooring around sinks has a non-skid surface.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
5	Garbage containers & recycling bins are properly situated and garbage is emptied daily.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
6	Water temperature is consistent and flows unimpeded.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
7	Sinks are clean and drain easily. Surrounding counter areas remain uncluttered.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
8	Clay trap is regularly cleaned (twice annually) by a professional contractor.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
9	Tables/desks and seating are configured for ease of student movement.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
10	Lighting illumination is sufficient for room size and activity. No flickering or burnt out bulbs.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
11	Storage cupboards are organized, not overloaded. Shelves are secure & not bowed.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
12	Heavy objects are not stored overhead, without being secured.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
13	Electrical cords/cables are taped down and away from high traffic areas.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
14	Step ladder or step stool is available and in good condition.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
15	Collected materials & props are stored in containers and away from daily activity.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
16	Approved hazardous waste containers are clearly labelled and placed.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Hygiene & Clothing				
17	Signage indicating no food, drink or gum in the Visual Arts room is clearly posted.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
18	Soap & paper towel dispensers are full and in working order.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
19	Smocks or aprons are available for extremely messy work or students who request them.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Ventilation				
20	Windows, where available, can be opened to aid air circulation and are fully intact.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
21	Window coverings are fully functional and cleaned annually.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
22	Additional ventilation devices (e.g., fume hood, HEPA filter) are fully functional.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Personal Protective Equipment & First Aid				
23	Proper PPE is available (e.g., safety glasses/goggles, Nitrile gloves, dust masks, thermal gloves, etc.) and in regular use.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
24	First aid kit is easily accessible and fully stocked.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
25	Fire extinguisher is accessible and regularly inspected by a certified contractor.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
26	Eye wash station is indicated with signage and routinely inspected for maintenance.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A

Equipment & Tool Maintenance and Repair				
27	Operating instructions for all large fixed equipment are easily available for all involved.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
28	Ceramics kiln is separated from instructional space and in good repair.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
29	Paper cutter has a blade guard and arm is locked down when not in use.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
30	Paper cutter is placed on a counter or table that allows sufficient space for its use.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
31	Etching press (table top or standing) has upper cylinder raised above the press bed. If possible, the drive wheel or spokes have been removed.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
32	Etching/printmaking press is covered when not in use.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
33	Large drying racks are in good condition and only used for drying paper works.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
34	Cutting tools (e.g., scissors, utility knives, linocut tools) are safely stored when not in use. Quantities of all cutting tools are recorded and checked before classes end.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
35	Dull or damaged cutting tools are sharpened or discarded.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
36	Power tools are securely stored when not in use. Bits & blades are removed.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Chemical Storage & Waste Disposal				
37	Solvents, corrosives or flammable liquids are safely stored in a lockable, metal cupboard. (A fire-resistant Flammables Safety Cabinet is the optimal storage choice.)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
38	Adhesives, other than mucilage and PVA (white) school glue, are safely stored in a lockable cupboard.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
39	A separate, flammable waste container, with lid, is available for oily or solvent-soaked papers, paper towels or rags.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
40	Hazardous waste is regularly disposed of and picked-up. (DSB/school coordinated)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
41	Broken glass is wrapped in newspaper or cardboard, labelled, and separately discarded from classroom waste. (A custodian is informed.)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Documentation and Records				
42	MSDS are available for all potentially hazardous materials used in the classroom. (These may be on file with DSB/school purchasing records.)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
43	MSDS are on file and available for any NEW materials used in the classroom. New materials have received admin./DSB approval, prior to their use.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
44	An inventory of all materials used in the Visual Arts/Media Arts program is maintained and current. (This could include copies of purchase orders and board requisitions.)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
45	Copies are maintained of any condition reports, maintenance requests, student safety contracts, and student information concerning allergies, ailments or physical limitations.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
46	Relevant health & safety information is incorporated into task instructions and handouts.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A