

中學視覺藝術科安全指引

Guidelines on Safety for Visual Arts in Secondary Schools

香港特別行政區教育局

Education Bureau, The Government of the Hong Kong Special Administrative Region

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1. Preface

This booklet is a revision of the 2002 edition. It sets out some of the safety precautions related to Visual Arts learning and teaching activities at secondary schools, with an aim to enhance teachers' awareness of safety during Visual Arts lessons. We must emphasize that all learning activities on Visual Arts must be carefully planned and students should be regularly reminded of the proper and safe use of various equipment, tools and materials so as to avoid accidents.

The safety guidelines provided in this booklet are for general reference only. Teachers should handle safety matters appropriately according to their own school's actual situation, taking students' safety into prime consideration. Should schools have any comments on the contents of this booklet and the guidelines contained therein, please contact the Arts Education Section of the Education Bureau.

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2. Introduction

As the Visual Arts curriculum diversifies and more tools and materials are used in teaching, the process behind creative activities and the use of tools and materials are becoming more complex. Visual Arts teachers must therefore well-prepared for classes, cautious in choosing materials and tools that are safe for use, and vigilant in supervising students' activities so as to prevent the occurrence of accidents.

To facilitate effective learning and ensure the safety of students, schools should provide a safe environment with suitable fittings for students to carry out visual arts learning activities. Safety precautions must be taken in all teaching activities. Teachers must have knowledge of the potential hazards beforehand so as to prevent them before they occur. Besides, teachers should help students to develop a sense of responsibility and alertness.

For the operational practice of Visual Arts, the subject panel head of the school should discuss and set the safety rules together with teachers of the subject, and distribute to them reference materials concerning the safety precautions for Visual Arts learning activities and also the safety guidelines on the use of materials, tools and equipment, so as to enhance teachers' awareness of safety in the learning activities for the subject and to increase their basic understanding of the tools and equipment to be used. The subject panel head should also inform teachers and students to report to the school immediately any safety problems found concerning the use of materials, tools or the equipment or during the learning activities. In addition, the subject panel head should set up a monitoring team on the implementation of safety measures for this subject, so as to carry out safety assessments on the materials, tools and learning activities and to take follow-up actions. Furthermore, the monitoring team should be in close contacts with the crisis management team or the safety team of the school in line with school-based safety measures.

3. Safe Practices in the Visual Arts Room

The following points are some general concerns about safety in the Visual Arts room. These may serve as a reference and guideline for setting the rules for the Visual Arts room.

3.1 Fittings in the Visual Arts Room

The Visual Arts room is specially designed for Visual Arts learning therefore teachers should fully utilize it when conducting Visual Arts lessons. If furniture and equipment of this room need to be replaced, schools may browse the latest *Furniture and Equipment List for New Schools* from *School Premises Related Information at School Administration and Management* in the main menu of the EDB webpage <https://www.edb.gov.hk>.

3.2 Layout of the Visual Arts Room

The layout of the Visual Arts room should allow teachers to move around freely and attend to each student; there should also be adequate space for students' activities and for accommodating working tables and necessary equipment and materials. Working tables, workbenches and the storage room must be kept clean and tidy. The passageways in the Visual Arts room must not be used as storage or working areas. The floor should always be kept clean and dry to avoid accidents.

When the Visual Arts room is air-conditioned, teachers should pay special attention to the following points concerning ventilation when holding Visual Arts learning activities inside the room:

- (a) When materials or paints which produce fine particles are used, the air-conditioning system should be switched off and the windows of the room should be opened to maintain good ventilation.
- (b) When materials or paints that have smell or produce harmful gases are used, besides opening the windows, fans should also be switched on to keep fresh air flowing and to maintain good ventilation, so that students' health can be ensured.

3.3 Management of the Visual Arts Room

A timetable showing the lesson time of individual classes and the fire escape route should be posted in the Visual Arts room, and information or slogans about the usage and safety of the materials, tools and equipment used for the subject should be displayed so as to strengthen students' awareness of safety. Also, rules and guidelines on tidying up the room, safety precautions, storage of and access to materials and tools, as well as allocation of display boards and showcases should be stipulated in order that they can be observed by both teachers and students.

The storage room and the storage cabinets inside the Visual Arts room store teaching resources, it is necessary for teachers to keep an inventory clearly recording the materials and tools in store, and their categories and consumption, so as to give a clear picture of the material consumption and the utilization pattern of tools, equipment and teaching aids so that reordering can be done in a timely manner. Materials and tools should be stored systematically by labelled categories. Furniture, equipment and tools should be inspected regularly and repaired as soon as damages occur. Damaged tools which are beyond repair should be put aside and be written off. Only through effective management can the waste level be kept to a minimum and accidents avoided.

3.4 Setting Rules for Students

To prevent accidents in the Visual Arts room, teachers should work out a set of rules to be strictly observed by students. These rules should be explained in detail to students at the beginning of each school year, and may include the following main points:

- (a) Students should not enter the storage room inside the Visual Arts room without the teacher's permission.
- (b) Students should not run about or play in the Visual Arts room.
- (c) Students should not put any materials into their mouths.
- (d) Students should not tamper with electrical outlets or main switches, any electrical tools and chemicals without the teacher's instructions.
- (e) Students should not use any equipment, tools and materials in the Visual Arts room unless the teacher has given the relevant demonstration and instruction. The use of sharp tools is permitted only under the teacher's supervision.
- (f) Students should put tools or materials back to their places after use.
- (g) Students should report any illness or injury to their teacher immediately without delay.
- (h) Students should get familiarised with the fire escape route; when there is a fire in the Visual Arts room, students should follow the instructions and evacuate to the safe place.

4. Safe Conduct of Visual Arts Learning Activities

4.1 General Safety Rules

Before instructing students in Visual Arts learning activities, teachers should have a thorough planning of the activities, not only they should have an understanding of students' abilities and experiences, but they should also be aware of the potential hazards of the materials, tools and equipment being used and of the appropriate safety precautions to be taken. When conducting the learning activities, teachers should stay alert to ensure the safety of the students and of themselves as much as possible. The following are the general safety rules to be observed when conducting Visual Arts learning activities:

- (a) Choose and use materials and paints which are non-toxic. Even paints labelled as "non-toxic" should also be dealt with care.
- (b) Before using the materials and paints, read the instructions given by the manufacturers carefully and follow these instructions during use.
- (c) When working with materials or paints which produce gases and dust, suitable masks, gloves and protective clothing should be worn.

(Respiratory protective equipment includes masks, particulate filter respirators, gas masks and so on. Masks can generally filter out dust; particulate filter respirators are fitted with filters for removing contaminants, and different filters are available for different types of particulate matters; however, schools should not hold Visual Arts learning activities in which students' safety can only be ensured by wearing particulate filter respirators.)

- (d) Open the windows when materials with a smell are used. Only a suitable quantity of materials should be used even under good ventilation.
- (e) Chemicals such as turpentine, acids, etc. should be used only under the teacher's supervision.
- (f) Wash hands immediately after handling paints and materials.
- (g) Containers for storage of chemical should be clearly labelled, and warning symbols should be attached to dangerous materials.
- (h) Dust and fine particles produced during Visual Arts making activities should be removed immediately with a wet cloth.
- (i) Do not put any materials into the mouth.
- (j) Avoid using materials that can mould easily, e.g. food.

- (k) Avoid contact with irritant plants when collecting specimens of flowers and leaves. (Please refer to Appendix 1 for samples of common irritant plants and flowers.)
- (l) Do not heat or burn PVC bags and polystyrene or cut them with a hot-wire because these materials may produce poisonous gas when heated.
- (m) Do not use materials that contain asbestos because asbestos dust is harmful to the body.
- (n) Teachers should explain and demonstrate to each class the proper use of tools and equipment; and time should be arranged for students to familiarise themselves with the operation of these tools and equipment.
- (o) Students should use sharp tools only under the teacher's supervision.
- (p) All tools and equipment should be maintained regularly to ensure that they are in good condition and are functioning properly.
- (q) It must be ensured that there are adequate space for activities and good ventilation inside the Visual Arts room.
- (r) When the electric kiln is in operation, there must be some prominent warning lights indicating that the kiln is in use. Teachers should also put up signs warning students not to come near the kiln door during the firing process. The kiln door should be fitted with a lock to prevent students from opening it during the firing process. Kiln loading, unloading and firing must be operated by the teacher or the technician.
- (s) Teachers should have knowledge of first aid so as to deal with any accidents likely to occur.
- (t) Schools should seek the advice of parents by means of questionnaires at the beginning of each year to find out whether students are allergic to any material. Prompt adjustments can thus be made to the learning and teaching arrangements to prevent students from direct contact with the materials concerned.

4.2 Safe Conduct of Visual Arts Learning Activities Inside and Outside School

Visual Arts learning activities may be conducted out of the Visual Arts room at different periods, different locations and in different forms to enhance the effectiveness of learning and teaching.

In general, activities can be conducted either inside or outside the school. Activities held in school may include extra-curricular interest groups, exhibitions of student works, campus sketching, special talks and demonstrations given by artists and drawing competitions, etc. Activities

organised out of school may include visits to art galleries or museums, visiting artists, photographing or sketching at country parks, farms and other outdoor places, etc.

Generally speaking, teachers may prepare teaching materials for extra-curricular activities which are more difficult to handle and which require diversified use of materials and tools. In this case, appropriate safety precautions must be taken to ensure the smooth running of such extra-curricular activities. For activities held outside school, teachers must plan thoroughly to cover all the necessary details of such arrangements. Before organising these activities, teachers should pay particular attention to safety matters by referring to the “Guidelines on Outdoor Activities” and the “Guidelines on Extra-curricular Activities in Schools” issued by the Education Bureau.

5. Knowledge of, Handling of and Safety Precautions Against Toxic and Harmful Materials

Some of the art materials sold locally can be poisonous and hazardous to health. Therefore care should be taken to prevent these materials from infecting the body. Students should be taught how to identify the toxic materials and to avoid using them. Even materials labelled as “non-toxic” should always be handled with care. Students should be told to wash their hands thoroughly after getting into contact with these materials. (Please refer to Appendix 2 for the information on *Toys and children’s products safety ordinance* and examples of common safety labels.)

5.1 Toxic and Harmful Materials

- (a) All paints, dyes, printing ink, enamels and glazes which contain toxic heavy metals (such as lead, cadmium, barium, lithium, chromium, antimony, selenium and mercury).
- (b) Paints which contain carcinogenic substances, e.g. Scheele’s Green, Barium Red, Strontium Yellow, etc.
- (c) Substances which release harmful gases, e.g. oil-based markers, oil-based printing ink, spray paint, strong all-purpose adhesive, photographic developing agent, thinner and turpentine, etc. Besides, some materials may produce harmful gases when used, e.g. the fumes produced during the hardening of resins and the gas produced during the etching of metals with acids, etc.

- (d) Some chemicals used in screen printing, e.g. ammonium dichromate, which is harmful to the skin.
- (e) Materials that contain asbestos.
- (f) Corrosive liquids such as strong acid (e.g. nitric acid, chromic acid) or strong base (e.g. sodium hydroxide aqueous solution, i.e. caustic soda), etc.

5.2 Means of Infection

Toxic substances can enter our body through inhalation, ingestion and skin contact.

(a) By inhalation:

Dyes, dry pastel, spray paints, etc. in the form of dust, powder, fumes, gases and aerosols, may be hazardous to health when inhaled into the lungs. Inhalation of dry clay, which contains silica, is harmful to the lungs and inhalation of asbestos will cause cancer.

(b) By ingestion:

Heavy metals such as lead and cadmium contained in paint pigments and glazes are toxic. Eating and drinking contaminated food and drinks or any contact with the mouth can be hazardous to health.

(c) By skin contact:

Toxic substances such as organic solvents may pass through the skin causing damages to the body system. Heavy metals contained in paints can also enter the body through wounds on the skin.

5.3 Handling of and Safety Precautions Against Toxic Gases, Fumes and Dust

- (a) Containers holding solvents, adhesives or photographic developer, etc. should always be tightly closed.
- (b) When materials such as turpentine and spray paints which produce harmful gases and fumes are used, protective clothing such as masks, gloves and apron should be worn and only a suitable quantity of the material should be used even under good ventilation.
- (c) Materials that smell, though do not contain toxic substances, should be used under good ventilation, e.g. soap used in carving and the fabric printing pastes used in screen printing, etc.
- (d) During some Visual Arts activities, e.g. cutting polystyrene with knives, plaster carving or polishing, using powder paints, dyes, glazes, clay and plaster, etc., dust and fine particles may be produced. Therefore, when these activities are in process, electric fans should be switched off to prevent flying

dust and fine particles; and these should be removed with wet cloth as soon as possible.

- (e) Dust produced during polishing of resins may be inhaled into the body or get in touch with the eyes, therefore, when polishing resins, students should wear safety goggles and masks.

5.4 Safe Use of Chemicals

Students should not use toxic chemicals by making use of safe substitutes. Some safety precautions for using chemicals are listed below:

- (a) Do not use chemicals which are toxic, harmful to skin and contain unknown components.
- (b) Observe instructions attached to the chemicals.
- (c) Wear gloves when handling chemicals. In case of contact with the chemicals, students should wash their hands immediately.
- (d) Wipe off resins carelessly spilled on tables and floor with cloth, and further remove them with acetone. In case some unknown or dangerous materials are spilled, students should be evacuated from the spot at once. At the same time, the Fire Services Department should be promptly notified. The Education Bureau should also be notified of the incident as soon as possible.

5.5 Safe Use of Acids

- (a) Acids should be stored and used in diluted form.
- (b) Acids must be diluted by the teacher or laboratory technician and not by students themselves.
- (c) Water should never be added into acids. For dilution, acid should be poured slowly into the water.
- (d) Students should not put naked hands into the acid bath.
- (e) Acids should be stored in glass containers with a glass stopper and be clearly labelled.
- (f) During the process of etching metal plates, proper protective clothing such as gloves and aprons, etc. should be worn and the process should always be supervised by the teacher.
- (g) Under certain conditions, acids can produce harmful gas. The Visual Arts room must be well ventilated when acids are being used. No fire should be allowed near where the acid is used.
- (h) Adequate quantity of neutralizer for the acids should be stored. If not small amount of acids are to be used, there should be a water spraying facility nearby for use when necessary.

- (i) Acids should always be diluted with plenty of water before disposal, or before pouring into the sink.
- (j) Acids carelessly spilled on tables and floor should be washed off immediately with plenty of water.

5.6 Safe Use of Paints

As students often come into contact with different kinds of paints during Visual Arts making activities, teachers should instruct on how to choose safe and non-toxic paints during class. (Please refer to Appendix 2 for the information on *Toys and children's products safety ordinance* and examples of common safety labels.)

Teachers should be aware of the potential hazards of the paints used and the safety precautions to be taken. All these warrant the special attention of students. Some safety precautions on the use of paints are listed below:

- (a) Use paints which have safety labels and read the instructions attached to the paints concerning the safety labels, compositions and usage carefully before use.
- (b) If there is doubt about the composition or safe use of paints, teachers should seek further details from the suppliers before use. Do not take risks if the information is not available.
- (c) Some pigments used in traditional Chinese painting, e.g. gamboge, azurite and mineral green, etc. are toxic and should not be used.
- (d) Students should be strongly advised not to put paints into their mouths.
- (e) If there are skin allergy or wounds on the hands, put on a pair of gloves to prevent direct contact with the paints.
- (f) Wash one's hands immediately after handling paints.
- (g) When mixing paint with powder colour, switch off the fan and do not work in draughty conditions. Use masks and plastic gloves to avoid inhalation of fine particles dispersed in the air and the particles direct contact with the skin.
- (h) Open the windows for good ventilation when paints with a smell e.g. oil-based ink are used.
- (i) Spray paints and fixatives should not be used in the Visual Arts room, storage room or in the corridors. If spray paints are to be used, students should be supervised by the teacher, and they should work in the open air, wearing goggles, masks and gloves.
- (j) Containers that had contained dyes should not be used as cooking utensils.
- (k) For any unused paints, the instructions attached to the paints should be kept together for future reference.

5.7 Storage of Materials

- (a) Containers for storage of chemicals should be clearly labelled. Warning symbols should be attached to dangerous materials in particular. (Please refer to Appendix 3 for samples of common hazard warning symbols.)
- (b) Dangerous materials should be locked and categorized in a cabinet so as to be secured and kept away from heat. These cabinets should be checked regularly.
- (c) Materials, especially those which are dangerous, should not be put on a high rack so as to avoid accidents caused by failing containers or spillage when the containers are taken down.

6. Safe Use and Maintenance of Tools and Equipment

Tools commonly used in Visual Arts lessons may include: scissors, paper cutters, woodblock cutters, woodwork tools, ceramic tools and printmaking tools. Sometimes, supplementary tools and materials such as iron wires, safety pins, toothpicks and small knives may also be used.

Some of the tools used for Visual Arts are pointed and sharp. Teachers should, therefore, remind students of the proper way to handle such tools before allowing them to use the tools on their own. Teachers should constantly remind students that they should not play with or walk about with sharp and pointed tools. When using these tools, students should keep their peers at a safe distance. Methods of safe operation and maintenance of different tools and equipment are listed as follows:

6.1 Safe Use of Tools and Equipment

6.1.1 Common Tools

- (a) Replace blunt, rusty and malfunctioned scissors and paper cutters regularly.
- (b) Newspaper or a piece of cutting mat should be put between the table and the paper to protect the top of the table before cutting the paper.
- (c) Iron rulers or rulers with metal edges should be used while cutting straight lines. The use of plastic rulers should be avoided to prevent the cutter from slipping onto the plastic ruler, thus cutting the hands.
- (d) Avoid cutting too many sheets of paper at a time. Thick cardboard paper should be cut a number of times.

- (e) Paper cutters should be retracted, locked and placed in the tool cupboard after use.
- (f) Used blades should be wrapped with plastic tapes before disposal.
- (g) Advise students not to put their fingers at the stapling position of the stapler.
- (h) Staple guns should only be used under the guidance of the teacher.

6.1.2 Carving Tools

- (a) Check if the carving tools are in good condition and are functioning properly before use.
- (b) Avoid using tools with rust, blunt blades or loosened handles.
- (c) In applying woodblock cutters on materials like plastic boards, plaster, paper clay, clay, soap, etc., keep the cutting edge opposite to the body, the hand not holding the cutter should be kept outside the way where the cutting action runs. Undue cutting pressure should be avoided because it causes the blade to swerve, bench hook for woodwork and carving is recommended to be used to avoid swerving of the tool which may cause accidents.
- (d) After applying on moist materials, the carving tools should be cleaned, lubricated and wrapped in oil paper to keep off moisture which results in rust and blunt blades.

6.1.3 Woodwork Tools

Teachers must instruct students on the proper use of sharp tools that can easily cause injuries, especially tools like chisels, planes and saws. In handling such tools, the following points should be observed:

- (a) When using a chisel, both hands must be placed behind the cutting edge.
- (b) Never use the fingers or hands to test the sharpness or depth of the cutting edge.
- (c) No undue force should be exerted when using the saw, otherwise the blade may be bent, broken or even jerked off, thus causing injury.

6.1.4 Printmaking Tools

Before lessons, teachers should check all the printmaking tools, including woodblock cutters, plastic rollers, squeegees, baren and etching press. Students should use tools which are in good conditions.

Moreover, teachers should demonstrate that in the colouring process, the plastic roller should only be pressed lightly so that it is allowed to roll smoothly to and fro. In printmaking, plastic boards, glass sheets or ceramic tiles can usually be used as a mixing plate. Students should be reminded to handle the roller with care and avoid exerting undue pressure on the plate when mixing paints. After use, the printmaking tools should be cleaned thoroughly so as to be maintained tidily and kept in good condition.

6.1.5 Etching Press

The etching press is a very heavy machine which cannot be moved around easily. Therefore, it should be placed, on or even fixed to, a firm working bench where sufficient space in the vicinity is left for students' operation. Teachers should check whether the etching press is in good condition. They should also demonstrate its use and supervise the students who use the equipment. Safety instructions should be posted prominently on the notice board. The etching press should be cleaned and lubricated regularly to maintain the smooth operation of its components.

6.2 Maintenance of Tools and Equipment

All tools and equipment should be maintained regularly to ensure that they are in good condition and are functioning properly. Pointed tools should be placed in a proper storage cabinet or toolbox. Metal tools should be stored in a dry place and lubricated or wrapped in oil paper after use to prevent rusting. Stop using tools which are found chipped, rusty or blunt, and equipment which is not functioning properly. Repairs must be promptly carried out.

7. Safe Use of Electrical Appliances

- (a) Check frequently the wiring, proper earthing and the correct installation and use of all electrical equipment used in the Visual Arts room, kiln room and storage room.
- (b) Sockets should not be overloaded, otherwise it will cause danger.
- (c) All electrical appliances must be fitted with three pronged earthed plugs. Electrical appliances must be disconnected from the power source immediately after use.

- (d) Every precaution to avoid burns should be taken when using hot plates which have no warning signs indicating that they are “ON”, and which can still be very hot even when disconnected from power source.
- (e) Maintenance work on any electrical appliances in the Visual Arts room, kiln room and storage room should only be carried out by qualified technicians. Teachers should not try to alter or repair any electrical appliances by themselves.

8. Fittings and Safety Guidelines on Ceramic Facilities

8.1 Fittings for Ceramic Facilities

- (a) The electric kiln should be installed in a place with good ventilation. A ventilation system with extractor fan as well as a door fitted with a louver opening should be installed to ensure adequate air exchange and fresh air inside the room. If the electric kiln can only be installed in the Visual Arts room, it must not obstruct the passageway inside the room. To avoid accidents, a fence should also be erected near the kiln to keep the students away when the kiln is in operation.
- (b) Keep around 0.5m from each side of the electric kiln clear and nothing should be placed on top of it. Do not store volatile liquids and compressed gases such as thinner, turpentine and spray paints, etc. in the room where the kiln is installed.
- (c) The main power switch for the electric kiln should be installed at a considerable distance from the kiln, so that even when accidents occur, the power supply can be cut off immediately without passing through or coming near the kiln.
- (d) There should be prominent lights to indicate that the electric kiln is in operation.
- (e) The electric kiln door should be fitted with a lock to prevent students from opening it during the firing process.
- (f) The electric kiln should be checked and maintained regularly. Any damages should be repaired by specialised technicians.

8.2 Safe Use of Ceramic Materials

Most materials used in ceramics can be harmful if taken into the body by mouth or inhalation or from contact with the eyes. Danger can be reduced to a minimum if the following precautions are observed:

- (a) Before using any ceramic materials, read carefully the guidelines provided by the manufacturer and observe the instructions attached to these materials.
- (b) Ceramics making should not be carried out in draughty or dusty conditions. Working areas have to be washed regularly. Spillage of material like glazes, oxides, slip and clay must be cleaned up immediately.
- (c) Packages should be opened with care and should be carefully disposed of when empty to avoid dispersing dust into the air.
- (d) All glazes, oxides and other materials used should be stored in closed containers and should be clearly labelled.
- (e) When handling ceramic materials, protective clothing e.g. apron, masks, etc. should be worn and the wounds on the hand should be well protected. Before eating and drinking, the protective clothing should be taken off, and hands should be thoroughly washed.
- (f) Do not use raw materials and glazes which contain highly toxic or carcinogenic substances (e.g. arsenic, cadmium, lead, chromium, selenium, nickel and beryllium).
- (g) Glazes may also contain some harmful heavy metals such as zinc, cobalt, copper and vanadium. Care has to be taken over their use.
- (h) All glazes and prepared clay contain crystalline silica which can be easily inhaled into the body in dry powder form or in a fine mist during spraying. When using these materials, the fan should be switched off to avoid fine particles dispersing in the air, but good ventilation has to be maintained. Protective clothing such as goggles and masks should also be worn.
- (i) Spray application of glazes should be carried out only in specially designed filtered extraction booths and these should be cleaned up immediately after application.
- (j) Some materials (such as polystyrene) produce poisonous gas when burnt, therefore care should be taken to avoid mixing materials other than those commonly used for ceramics into clay, when the properties of these materials have not been clearly identified.
- (k) Special care has to be taken when choosing glazes for pottery used as tableware, because some glazes may release lead, cadmium or other toxic matters when they come into contact with acidic materials. Avoid mixing glazes of different compositions as this would reduce their resistance to acids. The glazing temperature should be complied with the temperature indicated in the manufacturer's instructions. Furthermore, finished products from the kiln must be checked carefully, only those with smooth and lustrous glazed surfaces and with no cracks can be used as tableware.

8.3 Safety Precautions for Kiln Loading, Unloading and Firing

- (a) Kiln loading, unloading and firing must be operated by the teacher or the technician.
- (b) When the electric kiln is in operation, teachers should put up signs warning students not to come near the kiln door during the firing process.
- (c) In the firing process, carbon monoxide, sulfur dioxide and nitrogen oxides are often produced. Thus, when the electric kiln is in operation, the ventilating system in the room must be switched on to ensure good ventilation.
- (d) Freshly produced ceramic ware should be cooled to room temperature before taken out of the kiln. As these products may have sharp cutting edges resulting from peeled-off glazes, they must be examined carefully before being taken out of the kiln to prevent injury.

9. Fire Prevention

Naked flame must not be permitted in the Visual Arts room. However, fire accidents may still occur due to certain kinds of personal negligence. Therefore the following fire prevention measures must be observed:

9.1 Fire-fighting Equipment

- (a) Suitable fire-fighting equipment must be placed in the Visual Arts room in a prominent location which is easily accessible for use.
- (b) Such equipment must be maintained and checked regularly.
- (c) Teachers should learn how to use such equipment.

9.2 Handling of Flammable Materials

9.2.1 Methods of Storing Flammable and Volatile Liquids

- (a) Schools should not keep excessive flammable materials. If leftovers have to be stored, then the quantity in store should not exceed the level permitted by the Law. (For enquiries about the permitted storage quantity, please contact the Fire Services Department on 2723 8787). Also common materials which can be easily set alight, e.g. polystyrene, paper, etc. should not be kept in excess.
- (b) Acrylic, polystyrene and other thermoplastics should be stored away from heat.

- (c) Flammable liquids should be kept in suitable containers with lids always closed and clearly labelled. Containers should be stored in a metal box in the storage room or at a place inaccessible to students.
- (d) Flammable and volatile liquids should not be exposed to intense sunlight, they should be kept in a cool, dry place which is far away from naked flames and with a temperature below 40°C.
- (e) As advised by the Fire Services Department, schools are reminded that ethanol (ethyl alcohol) should be stored separate from kerosene and thinner.

9.2.2 Use of Compressed Gases and Activities Involving Wax Melting

- (a) Compressors should not be used for spray painting. When spray painting is conducted during Visual Arts classes, it is desirable to use water-based paints and tinned compressed gases. During the production process, students should be exposed to open air under the supervision of their teacher.
- (b) When wax is being melted, it should be heated indirectly over a water bath. Mixed activities involving heat, paint spraying, wax melting, etc. should not be conducted at the same time.

9.3 Contingent Measures for Outbreak of Fire in the Visual Arts Room

- (a) Plans showing the fire escape route should be posted in the Visual Arts room and students and teachers must be familiarised themselves with the escape route. Never lock up the exits during classes in the Visual Arts room. Keep all passages clear and accessible.
- (b) When a fire breaks out in the Visual Arts room, students should be evacuated from the room immediately and if the situation becomes serious, all students should be evacuated from the school building. It is essential that any such evacuation should be carried out in an orderly, controlled manner, and that efforts should be made to avoid panic amongst students. At the same time, the Fire Services Department should be promptly notified. The Education Bureau should also be notified of the incident as soon as possible.

10. First Aid Cabinet

Each Visual Arts room should be equipped with a first aid cabinet which contains suitable contingency items. The cabinet should be put in a prominent place which is easily accessible. The items contained therein must be checked and replaced regularly to ensure that they are kept in sufficient quantity and are in good condition. Teachers should learn how to use the items maintained in the first aid cabinet.

A recommended list of first aid items for the Visual Arts room is as follows:

- Sterilised normal saline or distilled water (for cleaning wounds)
- Alcohol (for cleaning first aid equipment)
- Disposable plastic gloves (to avoid direct contact with wounds or blood)
- Surgical masks
- Sterile dressings/ dressing packs/ gauze (individually packed)
- Elastic tensor bandages (of different widths)
- Triangular bandages
- Cotton sticks and cotton wool
- Adhesive plaster (of different sizes)
- Scissors
- Forceps
- Spray bottles or eye cups for washing eyes
- Emergency helpline information (such as contact phone number of the nearby ambulance station)

Some Common Plants Known to be Poisonous

Students should not be allowed to contact with the following irritant plants and flowers:

Allamanda cathartica (Allamanda)

Alocasia odora (Alocasia)

Colocasia esculenta (Taro)

Euphorbia milii (Crown of Thorns)

Euphorbia pulcherrima (Poinsettia)

Euphorbia tirucalli (Milk Rush)

Exoecaria agallocha (Milk Mangrove)

Nerium indicum (Oleander)

Rhus chinensis (Sumac)

Rhus hypoleuca (Sumac, Lacquer Tree)

Rhus succedanea (Wax Tree)

Thevetia peruviana (Thevetia)




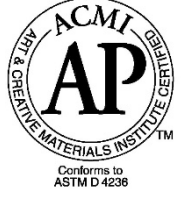
Vinca rosea (Periwinkle)



Safety Ordinance and Labels

Toys and children’s products manufactured, imported or supplied for Hong Kong consumption must comply with the safety standards specified in the *Toys and children’s products safety ordinance* and the requirements specified in the Regulation. For details, please visit the website of the Hong Kong Customs and Excise Department.

Besides, specific safety marks are affixed to the packing of some of the art materials sold in Hong Kong, which with shows the conformity to a certain safety standard of a specific country/region. Some common examples are listed below:

Examples of Common Safety Labels

Origin	Safety Label	Remarks
United States of America	“Conforms to ASTM D-4236”	Conform to the standard practice of American Society for Testing and Materials (ASTM)
	a. 	CP (Certified Product) Seal of the Art and Creative Materials Institute, Inc., USA
	b. 	AP (Approved Product) Seal of the Art and Creative Materials Institute, Inc., USA
	c. 	HL (Health Label) with “No Health Labelling Required” issued by the Art and Creative Materials Institute, Inc., USA
d. 	New AP (Approved Product) Seal of the Art and Creative Materials Institute, Inc., USA to replace CP, AP and HL seals gradually	

Origin	Safety Label	Remarks
European Union		Conform to the safety standard for products marketed in European Union
Japan		Conform to the safety standard for toys marketed in Japan

A product marked with labels in the USA such as ‘Health Label with “No Health Labelling Required”’, ‘Certified Product’ or ‘Approved Product’ merely indicates that the product does not carry any toxic substances and is safe for use as seen from the modern scientific point of view. As subsequent scientific research may prove to the contrary, all products are subject to regular review by the Art and Creative Materials Institute so that safety symbols can be replaced when necessary.

If a product is marked with ‘Health Label’ and warning signs or the new CL (Cautionary Label), (see figure 1), it means that the product carries chronic toxic substances. Therefore, due care must be taken when using the product and the usage instructions indicated on the symbols must be fully complied with. These products are not suitable for children.

Moreover, according to the regulations given by the European Union, the composition of some art materials like turpentine and lead are considered harmful to human beings. In such cases, the symbol ‘harmful’ must be shown on the packaging of the product. Products marked as ‘harmful’ (see figure 2) are absolutely not suitable for children.



(Figure 1)

The ‘Cautionary Label’



(Figure 2)

The ‘Harmful’ symbol

Hazard Warning Symbols

Hazard warning symbols should be displayed on containers of hazardous chemicals to indicate its hazardous nature. Some examples of common hazard warning symbols are as follows:



Flammable



Corrosive



Toxic



Harmful



Irritant



Oxidizing

Source of Reference

Safety Ordinance

1. *2012 Toys and children's products safety (amendment) ordinance*. Hong Kong Special Administrative Region.
2. *Toys and children's products safety ordinance (amendment of schedules 1 and 2) notice 2013*. Hong Kong Special Administrative Region.

Book/Magazine/Pamphlet

1. 何孟恆(1988)《香港有毒植物》。香港：市政局。
2. 《平安是福》。香港：方樹福堂基金贊助編印。
3. 《選擇》第 188、192、211、217、218、222、252、288 期。香港：消費者委員會。
4. Education Bureau (2012) *Handbook on safety in science laboratories*. Hong Kong Special Administrative Region.
5. Education Bureau *Guidelines on outdoor activities*. Hong Kong Special Administrative Region.
6. Education Bureau *Guidelines on extra-curricular activities*. Hong Kong Special Administrative Region.
7. Education Bureau (previously titled Education Department) (1999) *Safety precautions in integrated science experiments*. Hong Kong Special Administrative Region.
8. Great Britain. Department of Education (1995) *A guide to safe practice in art & design*. London: HMSO.
9. Challis, T. & Roberts, G. (1990) *Artists handbook 2 health & safety: making art & avoiding dangers*. Sunderland: AN Publications, Inc.
10. Oltman, Debra L. (1990) *Pennsylvania classroom guide to safety in the visual arts*. Pennsylvania Department of Education.
11. Qualley, C.A. (1986) *Safety in the art room*. Massachusetts: Davis Publications, Inc.

Video Tape

(1991) *Health concerns for artist*. American School Publishers, Macmillan/McGraw-Hill School Publishing Company.

Website

1. *School Administration Guide* of the Education Bureau, Hong Kong Special Administrative Region
<https://www.edb.gov.hk/en/sch-admin/regulations/sch-admin-guide/index.html>
2. *School Safety & Insurance* of the Education Bureau, Hong Kong Administrative Special Administrative Region
<https://www.edb.gov.hk/en/sch-admin/admin/about-sch/sch-safety.html>
3. Customs and Excise Department, Hong Kong Special Administrative Region
<https://www.customs.gov.hk>
4. Labour Department, Hong Kong Special Administrative Region
<https://www.labour.gov.hk>
5. Occupational Safety and Health Council, Hong Kong Special Administrative Region
<https://www.oshc.org.hk>
6. Consumer Council, Hong Kong Special Administrative Region
<https://www.consumer.org.hk>
7. Art Safety Training Guide of the Princeton University
<https://ehs.princeton.edu/health-safety-the-campus-community/art-theater-safety/art-safety>
8. The Art and Creative Materials Institute, Inc.
<https://www.acmiart.org/>