

FAIRFAX COUNTY PUBLIC SCHOOLS

TECHNICAL THEATRE SAFETY

**A Guide for Students, Teachers,
Staff, and Administrators**

Department of Facilities and Transportation Services
Office of Safety and Security

Instructional Services Department
Fine Arts Office, Theatre Arts

2019



FCPS Theatre Arts provides a safe, open, and inclusive environment for students to explore their world, both personally and globally. Through creativity, collaboration, communication, and critical thinking, students will develop as goal directed and resilient individuals, ethical citizens, and ultimately- theatre artists.

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QUICK REFERENCE GUIDE

Emergency Services: 911

American Association of Poison Control Centers (AAPCC): 1-800-222-1222

Fairfax County Police Public Safety Non-Emergency: 703-691-2131

Office of Safety and Security: 571-423-2000

- Genie Operator Certification and machine repair.
- Fog machine tests, theatre safety, set design review for safety and construction standards, resource for applicable codes and standards.
- 24-Hour dispatch to report facility problems such as security alarm errors, lockouts, trespassers, and utility emergencies.

Department of Information Technology, Field Services: 703-503-6555

- Field Services is responsible for A/V and stage lighting equipment maintenance and repair in all FCPS buildings.

Department of Information Technology, Field Information Systems: 703-503-6500

- The FIS Public Address (PA) Shop is responsible for the maintenance and repair of all installed sound and public address systems in FCPS buildings.

Department of Information Technology, Event and Teaching Material Support Services:

703-503-7629

- ETMSS is responsible for providing personnel and equipment to support major FCPS events, conferences and meetings.

The Office of Procurement Services: 571-423-3550

- The Office of Procurement Services reviews contracts and supports good stewardship and best practices in the purchase of goods and services.

HOW TO USE THIS DOCUMENT

The following document is designed for use by FCPS teachers, administrators, students, and staff. All content is aligned with FCPS Regulation and by federal, state, and local law.

This document is intended to be used as a constant reference and applied in conjunction with safety assessments and certifications. The General Safety Assessment is intended as a prerequisite to conduct technical work in FCPS Theatre spaces. This assessment includes content from this page and the following chapters: Facilities Management, Personal Protective Equipment, Overhead Safety, and Prop Weapons. The content knowledge gained from these chapters is essential and serves as the foundation for the rest of the document.

Each discipline-based section is structured in order of operation. The primary subtitles used are:

- **Personal Safety** refers to everything a technician must do or consider prior to entering the space to ensure the safety of themselves and others.
- **Facilities Safety** refers to the potential risks associated with the work environment specific to each discipline.
- **Operational Safety** refers to the appropriate use and operation of the tools and materials associated with each discipline.
- **Best Practices** refers to anything that is helpful to know, but is not a requirement for optimal safety.

The following language indicates different levels of requirement with respect to the specifications and guidelines set forth in this document:

- **Shall** – required as set forth by law or FCPS Regulation
- **Should** – strongly suggested
- **May** – not legally mandated, but permissible

Definitions of persons with respect to the specifications and guidelines set forth in this document:

- **Building Administrator** – the school-based administrator responsible for the maintenance and operation of the building
- **Adult Supervisor** – an adult, paid or volunteer, who has been badged by FCPS and approved by the administration
- **Theatre Teacher** – school-based FCPS teacher contracted for Theatre and Technical Theatre classes
- **Student** – any FCPS student that has requisite permissions and sufficient training as set forth by the theatre teacher and FCPS regulations.
- **Technician** – any person performing technical work in a performing arts space

Levels of supervision with respect to the specifications and guidelines set forth in this document:

- **Adult Supervisor Present** – in the general area, not necessarily in the same room
- **Direct Supervision** – in the room, operators are in the line of sight

GENERAL SAFETY

FACILITIES MANAGEMENT

An organized and clean performing arts facility is imperative for the safety of technicians, performers, and audiences. The following are protocols for maintaining a safe facility:

EMERGENCY PREPAREDNESS AND RESPONSE

Performing arts facilities are unique spaces that require specific planning and implementation of every practical measure available to reduce or eliminate injuries to technicians, performers, and audiences. The following are specifications and guidelines with respect to emergencies:

EMERGENCY PREPAREDNESS

1. **First Aid Equipment** – First aid kits are fully supplied, clean, and within expiration date. Location of nearest first aid kit and Automatic External Defibrillator (AED) are known.
2. **First Aid Procedures** – Location of *School Health Emergencies: Temporary Care Guidelines* flip chart is known. Teachers shall be familiar with how to follow the emergency procedures outlined in the flip chart.
3. **Occupancy Limits** – Occupant Load Certificate shall be posted near the main exit of large assembly rooms designed for more than 50 occupants. Questions about occupancy limits shall be directed to the Office of Safety and Security.
4. **Emergency Exits/Egress** – Emergency doors are visible and free of obstructions on both sides of door. Aisles and walkways are free of obstruction.
5. **Evacuation Routes** – Evacuation floor plan shall be posted adjacent to exit doors, showing primary and secondary evacuation routes.
6. **Fire Equipment** – Fire safety equipment shall be visible and free of obstructions. Maintain access to the fire alarm pull stations, fire extinguishers, fire hose standpipes, and other fire safety equipment.
7. **Safety Guidelines** – Teachers should establish a procedure in case of injury. Prominently post and periodically review safety procedures.
8. **Student Health** – Teachers shall be aware of students' allergies and health risks as noted in school database. A copy of each student's FCPS emergency care form should be on file and accessible to the adult supervisor in case of injury or emergency.
9. **Training** – Identify students and volunteers with First Aid, CPR, AED, or Epi-Pen training.

EMERGENCY RESPONSE

Injury –

1. **Immediate Action** – In case of injury, notify teacher or adult supervisor immediately and follow established safety procedures.
2. **Emergency Services** – Call 911 in the event of an emergency.
3. **Additional Notification** – Parents should be notified of all student injuries as soon as possible. Serious injuries should be reported to school administrator.

Facility –

Security Services – Call the Office of Safety and Security at 571-423-2000 for 24-hour dispatch to report facility problems such as security alarm errors, lockouts, trespassers, and utility emergencies.

SAFE WORKING CONDITIONS

Performing arts facilities are regulated by stricter safety standards and protocols than smaller spaces within the school. Safe work practices and procedures and the maintenance of the facility are imperative to the safety of all those working within it. The following are specifications and guidelines for safe working conditions:

1. **Adult Supervisor** – An adult, paid or volunteer, who has been badged by FCPS and approved by the administration. FCPS badged students shall not be considered adult supervisors.
2. **Supervision** – Work shall only be done with approval of theatre teacher and under proper supervision. Proper supervision by the adult supervisor is required for:
 - **Direct Supervision:**
 - Use of catwalks
 - Use of powered personnel lifts
 - Use of miter saws, panel saws, routers, and dremels
 - Use of prop weapons and any stage combat
 - **Adult Supervisor Present:**
 - Construction of scenic elements
 - Use of authorized power tools not specified above, listed in **Tools** chapter
 - Use of hazardous materials
 - Use of ladders
 - Use of winches
 - Rehearsing special effects
3. **Work Areas** – Maintain work areas and walkways so that trip hazards are minimized and floors are clean, dry, and free of debris. Sawdust and debris should be cleared regularly throughout the work shift.
4. **Stage Preparation** - Ensure stage is clear of debris and tools prior to rehearsals. Sweep and mop stage floor prior to performances. Take extra care whenever performers will be on stage without appropriate footwear.
5. **Food and Beverage** – Do not eat or drink in work areas.
6. **Equipment** – Ensure all equipment is in good working condition. Extension cords shall only be used on a temporary basis (less than 30 days). Approved tools and potential hazards are listed in the **Scenic Elements & Construction** chapter.
7. **Powered Personnel Lift** – Genie Operator Certification is required for operators and ground spotters of a powered personnel lift (Genie lift). Contact the Office of Safety and Security for more information.

- 8. Storage** – Conduct routine inspections of storage areas for the early identification of safety issues and Fire Code violations.
- Do not store any materials in electrical rooms.
 - Maintain a clear, unobstructed space of at least 36 inches in all directions from electrical service equipment, fire extinguishers, and fire alarm pull stations.
 - Maintain 18 inches of clearance from the ceiling in all spaces.
 - Never hang items on or from electrical conduits, fire suppression sprinkler pipes, or sprinkler heads.
 - Ensure storage shelves are secured from tipping and not overloaded.
 - There are specific requirements for the storage of prop weapons. Refer to the ***Prop Weapons*** section.
- 9. Unusual Production Elements** – Contact the Office of Safety and Security and the Office Risk Management for approval and appropriate procedures before using unusual production elements, including but not limited to live animals, vehicles, and other items not listed in this handbook.

FIRE SAFETY

Performing arts facilities are regulated by stricter safety standards and protocols than smaller spaces within the school. The following are specifications and guidelines to prevent fire and casualties:

Fire Protection Equipment – Maintain unobstructed access to fire safety equipment. Be aware and confirm that all fire safety equipment is properly maintained. Confirm that fire extinguishers have been inspected and properly documented on the yellow inspection tag. Only designated and trained adult school employees are permitted to use fire extinguishers.

Exit Signs – Ensure that exit signs are in good working order and are not altered or obstructed.

Inspection of the Space – Inspect performing arts facilities prior to each event to make sure that all stairways, doors, and other exits are free of debris and obstructions and that all exits are in proper operating condition.

- **Aisles** – Keep aisles completely clear. Ensure that all egress routes are at least 44 inches wide at all points and are kept free of debris and obstructions at all times.
- **Exit Doors** – Do not disable access to exits. When a performing arts facility is occupied, all exit doors shall be fully functional, accessible, and unobstructed by curtains or other masking.
- **Panic Bars** – Confirm proper operation of panic bars on all exit doors.
- **Temporary Seats** – Temporary seats shall adhere to all access and egress requirements of the Fire Code. In spaces with fixed seating, do not set up additional temporary seats without prior written approval of the Office of the Fire Marshal.

Crowd Managers – Provide certified crowd managers for events with more than 1000 people in attendance at a ratio of one crowd manager for every 250 persons. Contact the Office of Safety and Security if crowd managers are needed.

Audience Instructions – Within 10 minutes of the start of each performance or event, audiences shall be informed of the emergency procedures to be used if an evacuation is required. This announcement may be either recorded or live, and shall give the location of all emergency exits.

Use of Flame or Pyrotechnics – Effects that create a flame or detonation of any size shall be approved by the Office of Safety and Security and the Office of the Fire Marshal. Refer to the *Special Effects* section.

IN CASE OF FIRE

Under no circumstances shall a student attempt to extinguish a fire.

1. **Sounding the Alarm** – Upon discovering a fire, observing smoke coming from the building, or smelling gas, activate the fire alarm immediately without asking permission.
2. **Evacuation of the Building** – Upon hearing the fire alarm, all audience members, performers, and technicians shall evacuate and assemble at a point at least 100 feet from the building.
3. **Calling 911** – In addition to activating the fire alarm, call emergency services at 911 to provide details of the situation.

CURTAIN STANDARDS

Curtains intended for permanent use in the theater infrastructure are regulated by stricter safety standards and protocols than fabric used for temporary scenic elements. Descriptions of the various types of theatrical curtains can be found in the glossary. The following are specifications and guidelines necessary for prevention of fire and other physical damage to theatrical curtains:

FCPS Standards – All curtains and the devices to which they are mounted shall be professionally manufactured and installed according to standards and specifications established by the Office of Design and Construction and the Office of Facilities Management.

Flame Resistance – All curtains shall be certified and labeled flame resistant. Flame Resistant Certification labels shall not be removed. When requested by the Office of the Fire Marshal or school administrator, the Office of Safety and Security will determine the flame resistance of any curtain. If the fabric successfully passes the flame test, a flame resistance certificate will be issued and filed in the school's Fire Safety Manual.

Fire Prevention – Curtains shall not be closer than 18 inches to the rear and sides or 48 inches from the front (lens) of lighting instruments.

Protection from Physical Damage –

- Only authorized persons shall adjust curtains.
- Do not use excessive force when adjusting curtains.
- Avoid activities such as cutting or painting in close proximity to curtains.
- Do not get curtains wet; liquids will permanently stain and ruin curtains.
- Use care when working or moving items near curtains.
- Only tie back curtains using wide strips of fabric. Do not use rope, cable, cords, or tape.
- Do not tie curtains to any part of the theater infrastructure.
- Requests for repairs should be submitted to the building administrator.

Permitted Adjustments –

- Setting position and angle of legs
- Opening and closing traveling curtains
- Inserting or removing stretcher pipe

Attachment of Decorations – Do not attach decorations to any curtain.

Removal – Curtains may be temporarily removed under special circumstances with approval from the building administrator and the Office of Safety and Security. Curtains that are to be removed should be untied from the pipe or unhooked from the carriers. Do not alter hardware such as bolts, chains, roto-drapers, tracks, or battens. Curtains that are temporarily removed should be carefully stored to protect them from dirt and physical damage. Curtains shall be restored to their original location as soon as possible. Requests for alterations to or permanent removal of curtains or hardware shall be submitted to the building administrator.

Painted Backdrops – Fabric backdrops shall be flame resistant. Painted backdrops may be hung from border curtain battens, traveler tracks, or scenery battens. Backdrops shall not be hung from lighting battens unless all lighting instruments are removed.

Roller/Olio Drops – Roller/Olio drops shall only be installed on a temporary basis. Installations shall be inspected by the Office of Safety and Security.

Rented Curtains and Backdrops – All rented soft goods shall be flame resistant. Obtain a written certificate of flame resistance from the rental company and have it available for inspection by the Office of the Fire Marshal or the Office of Safety and Security.

Masking – Temporary masking hardware and soft goods do not need to meet the requirements of permanent theatrical curtains. Contact the Office of Safety and Security to ensure temporary masking is not in violation of Fire Code or FCPS policy.

Personal Protective Equipment

Proper preparation for work in technical theatre begins with a person's apparel and is supplemented as needed with specific safety equipment that helps to prevent injury. The following are specifications and guidelines for preventing personal injury:

Condition of Self and Others – Operating power tools or equipment when impaired or mentally/physically exhausted creates a hazardous work environment. Cell phones and other electronic devices cause distractions and may pose serious dangers to everyone in the space.

Shoes – Wear sturdy, closed-toed shoes at all times when working in a theater space. Shoes should be fitted, skid-resistant, cover the entire foot, and have no more than a one-inch heel. Steel toed safety shoes are highly recommended. Bare feet are only permitted for the purpose of performance as directed by the theatre teacher.

Clothing – Wear fitted clothing that does not impede movement.

Hair and Jewelry – Tie back hair and remove all loose jewelry and accessories.

Eye Protection – Wear proper eye protection when working with or around impact or chemical hazards. Do not share personal eye protection. Properly wash eye protection with hot water and soap.

- **Impact Hazards** – Wear American National Standards Institute (ANSI) approved impact safety glasses or goggles when sawing, drilling, or sanding any solid material. ANSI approved face shields do not provide the same level of eye protection as safety glasses or goggles, but may be worn over them to provide protection from facial injuries.
- **Chemical Hazards** – Wear ANSI approved chemical splash safety goggles when using any chemicals or sprayable paints.

Hearing Protection – Wear non-electronic hearing protection when working with power tools. Wearing headphones or playing background music creates a hazardous work environment and increases the danger of hearing loss.

Protective Gloves –

- **Lighting Equipment** – Wear mechanics gloves when adjusting lighting equipment.
- **Scenic Construction** – Wear mechanics gloves or leather gloves for handling construction materials. Gloves shall not be worn when cutting with power saws.
- **Paints and Other Chemicals** – Wear nitrile gloves when applying paints and other chemicals.

Dust Masks – Dust masks should be worn by technicians who are sensitive to dust and other inhaled irritants. Dust masks are for single use and should not be shared. Dust masks do not prevent inhalation of airborne chemical vapors.

OVERHEAD SAFETY

Performing arts facilities contain areas and equipment which require proper overhead safety guidelines and protocols be followed as improper use may result in death or serious injury. The following are specifications and guidelines related to overhead safety in performing arts facilities:

CATWALKS

Catwalks can be dangerous areas both for technicians working on them and persons below. Improper use of catwalks may result in death or serious injury. When following proper protocols, catwalks are safe not only for the technicians working on them, but also for anyone within the theater environment. For the purposes of safety, lofts are considered catwalks and all applicable guidelines shall be followed. The following are specifications and guidelines for working on catwalks:

Personal Safety

Parental Permission – Students working on the catwalk shall have a signed parental permission form on file at the school.

Safety Assessment – A student shall achieve a perfect score on the General Safety Assessment before using the catwalk.

Non-Essential Items – All non-essential personal items and accessories should be removed from pockets or secured to body before working on the catwalk.

Personal Awareness – When on the catwalk, move with care to avoid injury. Pay particular attention to low-hanging or overhead obstructions.

Tools – A technician shall tether all tools to their body and secure loose items.

Facilities Safety

Security – Keep the door(s) to the catwalk area closed and locked when the catwalk is not in use.

Work Areas – Maintain catwalk areas so that trip hazards are minimized and all surfaces are clean, dry, and free of debris.

Storage – Secure items stored on the catwalk to prevent injury to technicians on the catwalk or to persons below. Only items pertaining to catwalk operations shall be stored on the catwalk. Do not store any combustible items on the catwalk.

Safety Cables – Use safety cables to secure all lighting instruments, including those not in use, to a batten, catwalk railing, or structural steel.

Fire Prevention – Hang instruments with careful consideration given to fire hazards. Do not focus instruments directly into cables or other equipment. Hang instruments so that the lens end of the instrument has at least 48 inches of clearance.

Food and Beverage – Do not eat or drink in catwalk areas.

Alterations – No alterations or renovations to catwalks shall be made by school personnel. Contact the building administrator and the Office of Safety and Security for more information.

Operational Safety

Direct Supervision – An adult supervisor shall be in the theater, on the stage, or in the catwalk area when student technicians are working on the catwalk.

Protection of Personnel – No persons shall be in the area under the catwalk while technicians are working on the catwalk.

Permissible Use – The catwalk shall only be accessed for work purposes. No fewer than two persons shall be on the catwalk when in use.

Unauthorized Areas – Technicians shall stay within the guardrails of the catwalk. Death or serious injury may occur if a technician attempts to climb onto the roof trusses or step on the ceiling.

Fall Prevention – Keep both feet on the floor of the catwalk; use caution when reaching over the guardrail.

Projectiles – Do not throw or drop any item from the catwalk.

Hoisting Equipment – All hoisting equipment shall be approved by the Office of Safety and Security.

Best Practices

Overhead Notification – Announce and confirm appropriate notification such as “Working Overhead” or “Loose Hardware Overhead” to alert all present during a work shift or technical rehearsal.

LADDERS

Ladders are essential tools for technical theatre operations. When properly used, they are safe not only for the technicians working with them, but also for anyone within the theater environment. The following are specifications and guidelines with regard to ladders:

Personal Safety

Parental Permission – Students working on ladders shall have a signed parental permission form on file at the school.

Safety Assessment – A student shall achieve a perfect score on the General Safety Assessment before using ladders.

Facilities Safety

OSHA Rating – All ladders shall have a manufacturer’s label indicating the OSHA rating. The following OSHA ratings are acceptable for technical theatre use:

- Type 1 (heavy duty-250 lbs)
- Type 1A (extra heavy duty-300 lbs)
- Type 1AA (special duty-375 lbs)

Authorized Ladder Types – Only free-standing step ladders are approved for Fairfax County Public Schools student use, for example:

- A-frame ladders
- Platform ladders
- Twin ladders

Unauthorized Ladder Types – The ladders not approved for Fairfax County Public Schools student use are:

- Dual purpose ladders
- Extension ladders
- Straight single ladders
- Telescoping ladders

Do not use a chair, table, or any other substitute in place of a ladder.

Work Area – Maintain work areas so that floors are clean, dry, and free of debris.

Storage – Store ladders indoors so that they are not at risk of damage or tipping over.

Operational Safety

Supervision – Ladders shall only be used with approval of theatre teacher and presence of an adult supervisor.

Inspection – Maintain ladders in good condition at all times. Do not paint ladders as it can mask splits, cracks, and other defects. Prior to each work shift, inspect ladders to ensure the following:

- Steps and side rails are clean.
- Joints between steps and side rails are tight.
- Feet are present and in good condition.
- Hardware and fittings are securely attached.
- Moveable parts are fully functional.

Immediately withdraw defective ladders from use. Tag or mark "Dangerous, Do Not Use." Do not make repairs to damaged ladders. Report a damaged ladder to the building administrator and the Office of Safety and Security.

Electrical Shock Prevention – Use only fiberglass or wood ladders when doing electrical work. Do not use metal ladders.

Level Surface – Do not use a ladder on sloped or uneven surfaces.

Unstable Surfaces – Do not attempt to obtain additional height or mobility by using a ladder on unstable surfaces such as furniture, boxes, or wheeled bases.

Ground Spotter – Use a ground spotter when climbing or working on a ladder. The ground spotter shall give full attention to warning the technician on the ladder of hazards and alerting persons in the area of the ladder and technician.

Door Hazards – Use a ladder in front of a door only when the door is propped open or guarded.

Proper Setup – Only use ladders that are fully opened with the spreaders locked in place.

Proper Climbing – Maintain three points of contact at all times when climbing a ladder. Face the ladder when climbing up or down, and maintain a firm grip. Keep body centered between the side rails and do not overreach. Climb only on the step side and not on the brace side of the ladder. Only one technician may be on a ladder at a time except when using a twin ladder which can support one technician on each side.

Maximum Level – Do not climb, stand, or sit above the second step from the top of the ladder, unless otherwise stated by the manufacturer. Do not overreach.

Adjusting a Ladder – Do not attempt to adjust or move a ladder while a person is on it. Two technicians may be necessary to move large or heavy ladders.

Drop Hazard Prevention – When possible, a technician should tether tools and secure loose items to their body. Do not leave tools or equipment on a ladder. Do not drop or throw tools or equipment from a ladder.

POWERED PERSONNEL LIFTS (GENIE LIFTS)

Powered personnel lifts are essential tools for technical theatre operations. Improper use of a lift may result in death or serious injury. When used properly, lifts are the safest way to perform technical work above floor level. The following are specifications and guidelines with regard to lifts:

Personal Safety

Certification – All persons using a powered personnel lift shall complete Genie Operator training and certification. Students shall renew certification annually. Contact the Office of Safety and Security for more information.

Parental Permission – Students working on a powered personnel lift shall have a signed parental permission form on file at the school.

Operational Safety

Direct Supervision – An adult supervisor shall be in the theater or on the stage when student technicians are using a powered personnel lift.

Work Area – Maintain work areas so that floors are clean, dry, and free of debris.

Unstable Surfaces – Do not position a lift on orchestra risers, scenic platforms, stage extensions, or other temporary surfaces. Do not use a lift outside.

Pre-Operation Inspection – Inspect lifts prior to each work shift to ensure that all parts are in good working order. Ensure the platform is free from unnecessary items and debris. Follow the checklist in the Operator's Manual.

Functions Test – Test all operational and emergency functions prior to each work shift.

Damaged Machine – Immediately withdraw from service any lift that does not pass pre-operation inspection or functions test. Tag or mark "Dangerous, Do Not Use." Do not make repairs to damaged lifts. Report to the building administrator and the Office of Safety and Security.

Ground Spotter – A second Genie-certified operator shall be used as a ground spotter when a lift is in use. The ground spotter shall give full attention to warning the lift operator of hazards and alerting persons in the area of the lift and operator.

Occupancy and Capacity – Do not exceed the rated occupancy or capacity of the lift. Single-occupancy lifts are rated for one person. Dual-occupancy lifts, such as the Genie DPL, are rated for two persons. Do not exceed maximum occupancy even if the combined weight of the operators is less than the rated weight capacity of the lift.

Moving a Lift – A lift shall not be moved while in a raised position.

Transporting a Lift – Lifts shall only be rolled into position. If a lift is needed in an area that cannot be accessed by rolling, contact the Office of Safety and Security.

Security and Storage – Secure lifts when not in use by removing the key to prevent unauthorized use. At the end of the work shift, return lift to proper storage area.

WINCH BATTENS

Winches exert great force to lift and lower the extremely heavy loads placed on battens. When used properly, winch battens are safe not only for the technicians working with them, but also for anyone within the theater environment. The following are specifications and guidelines with regard to winch battens:

Personal Safety

Parental Permission – Students working with winch battens shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment, a student shall achieve a perfect score on the written Winch Batten Safety Assessment before using winch batten systems.

Facilities Safety

Alterations – No alterations or adjustments to the permanently installed components of a winch batten shall be made by school personnel. Requests for changes shall be submitted to the building administrator and the Office of Safety and Security.

Obstructions – Check for possible obstructions that may interfere with the moving batten, such as curtains, scenic elements, lighting instruments, or cables.

Operational Safety

Supervision – Winch battens shall only be operated with approval of theatre teacher and presence of an adult supervisor.

Ground Spotters – Use at least one other technician as a ground spotter to watch the moving batten for hazards and keep the area clear. If possible, use two ground spotters, one on each side of the stage.

Protection of Personnel – Ensure silence on stage when a batten is being flown. Announce and confirm the batten number and action prior to making any adjustments to the winch. Do not allow anyone to walk or stand beneath a batten that is being flown.

Manual Winch – Maintain a firm grip on the handle at all times when raising or lowering a batten. When the batten is returned to its raised position, ensure that the winch handle is removed or secured in place with a safety cable to prevent unintentional movement.

Motorized Winch Security – When the work shift is complete, remove the key and secure control box to prevent unauthorized use.

Fouled Battens – Watch the travel of the batten and lift lines. Stop if the batten changes angle or if any of the lift lines go slack.

Runaway Battens – In the event of a runaway batten, shout "Heads" as a warning. All persons shall immediately move away from the path of the batten, lift lines, and winch handle. Even after a runaway batten comes to an abrupt stop, the shock can cause additional damage, creating a secondary fall hazard. Immediately notify the building administrator and the Office of Safety and Security if there is a runaway batten or any other unusual situation with the winch system.

Best Practices

Overhead Notification – Common notifications include “First Electric Coming In,” “Scenic Batten Going Out,” and “All Clear”.

PROP WEAPONS

Regulation 8627 addresses the use of prop weapons. This regulation permits the use of prop weapons for theatre while maintaining the strength of **Regulation 2601**, Student Rights and Responsibilities (SR&R), which prohibits students from using or possessing weapons and look-alike weapons. The following specifications and guidelines shall be clearly understood and followed in order to safely and legally use prop weapons:

Use of Theatrical Stage Prop Weapons – Regulation 8627 only pertains to the use of prop weapons that are approved for use during the rehearsals and performances of theatrical productions or theatre arts classes. Refer to **Regulation 8627** for additional details on the use of prop weapons.

Students Rights and Responsibilities – Refer to **Regulation 2601** or the **SR&R Handbook** for additional details regarding the unauthorized use or possession of look-alike weapons or explosives. Failure to follow the guidelines listed below or other misuse of theatrical prop weapons constitutes a violation of **Regulation 2601** and may result in student suspension or expulsion.

Principal Approval – The principal shall provide written approval for the use of any prop weapon. Refer to **Regulation 8627** for specifics about gaining approval from the principal.

School Personnel Notification – The theatre teacher shall notify the School Resource Officer and school-based Safety and Security Staff any time prop weapons will be used.

Parental Notification – Parents shall be notified in writing of the intent for their child's use of prop weapons. The notification shall include a description of the prop(s) that will be used by their child. This notification shall be provided to the parents of all students involved with an event using prop weapons, regardless of whether their child has hands-on use or if he or she is merely involved with other students who will have use of the prop weapon(s). Written permission from the parents shall be obtained as acknowledgement of receiving the notification.

Prohibited Use – Authentic edged weapons shall not be used in stage combat. They may be used as carried props or set dressing if the cutting edges and any pointed tips have been ground down to reduce the possibility of injury. Authentic firearms shall never be used, even if they are not intended to be fired or if blanks are used.

Authorized Use – Do not build or modify your own weapons if they are to be used for stage combat; use only weapons designed for stage combat.

Use of Starter Pistols:

- **Justification** – Starter pistols are the only permitted live-fire prop weapons. Starter pistols shall be used only if it is essential to the artistic integrity of the theatre production.
- **Authorization** – The school principal shall approve the intended use of all starter pistols for stage use. Starter pistols are only permitted at the high school level.
- **Training** – The director of student activities, or his or her designee, shall provide training in the safe loading, use, and storage of any starter’s pistol and blank rounds.

Storage of Prop Weapons – Store all prop weapons in the designated secure storage area. After each use, the prop weapon shall be inventoried and locked in the designated secure storage area. Maintain chain-of-custody records to assure accountability for all prop weapons at all times.

Supervision and Training – Ensure a certified stage combatant (FDC or SAFD) choreographs all fight scenes. Directly supervise the development of fight choreography. Never point a prop gun at another person or towards the audience.

Areas of Use – Rehearsals involving the use of prop weapons shall be confined to the stage, auditorium, or theatre arts classroom. Rehearsals involving prop weapons shall not take place in hallways or common areas of the school nor outdoors on school grounds where the action may be mistaken as a real conflict. Use of prop weapons in alternate performance locations requires approval of the building administrator and the Office of Safety and Security.

Rehearsals and Performances – Rehearse all stage combat and use of prop weapons carefully, slowly building up the tempo. Run fight scenes with all necessary props, costumes, and set pieces before each dress rehearsal and performance. Inspect the weapon at each stage of chain-of-custody.

Handling of Prop Weapons – Prop weapons shall only be handled by the theatre teacher, the performer using the weapon, and a designated technician.

Audience Notification – The following notice is a requirement of **Regulation 8627** that shall be printed, without change in wording, in all production programs for performances using prop weapons of any type:

“All weapons depicted in this production are theatrical stage props, not authentic weapons. Their presence in this school and their use by our students strictly follow Fairfax County Public Schools regulations.”

TECHNICAL THEATRE DISCIPLINES

TOOLS

Hand and power tools are essential for technical theatre operations. When properly used, tools are safe not only for the technicians working with them, but also for anyone within the theater environment. The following are specifications and guidelines for working with tools:

Personal Safety

Parental Permission – Students using tools shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment, a student shall achieve a perfect score on the written and practical safety assessment for each power tool they intend to use.

Shoes – Wear sturdy, closed-toed shoes at all times when working in the theater environment. Shoes should be fitted, skid-resistant, cover the entire foot, and have no more than a one-inch heel. Steel toed safety shoes are highly recommended. Bare feet are only permitted for the purpose of performance as directed by the theatre teacher.

Clothing – Wear fitted clothing that does not impede movement.

Hair and Jewelry – Tie back hair and remove all loose jewelry and accessories.

Eye Protection – Wear American National Standards Institute (ANSI) approved impact safety glasses, goggles, or face shields when sawing, drilling, or sanding any solid material.

Hearing Protection – Wear non-electronic hearing protection when working with power tools. Wearing headphones or playing background music creates a hazardous work environment and increases the danger of hearing loss.

Protective Gloves – Wear proper protective gloves when handling construction materials. Gloves shall not be worn when cutting with power saws.

Facilities Safety

First Aid – Ensure that first aid kits are fully supplied, clean, and within expiration date. Location of nearest first aid kit and Automatic External Defibrillator (AED) are known.

Work Areas – Maintain work areas so that trip hazards are minimized and floors are clean, dry, and free of debris.

Power Cords – Ensure electrical cords and plugs are in good condition (no exposed internal wires, taped wires, or missing ground pins). Extension cords may only be used on a temporary basis (less than 30 days).

Maintenance – Ensure tools are clean and in good condition. Keep air vents free of sawdust and debris to prevent overheating. Replace dull or damaged bits and blades.

Tool Storage – Tools should be properly cleaned, inspected for damage, and stored after each use. Remove bits and blades from handheld power tools. Properly coil power cords to prevent damage. Miter saws should be stored in the locked position and the blade guard should be in a closed position. Lock all tools in tool cages or storage rooms to prevent unauthorized use. Power switches for panel saws should be secured in the off position with a padlock.

Operational Safety

Supervision – Tools shall only be used with approval of theatre teacher and presence of an adult supervisor. Direct supervision is required for routers, dremels, miter saws, and panel saws.

Authorized Middle School Tools – The following tools are approved for middle school student use:

- Hot glue guns
- Impact drivers
- Non-powered hand tools
- Powered screwdrivers

Authorized High School Tools – The following tools are approved for high school student use:

- Battery-powered narrow-crown staple guns (maximum 1 inch staples)
- Belt and orbital sanders
- Dremels
- Drills
- Hot glue guns
- Impact drivers
- Jig saws
- Miter saws
- Non-powered hand tools
- Panel saws
- Portable band saws
- Powered screwdrivers
- Reciprocating saws
- Routers

Unauthorized Power Tools – The following power tools are not approved for student use:

- Benchtop/stationary band saws
- Grinders
- Hand-held circular saws
- Planers
- Pneumatic/corded staple guns
- Pneumatic/electric nail and brad guns
- Table saws

Manufacturer's Instructions – Understand the safe operation of any tool prior to using it. Read and follow the manufacturer's instructions.

Attentiveness – Stay alert at all times when working with or around tools, especially power tools. Cell phones and other electronic devices cause distractions and may pose serious dangers to everyone in the space.

Inspection – Prior to using a tool:

- Check for missing or damaged parts.
- Ensure the casing is not cracked.
- Check that handles are secure.
- Ensure power cord is in good condition, not melted or frayed, and no wires are exposed.
- Make sure all guards are present and working properly.
- Make sure that all bits, belts, and blades are tightly clamped. Disconnect power or remove battery from the tool before changing bits or blades.
- Remove all adjusting keys and wrenches prior to starting a tool.
- If a tool is dropped while work is in progress, reinspect prior to continuing operation.

Damaged Tools – Discontinue use and alert theatre teacher if any tool appears to be damaged or missing parts.

Extension Cords – Plug power tools directly into a receptacle whenever possible. If an extension cord is necessary, make sure that the size of the wire is equal to or greater than the tool's cord and that the cord bears the manufacturer's "UL" mark (Underwriters Laboratory listed). Do not use an ungrounded two-wire extension cord.

Working Technique – Do not overreach or use excessive force when working with tools. Maintain proper footing at all times. Secure work materials with a vise or clamps as needed.

Power Saws and Drills –

- Do not reach underneath the work material or place hand under the guard or shoe of the saw.
- Do not stand or have any body parts in line with the path of the saw blade.
- Check for obstructions such as nails or screws before cutting or drilling.
- Do not start a saw with the blade pressed against the work material.
- Disconnect power or remove battery from the saw before attempting to free a stalled saw blade.
- Keep non-cutting hand at least six inches from the blade.

Transport – Do not carry a power tool with your finger on the trigger or switch.

Cord Care – Do not lift, carry, or hang a power tool by its power cord. Pull the plug, not the cord, when disconnecting from the outlet. Keep cords away from sources of heat and sharp surfaces or edges. Properly coil (over-under/flip coil technique) all cables for storage.

Work Area – Saw dust and debris should be cleared regularly throughout the work shift.

Best Practices

Dust Masks – Dust masks should be worn by technicians who are sensitive to dust and other inhaled irritants. Dust masks are for single use and should not be shared. Dust masks do not prevent inhalation of airborne chemical vapors.

SCENIC ELEMENTS & CONSTRUCTION

Scenic construction creates a number of hazardous situations. Proper care shall be taken at all stages of design, construction, and production to ensure the safety of all persons in the theater environment. The following are specifications and guidelines for the design and production of scenic elements:

Personal Safety

Parental Permission – Students constructing scenic elements shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment and the written and practical safety assessment for each power tool they intend to use, a student shall achieve a perfect score on the Scenic Elements and Construction Safety written assessment.

Apparel and Safety Equipment – Refer to the Personal Safety section in the *Tools* chapter.

Facilities Safety

First Aid – First aid kits are fully supplied, clean, and within expiration date. Location of nearest first aid kit and Automatic External Defibrillator (AED) are known.

Work Areas – Maintain work areas so that trip hazards are minimized and floors are clean, dry, and free of debris.

Lumber Storage – Ensure lumber and other scenic materials are neatly stacked and organized. Disorganized lumber can be a fire hazard and can be dangerous to access. Remove nails, screws, staples, and other hardware from lumber before storing.

Operational Safety

Supervision – Construction shall only be done with approval of theatre teacher and presence of an adult supervisor.

Consultation – Contact the Office of Safety and Security when designing unusual scenic elements to request a review prior to construction.

Foam Construction Materials – If planning to use foam materials for construction, Contact the Office of Safety and Security prior to purchase to ensure compliance with Fire Code and avoid potential toxicity.

Uncommon Construction Materials – If planning to use uncommon materials, contact the Office of Safety and Security prior to purchase to ensure that materials meet the minimum approved standards. Research potential hazards of any construction materials before use.

Hazards – The design and use of scenic elements shall not pose any health or safety risks to audience, actors, or technicians. Materials for construction of scenic elements that would pose a risk of toxicity to people or the environment shall not be used.

Fall Protection – Incorporate sufficient area into the design of a raised platform; actors shall not be endangered by performing on a platform that is too small. Use glow tape or other highly visible marking to identify step-off hazards.

- **Off-Stage Platforms and Stairs** – Weight-bearing guardrails shall be installed for all exposed edges.
- **On-Stage Stairs** – At least one side shall have a weight-bearing handrail unless otherwise authorized by the Office of Safety and Security.
- **On-Stage Platforms** – Provide weight-bearing guardrails when permitted in the design.

Mobile Scenery – Mobile scenery shall meet the construction requirements of standard scenic elements. The casters and brakes used and the method of installation shall not reduce the integrity of the scenic element under performance conditions. To ensure the safety of performers and technicians, contact the Office of Safety and Security for design review and approval before construction.

Construction – Construction requirements vary between standard scenic elements. The following are specifications and guidelines for construction of different types of standard scenic elements:

PLATFORMS

A platform is a reusable, raised walking surface intended for temporary use. The following are the minimum requirements for a platform:

1. **Frame** – A standard platform is 4x8 feet.
 - a. **Material** – Stud grade 2x4
 - b. **Assembly** – Joists should be installed every 24 inches. Use 3 inch deck screws.
2. **Top Surface** –
 - a. **Material** – $\frac{3}{4}$ inch plywood
 - b. **Attachment** – $1\frac{5}{8}$ inch deck screws, spaced 12 inches apart. Platform tops should not be glued, to allow for ease of repair.
3. **Legs** –
 - a. **Material** –
 - i. Platform height \leq 4 feet: stud grade 2x4
 - ii. Platform height $>$ 4 feet: 4x4
 - b. **Required Number** –
 - i. **2x4 frame** – Install 6 legs.
 - ii. **2x6 frame** – Install 4 legs.
 - c. **Attachment** – Two $\frac{3}{8}$ inch diameter hex head bolts for each leg, secured with a hex nut and two washers.
 - i. **2x4 legs** – Minimum bolt length $3\frac{1}{2}$ inch
 - ii. **4x4 legs** – Minimum bolt length $5\frac{1}{2}$ inch
4. **Cross Braces** – Use for any platform over 2 feet in height.
 - a. **Material** – 1x3
 - b. **Length** – Ensure braces are long enough to allow attachment within 9 inches of the top and bottom of the legs.
 - c. **Attachment** – Form an "X" pattern on the sides and ends of the platform.
5. **Platform-to-Platform Attachment** – Two $\frac{3}{8}$ inch diameter hex head bolts, each secured with a hex nut and two washers. Minimum bolt length $3\frac{1}{2}$ inches.
6. **Weight-Bearing Guardrails** – Install guardrails on platforms taller than 30 inches.
 - a. **Material** – 2x4
 - b. **Vertical Supports** –
 - i. **Height** – No less than 42 inches above top surface
 - ii. **Anchoring Methods** – Attach with a maximum horizontal spacing of 48 inches.
 1. **To Frame Only** – Two $\frac{3}{8}$ inch diameter hex head bolts, each secured with a hex nut and two washers.
 2. **To Legs** – Ensure vertical supports are long enough to extend 18 inches below platform surface. Use two 3 inch deck screws to secure to the frame and two within 6 inches of the bottom of the support.

FLATS

A flat is a reusable, vertical surface intended for temporary use. The following are the minimum requirements for a standard "Hollywood" flat:

1. **Frame** – A standard flat is 4x8 feet.
 1. **Material** – 1x3
 2. **Assembly** – Toggles should be installed every 32 inches. Use 1 5/8 inch drywall screws.
2. **Facing** –
 1. **Material** – 1/4 inch lauan
 2. **Attachment** – 3/4 inch drywall screws or narrow-crown staples. Facing may be glued to the frame to prevent warping.
3. **Bracing** – Ensure that flats are supported to prevent tip-over.

STAIRS

The following are the minimum requirements for stairs:

1. **Frame Types** –
 - a. **Hurdles** – Vertical 2x4 frames extending to the floor with horizontal supports. A series of hurdles of increasing heights results in a minimum of 4 legs per step.
 - b. **Stringers** – Sloped 2x12 boards, notched to support each step
 - c. **Other** – Contact the Office of Safety and Security for design review and approval before attempting to construct stairs with any other frame types.
2. **Tread** –
 - a. **Material** – 3/4 inch plywood
 - b. **Size** –
 - i. **Vertical Rise** – 4 to 7 3/4 inches, consistent for each step. The top or bottom step can vary by 1/4 inch to accommodate desired overall height.
 - ii. **Horizontal Run** – 10 inches, consistent for each step
 - iii. **Width** – Minimum 24 inches
3. **Stability** – Ensure stairs are braced and supported to prevent movement when in use.
 - a. **Hurdles** – Additional supports shall be used for treads wider than 48 inches.
 - b. **Stringers** – Additional supports shall be used for treads wider than 36 inches.
4. **Handrails** –
 - a. **Material** – Any graspable, weight-bearing material and hardware are permitted.
 - b. **Height** – 30 to 34 inches, measured vertically from edge of step, parallel to stair slope

RAKES/RAMPS

Rakes and ramps are sloped surfaces that shall be built according to the construction standard for platforms.

Maximum Rake – Design ramps with slopes no greater than 1:4. The ramp should rise no more than 1 inch for every 4 inches of horizontal travel.

Slip Prevention – If it is necessary to have a ramp with a slope greater than 1:4, apply a non-skid surface.

TRAP DOORS

Design – Use extreme caution when designing sets with trap doors. The trap door shall have the same load-bearing capacity as the rest of the platform.

Approval – Contact the Office of Safety and Security for design review and approval before attempting to construct a trap door. The trap door shall be inspected before the first use.

BEST PRACTICES

Visibility – Use glow tape whenever possible to mark hazards on stage for performance. Lights should be used to illuminate backstage and offstage areas during performance.

Flame Retardant – It is recommended to treat all combustible scenic elements with a flame retardant.

PAINTS AND OTHER CHEMICALS

Extra precautions shall be taken to prevent health and fire hazards when working with certain paints and other chemicals. When properly used, they are safe not only for the technicians working with them, but also for anyone within the theater environment. The following are specifications and guidelines for working with paints and other chemicals:

Personal Safety

Parental Permission – Students working with paint and other chemicals shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment, a student shall achieve a perfect score on the Paint and Other Chemicals Safety written assessment before handling paint, other chemicals, and related materials.

Eye Protection – Wear ANSI approved chemical splash safety goggles when using any chemicals or sprayable paints.

Facilities Safety

Donations – *Regulation 8628* states that no one is permitted to accept gifts of chemicals or chemical products from individuals, government agencies, military installations, corporations, companies, or any other source without written authorization from the Office of Safety and Security.

Unauthorized Use – Oil-based paints, stains, polyurethane, and other non-water-based liquid chemicals are prohibited for use in FCPS schools.

Aerosol – Aerosol paints, sprays, and adhesives are authorized for outdoor use by FCPS students.

Ventilation – Ensure all work spaces are properly ventilated. Aerosol paints and adhesives shall only be used in outdoor work areas.

SDS Availability – Ensure that a Safety Data Sheet (SDS) is available for the paint or other chemicals used. The SDS is available from the vendor or manufacturer of the paint or other chemical. Refer to the SDS for information on hazards, proper handling, and proper disposal.

Containers – Use only sturdy, airtight containers that are clearly labeled to identify contents and hazards. Ensure containers are tightly sealed to prevent leaks.

Storage – Store containers on low, sturdy shelves, with the label facing out. Secure aerosol cans after each use to prevent unauthorized use. Paint cans should not be stacked more than two cans high.

Operational Safety

Supervision – An adult supervisor shall be present when students are using paint and other chemicals.

Exposure – If paint or other chemicals come into contact with eyes, immediately flush with only clean water for a minimum of 15 minutes. Seek medical attention.

Food and Beverage – Do not eat or drink in work areas.

Disposal – Ensure water-based paint has dried completely before disposal. Follow label instructions for disposal of other chemicals. Contact Office of Safety and Security to arrange for proper disposal of large amounts of water-based paint or other chemicals.

Hygiene – Wash hands after using paints and other chemicals. Only wash hands with soap and warm water. Do not use paint removal products on skin.

Best Practices

Gloves – Students may wear protective nitrile gloves when applying paints to avoid skin irritation. Be aware of latex allergies.

Spills – Clean paint spills by absorbing the paint with sawdust or a commercially available paint drying agent and disposing of the mixture in a trash can.

Clean-Up – Clean brushes, rollers, and emptied paint trays in a designated sink approved by the operating engineer or building administrator. Flush the drain pipes by leaving the water running for at least 30 seconds after rinsing out the paint.

LIGHTING

Theater lighting systems are designed for flexibility and specialized use. When properly used, they are safe not only for the technicians working with them, but also for anyone within the theater environment. The following are specifications and guidelines with regard to lighting:

Personal Safety

Parental Permission – Students working with a lighting system shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment, a student shall achieve a perfect score on the Lighting Safety written and practical assessments before using any part of the theater lighting system.

Shoes – Wear sturdy, closed-toed shoes when working with lighting equipment.

Gloves – Wear proper protective gloves when adjusting lighting equipment. Mechanics gloves are recommended.

Thermal Protection – Be aware that lighting instruments operate at very high temperatures and can cause serious burns. Exercise extreme caution to protect exposed skin.

Tools – A technician shall tether all tools to their body and secure loose items. An 8-inch adjustable wrench is recommended.

Facilities Safety

Approved Equipment – All lighting instruments shall be listed by a recognized independent testing laboratory such as Underwriters Laboratories (UL) or Electrical Testing Laboratories (ETL), and bear the manufacturer's UL or ETL label.

Alterations and Repairs – No alterations to permanent electrical systems or lighting instruments shall be made by school personnel. Contact the building administrator to request alterations and repairs to any electrical system or lighting instrument.

Purchases and Donations – All lighting equipment purchases and donations shall be purchased from an approved vendor or approved by Field Services, Department of Information Technology. Unapproved equipment may result in death or serious injury and damage the electrical system.

Fire Prevention – Hang instruments with careful consideration to fire hazards. Do not focus instruments directly onto cables or other equipment. Hang instruments so that the lens of the instrument has 48 inches of clearance and the sides and back have 18 inches of clearance from curtains and scenic elements. Ensure instrument position will not create a fire hazard if curtains are drawn, moved, or repositioned. Stage lighting shall not be left on while unattended.

Instrument Storage – Store lighting instruments carefully to prevent damage. Gently coil the electrical lead to prevent the plug from getting caught and pulled. Push lens barrels and shutters fully into the instrument and tighten yoke bolts. Store instruments clamped to a storage pipe if possible; if space does not allow this, place lens end down on a clean surface in a designated storage area. Instruments stored on the catwalk shall be secured with a safety cable to prevent falling.

Electrical Cable Storage – Coil unused cables individually, neatly tie, and place in a location that will protect them from damage and contact with moisture. Properly coil (over-under/flip coil technique) all cables for storage.

Dimmer Security – Ensure the dimmer rack doors remain closed and locked.

Protection of Lighting Console – Eating or drinking is not permitted near the lighting console. When the console is not in use, it shall be turned off and its protective cover shall be in place.

Operational Safety

Supervision – An adult supervisor shall be present when the lighting system is in use. Direct adult supervision is required for using catwalks and Genie lifts.

Permissible Adjustments – Student technicians are permitted to make the following adjustments to lighting instruments:

- Reposition and hang on approved batten pipes
- Plug and unplug
- Install or remove lighting accessories
- Focus

Inspection – Inspect each instrument before it is hung and while focusing to determine if the equipment is mechanically and electrically safe. Damage that may result in death or serious injury include:

- Cracked C-clamps
- Bent or damaged yoke
- Stripped or missing bolts
- Missing safety cables
- Loose wires or damaged cord
- Exposed electrical conductors
- Rattling parts
- Cracked or broken lenses

Unplug and remove damaged equipment. Notify the building administrator to request repair.

Safety Cables – Safety cables shall be present on all lighting instruments. Safety cables may be disconnected when repositioning lighting instruments. Technicians should use extra care as accidents could result in death or serious injury.

Hanging – Lighting instruments shall only be hung from approved structures. Alert persons in the area when working with loose hardware or hanging/removing lighting instruments.

Hang a lighting instrument by following the steps in the order listed:

- Position and hand-tighten C-clamp on to approved batten or structure.
- Secure safety cable to lighting instrument and batten.
- Tighten all bolts with wrench.
- Plug instrument in to de-energized receptacle.

Attachment of Accessories – Ensure that lighting accessories are properly installed and cannot slip out of the instrument. Certain accessories require an additional safety cable.

Electrical Capacity – Do not exceed the rated capacity of a circuit. Be aware that there may be two or more receptacles per circuit. Use caution when connecting multiple lighting instruments to a single circuit with twofers. If you are unsure of the rated capacity of a circuit, consult Field Services, Department of Information Technology.

Plugging in Equipment – Ensure the power to the receptacle is off when plugging in a lighting instrument.

Extension Cables – The only type of cable acceptable for use as an extension cord for a lighting instrument is 12 gauge, 3 conductor (grounded), protected with acceptable insulation rated for “extra hard usage” as specified by the National Electrical Code. The acceptable cable type is marked with "12/3 AWG" and one of the following letter codes: G, G-GC, S, SC, SCE, SCT, SE, SEO, SEOO, SO, ST, STO, STOO PPE, and W. Cable marked with “SJ” is only permitted for use as a commercially manufactured twofer no longer than 3 feet.

Securing Overhead Cables – Cables shall be secured with tie line when mounted overhead.

Securing Floor Cables – Avoid placing cables on the floor to prevent a trip hazard or, if necessary, choose locations that are not in the direct path of travel. Clean floor, arrange cables flat on the floor in a smooth, neat manner, and tape down securely with gaffers tape. In high traffic areas where scenic elements or performers may cross, cover the cables with a wood curb and gutter or with a commercially available rubber cable cover.

Lamp Replacement – Replace a lamp by taking the following steps in the order listed:

- Turn off power.
- Unplug instrument.
- Allow lamp to cool.
- Remove old lamp using proper gloves.
- Check old lamp for corrosion and charring. If present, tag and remove instrument from use and notify theatre teacher.
- Check lamp type to ensure that the replacement is the proper type.
- Install new lamp. Avoid touching the glass housing with bare skin. If touched, immediately wipe glass with an alcohol swab.
- Ensure lamp is securely seated and the lamp housing is properly closed.
- Plug the instrument into the receptacle.
- Slowly restore power to the circuit to prevent damage to the lamp.

Practicals – Practical lighting fixtures shall be wired by a person approved by Field Services, Department of Information Technology. Student technicians shall not wire a practical. Approved Edison-to-Stage Pin adapters should be used whenever possible rather than replacing plugs.

Strobe Lights – Provide a written warning in the program and at audience entrances that clearly states strobe lights will be used.

Lasers – Contact the Office of Safety and Security if planning to use laser effects in production.

Best Practices

Blackout – Announce and confirm the notification “Going Dark” before turning off all stage and house lights to alert all present during a work shift or technical rehearsal.

Drop Hazards – In the event of any accidentally dropped objects, equipment, or cables, shout “Heads” as a warning.

PROJECTIONS

When properly used, projection equipment is safe not only for the technicians working with it, but also for anyone within the theater environment. The following are specifications and guidelines with regard to theatrical projections:

Personal Safety

Parental Permission – Students working with the projection equipment shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment, a student shall achieve a perfect score on the Audio and Projection Safety written and practical assessments before using any projection equipment.

Facilities Safety

Alterations and Repairs – No alterations to permanently installed projectors, wiring, or screens shall be made by school personnel. Contact the building administrator to request alterations and repairs to any projection system.

Work Areas – Maintain work areas so that trip hazards are minimized and floors are clean, dry, and free of debris.

Protection of Equipment – Eating or drinking is not permitted near projection equipment.

Cords and Cable – Ensure electrical cords and plugs are in good condition (no exposed internal wires, taped wires, or missing ground pins). Electrical extension cords may only be used on a temporary basis (less than 30 days). No cord or cable should cross any walkway or exit without proper cord covers and warnings.

Video Cable Storage – Properly coil (over-under/flip coil technique) all cables for storage. Coil unused cables individually, neatly tie, and place in a location that will protect them from damage and contact with moisture.

Operational Safety

Supervision – An adult supervisor shall be present when projectors are in use. Direct adult supervision is required for using catwalks and Genie lifts.

Projectors – Set up projectors for temporary use on a projector stand or other stable surface, or hang using manufacturer-approved mounting hardware. When a projector is set up at an elevated position, secure it with a safety cable.

Screens – Properly hang screens for temporary use. Screens shall not be hung from lighting battens unless all lighting instruments are removed. Free-standing frames shall be properly secured and weighted to prevent tipping over.

Plugging in Equipment – Projectors shall only be plugged into standard receptacles, not dimmable lighting circuits.

Securing Video Cables – Secure cables to overhead pipes with tie line. Secure cables to floor using gaffers tape or commercially available cord covers. Avoid placing cables in high traffic areas. If placement of cords in the house is necessary, mark them with highly visible tape.

SPECIAL EFFECTS

Theatrical productions and events often require the use of special effects. The techniques involved in creating and operating special effects require particular attention to ensure the safety of the cast, crew, and audience. The following are specifications and guidelines for the creation of special effects in theatre:

Personal Safety

Parental Permission – Students working with special effects shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment, a student must demonstrate proficiency in following manufacturer’s instructions before using special effects equipment.

Gloves – Wear proper protective gloves when handling equipment or materials that may cause thermal (burns/frostbite) or contact injuries.

Facilities Safety

Approved Electrical Equipment – All electrical devices shall be listed by a recognized independent testing laboratory such as Underwriters Laboratories (UL), or Electrical Testing Laboratories (ETL), and bear the manufacturer’s UL or ETL label.

Administrative Approval – Special effects may require testing and approval from the building administrator and the Office of Safety and Security before use.

Floors and Walkways – Regularly monitor and quickly address liquids or debris created by use of special effects. Operating effects can create hazards for performers, technicians, and audience members.

Operational Safety

Supervision – Special effects shall only be operated with approval of theatre teacher and presence of an adult supervisor.

Rehearsing Effects – Rehearsing effects shall be approved by the theatre teacher. Notify all persons present at the time the special effect will be used.

Breakaway Glass and Vessels – Use only commercially produced theatrical breakaway glass for broken glass effects. Under no circumstances should real glass or other materials be used.

Confetti Cannons – Plan the placement of confetti cannons to avoid striking performers or audience members with confetti. Closely adhere to manufacturer’s instructions for proper use. Avoid directing confetti towards lighting instruments, battens, and catwalks. Be aware that paper confetti is combustible.

Flying – Student performers are strictly prohibited from being “flown” or levitated by mechanical means unless the effect is provided by an approved vendor. Vendor approval shall be obtained from the Office of Safety and Security and the Office of Risk Management.

Fog/Haze, Chemical –

Approved Devices – Ensure that the machine selected is designed for producing fog/haze effects.

Smoke Detectors – Heavy use of fog/haze can activate smoke detectors. Contact the Office of Safety and Security to plan and schedule a test before using a fog/haze machine.

Equipment Fluid – Ensure proper manufacturer recommended fluid is used.

SDS Availability – Ensure that a Safety Data Sheet (SDS) is available for the chemical that is used. The SDS is available from the vendor or manufacturer of the special effect chemical. Refer to the SDS for information on hazards, proper handling, and proper disposal.

Fire Prevention – Fog and haze machines can become very hot. Avoid touching the machine during or immediately after use, and place the machine in a clear, designated area to prevent fire.

Fog, Dry Ice – Contact the Office of Safety and Security before using dry ice fog effects.

Thermal Hazard – Use heavy gloves and tongs whenever handling dry ice to avoid severe blistering or frostbite. Dry ice is extremely cold with a temperature of negative 109 degrees Fahrenheit.

Asphyxiation – Ensure proper ventilation when using dry ice. Heavy breathing and gasping for air are signs that carbon dioxide levels are too high. Seek fresh air immediately.

Storage – Store dry ice in a Styrofoam cooler with a lid that does not latch firmly in place. Never place dry ice in a sealed container: the expanding gas will explode the container and can cause death or serious injury.

Pyrotechnic Effects/Open Flame – Pursue theatrical options instead of using open flames. Effects that create a flame or detonation of any size require approval by the Office of Safety and Security and the Office of the Fire Marshal. Commercial flash paper and flash cotton may be used without prior approval.

Snow –

Artificial Snow – Select biodegradable snow to avoid problems with disposal.

Snow Cradles – Contact the Office of Safety and Security for approval and guidance for installation of snow cradles.

Snow Machines – Powered snow machines use a liquid chemical and a blower. Follow the same guidelines for **Chemical Fog** as stated above.

Aerosol Snow – Aerosol cans of artificial snow can be used for scenic elements. Follow the same guidelines as aerosol spray paint listed in the **Paints and Other Chemicals** section.

Strobe Lights – Provide a written warning in the program and at audience entrances that clearly states strobe lights will be used.

Water and Other Special Effects – Contact the Office of Safety and Security for approval before using water and other special effects not listed. Always use commercially produced devices intended for theatrical purposes.

AUDIO

Audio equipment is delicate and can be easily damaged. With proper setup and application, audio equipment is safe not only for the technicians working with it, but also for anyone within the theater environment. The following are specifications and guidelines with regard to theater audio systems:

Personal Safety

Parental Permission – Students working with the audio system shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment, a student shall achieve a perfect score on the Audio and Projection Safety written and practical assessments before using any part of the theater audio system.

Facilities Safety

Alterations and Repairs – No alterations to permanent audio systems shall be made by school personnel. Contact the building administrator to request alterations and repairs to audio systems.

Cords and Cable – Ensure electrical cords and plugs are in good condition (no exposed internal wires, taped wires, or missing ground pins). Electrical extension cords may only be used on a temporary basis (less than 30 days). No cord or cable should cross any walkway or exit without proper cord covers and warnings.

Audio Cable Storage – Properly coil (over-under/flip coil technique) all cables for storage. Coil unused cables individually, neatly tie, and place in a location that will protect them from damage and contact with moisture.

Amplifiers/Rack Security – Ensure access to the amplifier rack remains closed and locked when not in use.

Protection of Sound Console – Eating or drinking is not permitted near the sound console. When the console is not in use, it shall be turned off and its protective cover shall be in place.

Operational Safety

Supervision – An adult supervisor shall be present when the audio system is in use. Direct adult supervision is required for using catwalks and Genie lifts.

Permissible Adjustments – Student technicians are permitted to make the following adjustments to audio systems:

- Temporary setup of microphones, cables, and stands
- Temporary setup of monitors, speakers, and cables
- Temporary setup of intercom headsets
- Setting up wireless transmitters and receivers
- Replacement of batteries in wireless microphones
- Patching cables to the inputs and outputs of the sound console
- Any operational adjustments to the sound console

Alternate Locations for Sound Console – Consoles shall not be positioned in a way that obstructs fire egress routes. Equipment, tables, and personnel shall not be placed in the aisles. It is permissible to block audience seats by placing a table over the seats, as long as the people in the seats adjacent to the console have access to an aisle, and the number of remaining usable chairs in the row does not exceed 16.

Securing Audio Cables – Cables shall be secured with tie line when mounted overhead. When placing cables on the floor, choose locations that are not in the direct path of travel; secure with gaffers tape or commercially available cord covers. If placement of cables in the house is necessary, mark them with highly visible tape to alert the audience to their presence.

Personal Microphones – Use only medical tape to secure microphones to skin. Secure transmitter to performer's body to prevent dropping or damage. Protect transmitter from moisture; neoprene microphone belts are recommended.

Speaker Cable vs. Instrument Cable – Instrument cable may overheat when connected to amplifiers. Visually, the only difference between ¼" speaker cable and ¼" instrument cable is the labeling on the sleeve. Speaker cable is 12 or 14 gauge; instrument cable may be 16 gauge or higher and may be marked "Instrument Only."

Sound Levels – The audience shall not be exposed to a level of 95 decibels or greater on the "A" weighted scale (dB-A) for more than 90 seconds. Use a sound level meter to measure decibel level.

Best Practices

Noise Notification – Announce and confirm the notification "Sound" or "Noise" before checking sound levels to alert all present during a work shift or technical rehearsal.

COSTUMES

When properly constructed, cared for, and used, costumes are safe for any technician or performer. The following are specifications and guidelines with regard to costumes:

Personal Safety

Parental Permission – Students working with costumes shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment, a student shall achieve a perfect score on the Costumes Safety written assessment before constructing or handling costumes. Use of machines and specialized costuming tools may require a perfect score on additional practical assessments.

Chemical Protection – Adhesives, paints, or sprays shall only be used with proper personal safety protection including eye protection, gloves, and masks.

Allergies – Be aware of allergies to fibers, sprays, latex, or detergents that are frequently used in the construction, maintenance, and use of costumes.

Facilities Safety

Exits and Egress – Ensure that the placement of clothing racks and other equipment does not block doorways or egress routes.

Storage –

- Maintain 18 inches of clearance from the ceiling in all spaces.
- Plumbing, fire sprinkler, or conduit pipes shall not be used for hanging costumes.
- Use step ladders as needed to avoid overreaching.
- Heavy and frequently accessed items should be stored on shelves within the optimum lift zone (between the knees and shoulders).
- Stored items should not extend beyond the edge of shelf.
- Materials shall not be stored near equipment that emits heat.

Operational Safety

Supervision – An adult supervisor shall be present during the construction of costumes and costume elements.

Cleaning – Launder or dry clean all costumes before storage. Purchased, rented, or borrowed costumes should be cleaned prior to use.

Design – The design and use of costume elements shall not pose any health or safety risks to actors or technicians. The design of costume elements should not pose a risk of trip/fall, overheating, or breathing restriction, and should meet all performance requirements.

Work Area – Ensure that floors and walkways are clear of fabric and other debris to prevent slips and falls.

Scissors and Cutting Devices – Only use cutting devices for their intended purpose. Cut on a designated cutting surface. Keep hands and fingers away from the cutting line and cut away from your body. Use care when carrying and handing cutting devices to others. Remove dull or damaged cutting devices from use.

Pins and Needles – Only use for their intended purpose. Ensure all straight pins and needles are removed from costumes before use.

Sewing Machines/Sergers – Sewing machines are tools and require the same precautions as any power tool.

- Prior to use, inspect the machine to check for missing or damaged parts.
- Ensure the casing is not cracked, handles are secure, and the power cord is in good condition.
- Ensure all guards are present and working properly.
- Keep fingers away from the presser foot or needle of any machine to avoid injury.
- If any machine appears to be damaged or missing parts, remove from use and alert the theatre teacher.

Irons and Glue Guns – Students should only use irons and glue guns for intended purposes and obtain permission prior to use.

- Prior to use, ensure the casing is not cracked, handles are secure, and the power cord is in good condition.
- Check labels and information on material before any heat application.
- Consider using protective gloves when steaming.
- Ensure all equipment is turned off and unplugged before leaving the area.
- Ensure all equipment is cooled prior to storage.

Extension Cords – Plug powered tools directly into a receptacle whenever possible. If an extension cord is necessary, make sure that the size of the wire is equal to or greater than the tool's cord and that the cord bears the manufacturer's "UL" label (Underwriters Laboratory listed). Do not use an ungrounded two-wire extension cord.

Cord Management – Cords shall not be placed across doorways or walkways and should be consistently monitored.

Adhesives and Chemicals – Use adhesives and chemicals according to manufacturer’s safe handling instructions. Products that produce chemical vapors and dust shall only be used in ventilated areas.

Fabric Sprays and Detergents – Ensure that all actors and technicians handling costumes are aware of potential allergens contained in any deodorizing sprays, fabric softeners, and detergents before use.

Masks – Approved methods for mask making are listed in the Operational Safety section of the *Hair and Makeup* chapter.

HAIR AND MAKEUP

When properly selected, cared for, and used, hair and makeup products are safe for any technician and performer. The following are specifications and guidelines with regard to hair and makeup:

Personal Safety

Parental Permission – Students working with hair and makeup shall have a signed parental permission form on file at the school.

Safety Assessment – In addition to passing the General Safety Assessment, a student shall achieve a perfect score on the Hair and Makeup Safety written assessment before working with hair and makeup.

Chemical Protection – Adhesives, paints, or sprays shall only be used with proper personal safety protection including eye protection, gloves, and masks.

Burn Protection – Use pads or gloves to protect skin from burns when using hair appliances that require heat.

Allergies – Be aware of allergies to materials and ingredients used in makeup, wigs, and hair products.

Hygiene – Wash hands and any applicators properly before and after applying makeup. Do not share personal makeup.

Facilities Safety

Wash Station – Identify location of closest sink for eye and skin care and emergencies.

Work Area – All work spaces and surfaces shall be kept clean and organized to prevent contamination of makeup and applicators. Use thermal shields and pads to protect surfaces from contact with hot irons. Remove all combustible items and aerosol sprays from areas where hot irons will be placed.

Storage – Organize makeup and hair materials to promote cleanliness and reduce the likelihood of shared use, contamination, and unauthorized access.

- Storage space or cabinet should be lockable and secured.
- Makeup should be kept in a cool and dry place.
- Ensure all makeup containers are tightly sealed and labeled.
- Replace all makeup according to manufacturer’s expiration dates.
- Keep disposable applicators in sealed containers.
- Clean and sanitize all brushes, combs, and curlers; store in airtight containers.
- Ensure all wigs are stored in sealed, airtight bags. Label appropriately.

Operational Safety

Supervision – An adult supervisor shall be present when students are using any hazardous materials associated with hair and makeup.

Injury and Exposure – Seek medical attention for serious skin reactions, symptoms of pink eye, and scratched cornea. Identify whether the performer is wearing contacts before application to avoid eye injury.

Hazardous Ingredients – Use caution as products may contain hazardous ingredients that can be dangerous if ingested or inhaled. Only use aerosol products in well ventilated areas.

Allergic Reactions – Use hypoallergenic cosmetics for students with sensitive skin or eyes. Be aware of student allergies, particularly latex and beeswax. Identify product ingredients and perform a patch test at least 24 hours prior to use.

Product Use – Only commercially available cosmetic products are approved for use. Follow manufacturer’s instructions.

Shared Makeup – Do not share personal makeup. Makeup intended for multiple performers requires a single-use applicator. Applicator shall be disposed after contact with skin. Do not re-insert applicator into makeup. Do not share makeup brushes or applicators.

Makeup Brush and Applicator Care – Clean personal makeup brushes and sponges with mild soap and water after each use. Discard disposable sponges after each use.

Removal – Completely remove makeup products from skin after use with soap and water or commercially available cosmetic removal products.

Hair Appliances – Inspect curling irons, flat irons, hot rollers, and hair dryers before use to ensure there are no missing or damaged parts, the casing is not cracked, and the cord is not frayed or melted. If any appliance appears to be damaged or missing parts, remove from use and alert the theatre teacher. Do not use on synthetic wigs.

Hair Tool Care – Clean and sanitize brushes, combs, and curlers after each use. Do not submerge hairbrushes in liquid.

Wig Use – Use a wig cap whenever a wig is worn. Do not share wig caps. Wig caps should be washed as needed. Wigs should be cared for and cleaned according to manufacturer’s instructions.

Masks – Masks may be safely created using pre-made molds. Wet plaster shall not be applied to skin. Papier-mâché may be used to make custom molds if skin is protected with a barrier such as cling wrap or petroleum jelly. Include air holes when applying materials to the face. If planning to use uncommon materials, contact the Office of Safety and Security prior to purchase to ensure that materials meet the minimum approved standards.

Best Practices

Product Information – Maintain informational sheets and documents that accompany original packaging and make that information available to users. Discard products at appropriate expiration dates to prevent bacterial growth and infection.

**GLOSSARY
OF
TECHNICAL THEATRE
TERMS**

GLOSSARY

ADJUSTABLE WRENCH (Crescent Wrench) – An open-end wrench with a movable jaw, allowing it to be used with different sizes of fastener head (nut, bolt, etc.) rather than just one fastener size. This is the recommended tool for theatrical lighting work because it can be adjusted to the various bolt sizes on a theatrical lighting instrument.

ADJUSTING KEY or WRENCH – Any tool or device used to tighten or release the locking mechanism of the chuck that holds the bit (or blade) of the tool.

ADULT SUPERVISOR – An adult, paid or volunteer, who has been badged by FCPS and approved by the administration.

AED – Automatic External Defibrillator. A portable electronic device that automatically diagnoses the life-threatening cardiac arrhythmias of ventricular fibrillation and pulseless ventricular tachycardia and is able to treat them through defibrillation, the application of electricity which stops the arrhythmia, allowing the heart to re-establish an effective rhythm.

AIRBORNE CHEMICAL – A chemical carried by or through the air. These pose a hazard to technicians because they can be inhaled and are often nearly invisible.

AMPLIFIER – An electronic device that increases the strength (amplitude) of audio signals that pass through it. An audio amplifier amplifies low-power audio signals to a level suitable for driving passive loudspeakers.

ANSI – American National Standards Institute. A non-profit organization that oversees the development of voluntary consensus standards to ensure that the characteristics and performance of products are consistent. Safety equipment provided in FCPS Technical Theatre programs must meet ANSI standards.

APPAREL – Anything worn on a person's body. Includes clothing, shoes, jewelry, accessories, etc.

ASPHYXIATION – The state or process of being deprived of oxygen, which can result in unconsciousness or death; suffocation.

AUTHORIZED PERSON – Any person authorized by the theatre teacher to perform a specific task.

BACKSTAGE – The area behind the furthest upstage part of the performance area. This is also known as the crossover area.

BAND SAW – A saw with a long, sharp blade consisting of a continuous band of toothed metal stretched between two or more wheels to cut material. Only portable band saws are authorized for student use.

BARN DOOR – A lighting accessory device for shaping the light emitted from a Fresnel lighting instrument. It consists of two or four metal plates and is attached to the Fresnel by inserting it in the color frame holder on the front of the instrument.

BATTEN – Pipe that has been commercially manufactured and professionally installed for the purpose of hanging theatrical lighting instruments or curtains. Battens are typically 1 ½ inch inside diameter schedule 40 steel pipe.

BOLTS –

Hex Head Bolts: Bolt with a hexagonal head and threaded body. Section immediately under head may or may not be threaded.

Carriage Bolts: Bolt with a smooth rounded head and a square section to prevent turning followed with a threaded section for a nut.

Lag Bolts or Lag Screws: Not a true bolt. Hex bolt head with threaded screw tip for use in wood.

BREAKAWAY GLASS AND VESSELS – Artificial glass specially constructed to easily break for the purpose of performance; often referred to as “sugar glass.” Most professionally constructed breakaway glass is actually made from a plastic resin mixture.

CAPACITY – The maximum amount that a piece of equipment can support. This can refer to weight or electrical current.

CARRIERS – Specialty hardware designed to carry curtains or scenery along a track. Only commercially produced carriers shall be used in FCPS theater spaces.

CASTER – Wheeled device typically mounted to a larger object that enables relatively easy rolling movement of the object. Always follow manufacturer’s guidelines for maximum capacity. Heavy duty and specialty casters are available from specialty theatrical suppliers.

CATWALK – An overhead area that includes a walking surface, instrument mounting positions, and electrical circuits.

CHAIN-OF-CUSTODY RECORDS – Specific breakdown of persons in contact with a particular item at all times. These are required for prop weapons to ensure that weapons are handled properly and remain in authorized areas at all times.

CHEMICAL – Any potentially hazardous substance used in the construction of scenic elements or other technical theatre work. FCPS has strict guidelines regarding the use and acquisition of chemicals. Manufacturer labels will list potential hazards and toxicity.

CIRCUIT – In a lighting system, the connection between a labeled stage pin receptacle and its corresponding dimmer in the rack.

CLAMPS –

C-clamp: In lighting, a C-clamp is attached to the yoke of the lighting instrument to hang it securely from a lighting batten. In carpentry, a type of clamp device typically used to hold a wood workpiece secure while working.

Quick Clamp: A one-handed bar clamp used to temporarily hold workpieces in place.

Pipe Clamp: In carpentry, pipe clamps are used to temporarily hold workpieces in place and are composed of commercially manufactured clamp heads or "jaws" and a length of common threaded pipe.

CONDUCTOR – The metal part of an electrical cord or wire that carries the electrical current.

CONDUIT – Metal pipe used to house and protect electrical wiring. This pipe is lightweight and not suitable for hanging lighting instruments or curtains.

CONFETTI CANNON – A device used to shoot confetti out across a distance. These can be DMX or user-controlled.

CORNER BLOCK – A 45-degree right triangle made from 1/4-inch AC-grade plywood. A corner block is fastened to each corner of a 1 x 3 wood-framed "Broadway" flat to strengthen the joint and to maintain a square corner.

CROSS BRACES – Structural supports of a platform that are mounted at an angle to the horizontal and vertical sections.

CURTAINS –

Grand Drape (Grand): Also called act curtain, house curtain, house drape, or main drape, this curtain hangs downstage, just behind the proscenium arch. It is typically opened and closed during performances to reveal or conceal the stage and scenery from the audience.

Teasers (Borders): Short curtain hung above the stage to obscure equipment in the air from audience view. The "Grand Teaser" is a teaser hung above the Grand Drape and usually matches color.

Legs: Also called tormentors. Tall curtains on either side of the stage used to hide off-stage areas, create a false sense of perspective, or create a specific scenic look.

Traveler: A full-height curtain that travels along a track. Most commonly installed to open and close from center stage via a pulley system. FCPS Grand Drapes are all travelers. Travelers are also commonly installed at mid-stage and at the rear of the stage.

Cyclorama (Cyc): A single white curtain that takes up the full height and width of the stage. They are sewn flat with no pleats and are used as a surface to bounce washes of colored light or other lighting effects

DE-ENERGIZING – Unplugging or removing a battery from a power tool or disconnecting a lighting fixture from a power source.

DEBRIS – Scattered pieces of waste or scrap material.

DECIBEL (dB-A) – Unit used to measure the intensity of a sound or the power level of an electrical signal by comparing it with a given level on a logarithmic scale.

DIMMER – A device that regulates the voltage supplied to lighting circuit receptacles. Dimmers are usually located near the stage and are controlled by electronic signals from the control panel.

DIMMER MODULE – A component of the stage lighting control system. A module will contain anywhere from one to four dimmers, each protected by an individual circuit breaker.

DIMMER RACK – The metal cabinet that contains the individual dimmer modules. The rack has power line cables that energize the dimmers and circuit load wires that energize the lighting receptacles. The rack typically will have cooling fans and grills and a metal protective door.

DIRECT SUPERVISION – Approved adult supervisor is within line of sight and within earshot of the persons they are supervising.

DREMEL – A specific brand of rotary tools. This term is commonly used to refer to any rotary tool.

DRILL – A hand tool, power tool, or machine with a rotating cutting tip or reciprocating hammer or chisel, used for making holes.

DRY ICE – Solid carbon dioxide, which produces a dense white mist when mixed with water in order to produce theatrical effects.

DUST MASK – A flexible pad held over the nose and mouth by elastic or rubber straps to protect against dusts encountered during construction or cleaning activities.

EDISON – Standard electrical connection; can refer to a plug or receptacle.

EDISON TO STAGE PIN ADAPTOR – A commercially manufactured device that has one stage pin end and one Edison end. Most commonly seen as female Edison to male stage pin, allowing the user to plug a traditional light into a theatre circuit in order to control it via the theater's control board.

EGRESS – The clear pathway to the exit. This includes all aisles, hallways, and the exit opening itself.

ELECTRICAL CONDUCTORS – See “CONDUCTORS”

ELECTRICAL CABLE – A cable manufactured for the express purpose of carrying an electrical current. Different types and sizes are suitable for different intensities of an electrical current. Always follow manufacturer’s instructions for the safe electrical capacity of a cable.

ELECTRICAL LEAD – The cord and plug attached to the end of a lighting instrument or power tool.

ENERGIZING – Plugging in or inserting a battery into a power tool or connecting a lighting fixture to a power source.

EVACUATE – Remove someone or yourself from a place of danger to a safe place. In the case of fire, always evacuate to at least 100 feet from the building.

EYE PROTECTION – Goggles or shields use to prevent debris and other materials from coming into contact with your eye.

Non-ventilated Chemical Splash Goggle: Used for protection against gas and liquids.

Impact Resistant Safety Goggles/Glasses: Used for protection against dust and debris.

FDC – The Academy of Fight Directors Canada. One of two internationally-recognized bodies capable of certifying actor-combatants and fight directors or choreographers.

FIBERGLASS – Glass in fibrous form used in making various products (such as glass wool for insulation).

FIRE ALARM PULL STATION – A manually operated switch that activates a building's fire alarm system.

FIRE EXTINGUISHER – A portable pressurized container that discharges a jet of dry chemical powder, CO-2 gas, or other material to extinguish a fire. Always be aware of the location of all fire extinguishers in the theater and any work area.

FIRE HOSE STANDPIPE – A type of rigid water piping built into multi-story buildings in a vertical position, to which fire hoses can be connected. Within the context of a building, a standpipe serves the same purpose as a fire hydrant.

FIXED SEATING – Permanently installed seats in any space.

FLAME RETARDANT – Can refer to either a combustible material that has been chemically treated to not support combustion or the chemical used in that treatment.

FLASH PAPER – Sheets of paper or cloth made from nitrocellulose, which burn almost instantly with a bright flash, leaving no ash.

FLATS – Large vertical surfaces of stage scenery often used to represent walls but made of lightweight materials such as thin plywood, fabric, or dense cardboard.

Hollywood Flat: 1x3 or larger frame laid out so the face attaches to the thin side of the framing. Normally faced with either ¼ inch lauan or Masonite, although thicker materials can be used. Toggles should be attached at least every 32 inches. This style allows it to stand on end with minimal bracing, but offers smaller surface area to attach the face.

Broadway Flat: 1x3 or larger frame laid out so the face attaches to the wide side of the framing. Can be hard or soft-covered. Corner blocks should be applied to each corner. This style allows for easier attachment of facing material, but cannot stand on its own and is harder to secure to the floor.

Soft Cover vs. Hard cover: Flats can be faced with either soft goods (usually muslin) or hard materials (usually ¼ inch lauan or Masonite). Soft goods can be secured with wide crown staples, hard surfaces should be attached with glue and screws or narrow crown staples measuring no longer than 1 inch.

FLIP COIL – See “Over/Under Coil”

FLOOR PLAN – A scale diagram of a room or suite of rooms viewed from above. Used for planning set designs as well as emergency egress.

G, G-GC, S, SC, SCE, SCT, SE, SEO, SEOO, SJ, SO, ST, STO, STOO PPE, W – Designation codes for the type of external insulating covering of flexible electrical cords.

GAFFERS TAPE – Also called gaff tape. Heavy-duty adhesive tape for stage use. This tape has a durable base of woven fibers and is strong enough to hold stage cables down. Gaffers tape comes in black and several other colors and is available through theatrical supply vendors.

GAUGE – The size or thickness of the conductors in an electrical cord. The lower the gauge number, the larger the conductor. The gauge number is printed on or embossed into the outer insulation of stage cables. Often the gauge number is followed by the number of conductors in the cable. Example: 12/3 = 12 gauge conductor, three conductors.

GENIE LIFT – See “Powered Personnel Lift”

GENIE OPERATOR CERTIFICATION – The official certification from Genie. Certification is earned after completion of the Genie Operator Training program. Genie Operator Training must be conducted by a certified Genie Instructor.

GLASS HOUSING – The clear part of a lamp, containing the filament.

GLOVES – Gloves are used to protect hands from chemicals and debris. Be sure to use the proper gloves for each job. No gloves should be worn when using power tools.

Nitrile gloves: Recommended for use of paints and chemicals.

Leather gloves: Recommended for handling lumber. Leather gloves can be used for focusing hot lighting instruments, but will absorb skin oils, and should not be used to change lamps.

Mechanics gloves: Recommended for use for all lighting tasks including focusing hot instruments and changing lamps. These gloves do not absorb skin oils and will protect the quartz glass lamps as well as protect against heat.

GLOW TAPE – An adhesive tape that is luminescent. After exposure to a light source, this tape will appear as a green glow in the dark. Glow tape is available through theatrical supply vendors.

GRINDER – A type of power tool used for grinding off sharp ends of screws or cutting through stuck bolts. Unauthorized for student use.

GROUND SPOTTER – A technician who is responsible for supporting a student working in the air (either on a ladder or Powered Personnel Lift). The ground spotter must give their full time and attention to warning the lift operator/ladder user of any potential hazards and to warning all persons on the ground of the presence of the lift/ladder and operator/user.

GUARD – The moveable plastic piece that covers the blade of the saw and pulls back when cutting begins.

HAND-HELD CIRCULAR SAW – A power saw using a toothed or abrasive disk or blade to cut different materials using a rotary motion. Unauthorized for student use.

HEARING PROTECTION – Ear plugs or over-ear protection should be used. Headphones do not provide proper protection. Foam ear plugs are affordable and effective.

HOISTING EQUIPMENT – Any equipment, to include ropes, pulleys, hooks, etc., that is used to raise or lower large items such as lighting fixtures.

HOT GLUE GUN – A usually gun-shaped electric tool used for melting and applying sticks of adhesive.

HYPOALLERGENIC – Having a low capacity to induce allergic reaction.

IMPACT DRIVER – A tool that delivers a strong, sudden rotational and downward force for driving screws.

JIG SAW – A machine saw with a fine blade enabling it to cut curved lines in a sheet of wood, metal, or plastic.

JOIST – A joist is a length of lumber on the inside of the frame of a platform, often between beams that subsequently transfer loads to vertical supports.

LADDERS –

A-frame Ladders: There are two legs that are angled upward, coming together at the top so that from the side, the legs of the ladder and the floor form a triangle. There is usually some form of support between the legs that locks so that the legs are even more stabilized. One or both of the legs of the A frame ladder have steps on which the user can climb to get to the top.

Dual Purpose Ladders: Works both as a double-sided step as well as a single ladder which means it can be used for a number of different things. These ladders are not authorized for student use.

Extension Ladder: A non-self-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets to permit length adjustment. These ladders are not authorized for student use.

Platform Ladders: A self-supporting portable ladder of fixed size with a platform provided at the intended -highest standing level.

Step Ladders: A self-supporting portable ladder, non-adjustable in length, with flat steps and hinged base.

Straight Single Ladders: A non-self-supporting portable ladder, non-adjustable in length, consisting of one section. These ladders are not authorized for student use.

Telescoping Ladder: A ladder able to slide inward or outward and usually has overlapping sections. These ladders are not authorized for student use

Twin Ladders: Ladders with steps on both sides. These are able to support one person on each side of the ladder.

LAMP – The light-producing component of a lighting instrument. The lamp consists of a metal base, a glass housing, and a filament. Using the three-letter ANSI (American National Standards Institute) standard code guarantees that a replacement lamp will match the original.

LAMP HOUSING – The part of the lighting instrument that contains the lamp and lamp socket.

LATEX PAINT – Water-soluble, latex rubber-based paint. This type of paint is the most commonly available household paint.

LAUAN – A tight-grained plywood made from Philippine mahogany. Often used for manufacturing hollow-core interior doors and stage scenery. Also known as underlayment. This material is not structurally sound and shall not be used as a weight-bearing surface.

LENS – A piece of glass or other transparent substance with curved sides for concentrating or dispersing light rays, used singly or with other lenses. The lens end of a theatrical lighting instrument is considered the “front” of the instrument.

LENS BARREL – The moveable part of an ellipsoidal lighting instrument that contains one or two lenses used to change the focus of the light.

LIFT LINES – The wire ropes that attach to the batten. When wound on a winch, these lines lift the batten. Usually there are anywhere from five to seven lift lines for each batten.

LIGHTING ACCESSORIES – Add-ons for lighting instruments used to enhance the light or help control the instrument. The most common accessories are color frames and gobo holders, but barn doors are often used on Fresnel Fixtures.

LIGHTING INSTRUMENTS (aka Fixtures): Any object that emits light for performance.

MASONITE – A dark brown sheet material made from wood fibers. Masonite is available in several thicknesses and is either tempered or untempered. Masonite is used in scenery construction as a covering for flats or as a veneer surface for stages or platforms. This material is not structurally sound and shall not be used as a weight-bearing surface.

MITER SAW – A saw used to make accurate crosscuts and miters in a workpiece by pulling a large backsaw or mounted circular saw blade down onto a board. Compound Miter Saws feature blades that pivot left and right for angled cuts and tilt in a single direction for bevel cuts.

MONITOR – A speaker set up to allow the performers to hear sound that is being played through the sound system.

MUSLIN – A plain woven cotton fabric used to cover scenery flats or to cover plywood to mask the grain. This material is available from scenery supply companies in a natural or flame-resistant (FR) form. Non-FR muslin must be treated with a flame retardant prior to use on stage.

NEOPRENE MICROPHONE BELT – A belt made out of a synthetic polymer material with a pouch specially designed to hold a wireless microphone transmitter for performance. These are useful for performers who have multiple costume changes or need to execute choreography while wearing a wireless microphone.

NUT – A small flat piece of metal or other material, typically square or hexagonal, with a threaded hole through it for screwing onto a bolt as a fastener.

OCCUPANCY – The maximum number of persons permitted in an area or on a piece of equipment.

OCCUPANT LOAD CERTIFICATE – An official document issued by the Office of Public Works and Environmental Services that states the maximum number of occupants permitted in a room designed for more than 50 occupants.

OFFICE OF SAFETY AND SECURITY (OSS) – The Office of Safety and Security provides overall guidance, direction, and support to the Safety, Health, and Security programs. This includes federal (and Commonwealth of Virginia equivalent), Environmental Protection Agency (EPA), and Occupational Safety and Health Administration (OSHA) programs. Safety and Security also develops, implements, and monitors student and employee health and safety programs;

monitors and standardizes chemical purchases; and implements necessary hazardous waste disposals.

OFFSTAGE – The areas of the stage that are not readily visible to the audience.

OLIO DROP – A single large canvas called a *drop*, which is attached at the bottom to a long rigid tube. Each end of the rigid tube of the drop has a single coil of rope called an "operating line" wrapped around it. One end of each operating line is secured to the fly space. The line descends from the fly space and loops around the tube once, then rises back up to the fly space and through a pulley. An olio requires a sturdy roll tube to prevent sagging. The larger the tube diameter, the more readily it will descend when the ropes are loosened

ONSTAGE – The part of the stage that is within the audience's view. This area is defined by the location of masking curtains, scenery, or acoustic shells.

OSHA – Occupational Safety and Health Administration, the federal agency that is responsible for establishing and enforcing safety and health standards for general industry. The Virginia Department of Labor and Industry is responsible for administering and enforcing occupational safety and health activities as required by the Federal Occupational Safety and Health Act of 1970.

OUTRIGGERS – The horizontal support braces on a powered personnel lift that are attached to the lift at floor level and are used to stabilize or level the lift.

OVERREACH – Reaching past a point at which you are able to maintain proper footing and ensure complete control over a tool.

OVER/UNDER COIL – Also known as a flip coil, this is the proper method for coiling electrical, audio, and video cables to prevent the wires breaking within the cord. Take the cable in one hand and start with an overhand loop. Flip the cable and roll it underneath to create the second loop. Repeat overhand and underhand until the cable is entirely coiled. Use a piece of tie line, velcro, or cable tie to keep the cable coiled together.

PAINT TRAP – A collection tank that can be installed to the waste line of a sink, designed for the collection of acrylic and oil based paint residue as well as solvents.

PANEL SAW – A circular saw mounted on a carriage and able to move along a guide and lock in place. FCPS-installed panel saws are all able to be adjusted to make both vertical and horizontal cuts.

PANIC BAR – A horizontal bar on a fire-exit door that releases the latch mechanism when the bar is pushed or struck.

PAR CAN – The simplest electric stage light; basically any flood light in a cylindrical body without lenses or shutters. PAR stands for “Parabolic Aluminum Reflector,” which is the type of sealed beam lamp that includes a lens that are used in these fixtures. The size of the beam can be changed by selecting different PAR lamps.

PATCH TEST – A skin test designed to check for allergies to specific makeup products. Place a small amount of the product on the inner wrist or elbow and leave in place for at least 24 hours. If any itching or redness occurs during the test, immediately wash the product off with soap and water as that is a sign of an allergic reaction. Avoid washing the area while the test is in progress if possible.

PLANER – A power tool that is used to smooth or finish the surfaces of wood or metal. These tools are unauthorized for student use.

PLYWOOD – A type of strong, thin wooden board consisting of two or more layers glued and pressed together with the direction of the grain alternating, and usually sold in sheets of four by eight feet. Sheets of plywood are given a grade noting the relative quality of each side of plywood. AA plywood is the highest grade and indicates that both sides are of high quality. CDX grade is the lowest grade of plywood permitted to be used as a weight-bearing surface on platforms or stairs.

PNEUMATIC – Containing or operated by air or gas under pressure. Pneumatic fastening tools are unauthorized for student use.

POINT OF CONTACT – Anywhere your hands and/or feet come into contact with a surface, usually in reference to climbing a ladder.

POWERED SCREWDRIVER – A tool used to insert or remove screws from a surface. Powered screwdrivers can either be battery powered or corded and often have interchangeable bits. A power drill with a screwdriver bit is also considered a powered screwdriver.

POWERED PERSONNEL LIFT – A machine that uses electrically powered hydraulic pumps to vertically raise a platform that the lift operator stands on.

PRACTICAL – Any element of a scenic or costume design that needs to be energized to produce light.

PRODUCTION PROGRAM – The means by which information about the production is communicated to an audience. This may include a printed program, digital program, or physical lobby display.

PYROTECHNICIAN – A person trained, tested, and licensed in the design, setup, or conducting indoor visible or audible effects by combustion, deflagration or detonation of chemical mixtures.

RAILINGS –

Handrail: A rail fixed to posts or a wall for people to hold on to for support.

Guardrail: A rail that prevents people from falling off or being hit by something.

RECEPTACLE – An electrical outlet. Always be aware of the load limit on each receptacle whether it be a standard electric outlet or a theatrical lighting circuit.

RECIPROCATING SAW – A powered saw that uses a push-and-pull ("reciprocating") motion of the blade to achieve a cutting action.

RISE AND RUN – A quick reference to the height and depth of each step in a stair unit. Rise must be between 4 and 7 ¾ inches. Run must be a minimum of 10 inches.

ROLLER DROP – A mechanical device used to roll a backdrop or screen down from an overhead pipe.

ROOF TRUSS – A structural framework designed to bridge the space above a room and to provide support for a roof. These trusses are not designed to walk or climb on.

ROTO-DRAPER – A swivel device centered on a short length of pipe that a leg curtain is tied to. The roto-drapeer is attached to a track that allows the curtain to be turned at an angle and travel sideways.

ROUTER – A hand tool or power tool that a worker uses to rout (hollow out) an area in relatively hard material like wood or plastic.

RUBBER CABLE COVER – An abrasion-resistant, protective covering for an insulated electric cable.

SAFD – Society of American Fight Directors. One of two internationally-recognized bodies capable of certifying actor-combatants or fight directors and choreographers.

SAFETY DATA SHEET (SDS) – A widely used system for cataloging information on chemicals, chemical compounds, and chemical mixtures. SDS information may include instructions for the safe use and potential hazards associated with a particular material or product. The SDS should be available for reference in the area where the chemicals are being stored or in use.

SCENIC ELEMENTS – Components of scenic design such as stage, backgrounds, backdrops, flats, platforms, props, soft goods, and set dressing.

SCHEDULE 40 PIPE – The type of steel pipe used for theatrical purposes. The schedule refers to the thickness of the walls of the pipe. Pipe thinner than schedule 40 could rupture and fail when tightening lighting instruments or other accessories onto the pipe. This classification,

along with the inside diameter, is important to accurately purchase additional pipe and to assess if pipe currently in the theater space is suitable for mounting stage lighting instruments.

SCRIM – A curtain that is made from a seamless, open weave, black or white material. Scrim are used to visually soften and blend the lighting on cycloramas and can also be used to reveal or hide an area of the stage, depending on how it is illuminated. Use caution when working near a scrim due to their delicate nature and difficulty to repair.

SEATED – The term describing a lamp being properly installed and connected into the socket of a lighting instrument.

SHIP'S LADDER – Stairs that are set at an angle steep enough to require the use of handrails. Access to lighting catwalks is often gained by the use of a ship's ladder. A ship's ladder provides a safe exit from scenic platforms with a minimal footprint on the floor plan.

SHOE – The part of the saw that rests on top of the wood and serves as a guide for the blade.

SHUTTERS – Metal wings in an ellipsoidal lighting instrument that are used to shape the light output.

SIDE RAILS – The sides of the ladder to which the steps and braces are connected.

SLACK – The amount of give in a line or rope. When a single lift line “goes slack,” or appears to be hanging loosely, it is an indication that it is no longer supporting the weight of the batten being raised or lowered, and steps must be taken to restore the line before work continues.

SLOPE – A difference in level or sideways position between the two ends or sides of a surface.

SNOW CRADLE – A type of snow machine that drops fake snow by shifting from side to side and allowing the snow to fall through holes or between pieces.

SOFT GOODS – Any fabric used for theatrical purposes or in scenic design. Normally refers to all curtains and masking.

SOUND CONSOLE – A component of the audio system that allows a technician to adjust input signals from microphones, mp3 players, and other sources and to channel the signal to various speakers and other outputs.

SPREADERS – A metal hinge device on a freestanding ladder that secures the two sections to each other at a fixed angle.

STAGE PIN – Electrical connection used in theater lighting systems; can refer to a plug or receptacle.

STAGE COMBATANT – Stage combatant or actor combatant is the first level of certification from the major fight director associations. This is the minimum certification level to choreograph fights for an FCPS school production.

STEP-OFF HAZARD – Any edge of a raised platform that poses a danger to actors or technicians in the area. Also referred to as a “fall hazard.”

STRUCTURAL STEEL – Steel angles, rods, beams, or trusses that are part of a building's main structure.

STUD GRADE – A type of 2x4 lumber that is more resistant to warping or bending due to pressure than lower grade 2x4s.

TABLE SAW – A circular saw mounted under a table or bench so that the blade projects up through a slot. These tools are unauthorized for student use.

TEMPORARY – Anything installed for less than 30 days.

TIE LINE – Black $\frac{1}{8}$ inch rope which is unglazed, allowing knots to be easily manipulated. It has a soft feel but is firmly braided to keep fraying at a minimum. It is used for everything from tying cables to connecting a tool to the technician's body.

TOGGLES – A length of lumber on the inside of the frame of a flat to provide stability to the frame and additional support for the facing material.

TOXICITY – The potential of any material to poison someone.

TRANSMITTER – A device that transmits a signal to a receiver. This could refer to wireless DMX control or wireless microphones.

TREAD – The walking surface of a step within a stair unit. The “run” of “rise and run.” 10 inches is the minimum tread depth.

TWOFER – An adaptor allowing two fixtures to be plugged into one receptacle.

TWO-WIRE EXTENSION CORD – An electrical extension cord that has only two conductors (hot and neutral) and does not have a protective ground wire.

UNCOMMON MATERIALS – Construction materials other than traditional lumber and cloth materials mentioned in this handbook. This may include sheet metal, foam insulation, and plexiglass.

UNDERWRITERS LABORATORY, INC. (UL) – A global independent product safety company. Some of the services offered by UL include: inspection, advisory services, education and training, testing, auditing and analytics.

VENTILATION – The provision of fresh air to a room.

WAGON BRAKES – Brakes used to stabilize a rolling platform or scenic element.

WASHER – A small, flat ring made of metal, rubber, or plastic fixed under a nut or the head of a bolt to spread the pressure when tightened or between two joining surfaces as a spacer or seal.

WINCH – A steel spool that is mounted to the building's structure. It is used for pulling and winding the wire rope that is used to suspend a batten. Manually operated winches have a crank handle while powered winches are operated using electrical switches.

WIRE ROPE – An assembly of individual wires formed into groups called strands, which are then combined to form a synthetic rope. “Aircraft Cable” is a type of wire rope that has great strength, flexibility, and durability, and is used for lift lines on a flown batten. The specific type of aircraft cable used for stage rigging is comprised of seven strands, each containing 19 wires of the same diameter.

YOKE BOLT – The bolt that attaches the yoke of the lighting instrument to the C-clamp. The vertical adjustment bolts of an instrument are also called yoke bolts because they attach the instrument to the yoke.

APPENDIX

Appendix A: Parental Permission Forms

Teachers shall use the following forms for obtaining parental permission before students participate in technical theatre work.

Teachers are not permitted to modify the language of the permission forms.



Technical Theatre Course **PARENTAL PERMISSION FORM**

In order to participate in technical theatre work, students must complete the appropriate training and pass the applicable assessments according to the guidelines of the *FCPS Technical Theatre Safety* handbook.

Participation in the technical theatre course and extracurricular program includes work in the following areas with approval of the theatre teacher and under proper supervision:

- Scenic Construction
 - Scenic construction involves the use of a variety of tools and construction materials which can cause injury if improperly used. Lists of approved tools can be found in the *FCPS Technical Theatre Safety* handbook.
- Painting
 - The use of certain paints and other chemicals may pose health and safety risks if improperly used.
- Lighting
 - Theatrical lighting work requires dealing with electrical equipment and working on ladders, powered personnel lifts, and catwalk areas.
- Projections
 - Installing projection systems may require working on ladders, powered personnel lifts, and catwalk areas.
- Special Effects
 - Special effect devices pose a series of potential injury risks if improperly used and may require working on ladders, powered personnel lifts, and catwalk areas.
- Audio
 - Preparing audio systems for performance may include working on ladders, powered personnel lifts, and catwalk areas.
- Costumes
 - Costuming requires working with a variety of fabrics and other materials and the use of several tools which pose injury risks if improperly used.
- Hair & Makeup
 - Hair and makeup products pose health risks when improperly used. Several tools used in hair and makeup design pose injury risks if improperly used.

Student's Name: _____

I hereby grant permission for my student to receive training and participate in the above activities in their technical theatre course and/or extracurricular theatre program.

- I have reviewed the *FCPS Technical Theatre Safety* handbook and understand that all activities will comply with these guidelines.
- I understand some of the activities of a theatrical technician may expose my student to the risk of injury.
- I understand that Fairfax County School Board does not provide any type of accident or medical coverage for students who participate in Technical Theatre coursework. If any injuries occur, school personnel will respond just as they do during the school day and in accordance with the Code of Virginia.

Parent/Guardian Signature

Print

Date

If you have questions concerning this form or any of its contents, please contact your student's theatre teacher.



Extracurricular Theatrical Production **PARENTAL PERMISSION FORM**

In order to participate in technical theatre work, students must complete the appropriate training and pass the appropriate assessments according to the guidelines of the *FCPS Technical Theatre Safety* handbook.

I grant permission for my student to participate in the following Technical Theatre activities in the extracurricular program, with approval of the theatre teacher and under proper supervision:

(Check all that apply.)

- Scenic Construction:**
Scenic construction involves the use of a variety of tools and construction materials which can cause injury if improperly used. Lists of approved tools can be found in the *Technical Theatre Safety* handbook.
- Painting:**
The use of certain paints and other chemicals may pose health and safety risks if improperly used.
- Lighting:**
Theatrical lighting work requires dealing with electrical equipment and working on ladders, powered personnel lifts, and catwalk areas.
- Projections:**
Installing projection systems may require working on ladders, powered personnel lifts, and catwalk areas.
- Special Effects:**
Special effect devices pose a series of potential injury risks if improperly used and may require working on ladders, powered personnel lifts, and catwalk areas.
- Audio:**
Preparing audio systems for performance may include working on ladders, powered personnel lifts, and catwalk areas.
- Costumes:**
Costuming requires working with a variety of fabrics and other materials and the use of several tools which pose injury risks if improperly used.
- Hair & Makeup:**
Hair and makeup products pose health risks when improperly used. Several tools used in hair and makeup design pose injury risks if improperly used.

Student's Name: _____

I hereby grant permission for my student to receive training and participate in the above activities in their Technical Theatre course and/or extracurricular theatre program.

- I have reviewed the FCPS Technical Theatre Safety handbook and understand that all activities will comply with these guidelines.
- I understand some of the activities of a theatrical technician may expose my student to the risk of injury.
- I understand that Fairfax County School Board does not provide any type of accident or medical coverage for students who participate in extracurricular theatrical production activities. If any injuries occur, school personnel will respond just as they do during the school day and in accordance with the Code of Virginia.

Parent/Guardian Signature

Print

Date

If you have questions concerning this form or any of its contents, please contact your student's theatre teacher.



Community Use Student Technician
PARENTAL PERMISSION FORM

You have been recommended by your theatre teacher to work community use events as a student technician. **This agreement must be signed by you, at least one of your parents/guardians, and your school principal or designated administrator.**

By signing this agreement to work for Fairfax County Public Schools as a student technician you are stating that you will complete all tasks required to be initially hired or to reinstate yourself as an FCPS employee. You are also agreeing to follow all of the guidelines and regulations that dictate the behavior and responsibilities of FCPS employees.

Your work schedule will be determined by your theatre teacher. Your pay band will be determined by your certification level. You will be expected to fill out your own timesheets within the deadlines for approval using the FCPS MyTime system.

Student Technician Name (Printed)

Student Technician Signature

Parent/Guardian Name (Printed)

Parent/Guardian Signature

Administrator Name (Printed)

Administrator Signature

Date

Appendix B: Student Technician, Community Use

The following procedures and forms are required for certification and hiring of student technicians for Community Use events in FCPS schools.

Community Use

Student Technician Job Description

Definition:

A student technician is any currently enrolled FCPS student or graduate hired to provide technical assistance and support for auditorium events. This may include, but is not limited to: programming and operating stage lights, use of microphones and sound system, positioning stage curtains, and access to projector connection. Depending on the needs specified on the **ADDENDUM FOR BUILDING USE RENTAL – TECHNICAL REQUESTS**, more than one student technician may be required.

These students have been recommended by their school's theatre teacher. Student technicians report to the school's program manager for community use. During events, student technicians will be under the supervision of an adult faculty supervisor.

There are two classifications for student technicians:

LEVEL 1

*A Student Technician with a **Level 1 Certification** is able to:*

- Work events at their own school.
- Exhibit professionalism and proper behavior.
- Provide a basic lighting wash on stage.
- Control auditorium house lights.
- Control 1-4 microphones and one additional audio playback device through the auditorium sound system.
- Operate projector and screen.

LEVEL 2

*A Student Technician with a **Level 2 Certification** is able to perform all tasks of a student with a **Level 1 Certification** and:*

- Work community use events at FCPS facilities outside of their own school.
- Create specific lighting looks under direction of the user group.
- Control additional sound inputs including the wireless microphone system.
- Provide and control on-stage monitors for performers and audio output to videographer or audio recording devices.
- Secure wireless microphones to performers.
- Set up and operate the school's Genie lift with another Level 2 Student Technician.
- Access the catwalk area to focus lighting instruments.

Student Technicians will be paid at the appropriate hourly band per FCPS Notice 4630.

Level 1 and Level 2 Student Technician Typical Tasks:

- Receives detailed direction from building scheduler on the needs of the organization.
- Receives onsite direction from assigned Point of Contact (POC) of the organization (or faculty supervisor) of technical needs for the auditorium or other spaces as specified.
- Ensures the user receives all necessary equipment and assistance that was noted when facility rental was approved by program manager.
- Exhibits professionalism and proper behavior.
- Reports any damage to facility or equipment to program manager, no later than the next business day after usage.

Level 2 Student Technician Typical Tasks:

- Ability to use Genie lift (must be certified and have operator's card); second operator must be present to serve as the ground spotter.
- Ability to access catwalk. This requires adult supervision (FCPS employee such as teacher or assigned faculty supervisor) and the adult needs to be able to see the catwalk. A minimum of two student technicians must be present to ensure minimum safety coverage for each other.

Employment Standards:

Currently enrolled Fairfax County Public School student or graduate who demonstrates proper knowledge of the equipment available in the auditorium and has the ability to work with others.

LEVEL 1 STUDENT TECHNICIAN CERTIFICATION CHECKLIST

Student Name: _____

Date: _____

Level 1 Certification Level: Certification

Recertification

Parental permission form is on file at the school:

Part 1 – Assessments

Standard	PASS	FAIL
Achieve 100% on the written FCPS General Safety assessment.		
Achieve 100% on the written FCPS Lighting assessment.		
Achieve 100% on the written FCPS Audio and Projection assessment.		
Obtain Lighting certification by completing the FCPS Lighting practical assessment.		
Obtain audio and projection certification by completing the FCPS Audio and Projection practical assessment.		

Part 2 – Practical

Standard	PASS	FAIL
Identify areas that need to be opened and secured for event.		
Demonstrate operation of all stage curtains.		
Turn house lights on and off.		
Properly power on and shut down the lighting console.		
Bring up basic stage washes.		
Demonstrate proper start-up and shutdown procedure for audio system.		
Set-up and breakdown 1-4 handheld microphones.		

LEVEL 1 STUDENT TECHNICIAN CERTIFICATION CHECKLIST

Standard [cont.]	PASS	FAIL
Operate playback sources [aux cable, laptop, CD player]		
Raise and lower projection screen.		
Turn on, operate, and turn off projector.		

Note: Student will not be certified if they fail any standard.

Student Status:

Level 1 Certified

Recommended to retake

Student Name: _____

Student Signature: _____

Teacher Signature: _____

Date: _____

**Keep a copy of this test in the student's tech certification portfolio.*

LEVEL 2 STUDENT TECHNICIAN CERTIFICATION CHECKLIST

Student Name: _____

Date: _____

Level 2 Certification Level: Certification

Recertification

Parental permission form is on file at the school:

Part 1 – Assessments

Standard	PASS	FAIL
Obtain Level 1 Certification		
Obtain Genie Certification		

Part 2 – Practical

Standard	PASS	FAIL
Demonstrate operation of a powered personnel lift.		
Use winch to lower and raise a batten.		
Locate and safely access the catwalk area.		
Hang and focus lighting instruments.		
Program different lighting looks into submasters or cues.		
Set-up audio stage monitors.		
Manage multiple sound inputs.		

LEVEL 2 STUDENT TECHNICIAN CERTIFICATION CHECKLIST

Standard [cont.]	PASS	FAIL
Manage multiple sound outputs.		
Set-up, operate, and breakdown wireless microphone system, including bodypack microphones.		
Demonstrate proper application of a wireless microphone to clothes or skin.		

Note: Student will not be certified if they fail any standard.

Student Status:

Level 2 Certified

Recommended to retake

Student Name: _____

Student Signature: _____

Teacher Signature: _____

Date: _____

**Keep a copy of this test in the student's tech certification portfolio.*

FCPS Human Resources Student Hiring Process & Procedures

1. Check with school administration regarding appropriate procedures and submit the following documents:
 - HR-8 Intent to Hire form
 - Two hand-signed HR-125 Employment Reference forms or letters of recommendation *(These cannot be written by family members but may be written by teachers, administrators, or previous employers.)*
2. Once the above forms are processed, students will receive an email from “**CareerQuest**” with a link that will take them through the “**Onboarding**” process. Here students will submit a short resume and basic information.

*****Students often think they are finished after the first “Onboarding” step. Ensure students do not miss or skip the remaining steps.*****

3. Once “**Onboarding**” items have been completed and processed, students will receive another email from “**CareerQuest.**” This email will contain an important time-sensitive password for logging into their account. There, they will:
 - submit tax and direct deposit information;
 - watch several required FCPS HR training videos.
4. When the “**CareerQuest**” items have been completed and processed, students will receive a final email that directs them to go to the Gatehouse Administrative Center with the following items:
 - Original Social Security Card
 - Eligibility documentation *(See the Employment Eligibility Verification I-9 Form, List of Acceptable Documents.)*

Students who are over the age of 18 will be fingerprinted at this time.

*****Students may be asked to bring two letters of recommendation. This is not necessary as these are already on file with HR. (See step one.)*****

*****Current high school students do not need a negative TB test, as they already have one on file.*****

5. Once all steps are complete, the student is entered into MyTime. Students will not receive an FCPS badge; they will receive an FCPS email account and an employee identification number that are different from their student email and ID number.
*****Students often forget this new email address and employee number. Ensure students have saved this information in a safe and accessible location.*****

6. Complete an HR-11 for the student, which contains all required information for submitting work hours into MyTime. One copy can go to the student, one should go to your school's Time and Attendance Processor, and a third could be kept on file for your reference.

Appendix C: Safety Calls

“Working Overhead” or “Technician Overhead” – Alerts technicians in the area that someone is working at height. This call can be combined with a location for more accuracy, such as “Working Overhead Upstage Right.”

“Loose Hardware Overhead” or “Loose Tools Overhead” – Combine with location. Alerts everyone in the area that there are loose materials overhead.

“Coming In/Going Out” – Alerts everyone in the area that something will be lowered or raised in the space. Lowering is “Coming In”; raising is “Going Out”. Combine with the batten or piece being flown, such as “First Batten Coming In” or “Scenic Batten Going Out”

“Heads” – This call is only to be used if something is accidentally dropped from height or to alert everyone of a runaway batten.

“Sound” or “Noise” – Used for checking sound cues or other audio levels. Alerts all present during a work shift or technical rehearsal of the incoming noise.

“Loud Noise” – Used for any loud noise associated with other tech work such as hammering, falling set pieces, or saws. Alerts technicians, especially those working at height or on precision work, of the incoming noise.

“Going Dark” – Alerts everyone when all stage and house lights will be going out. Wait for a response before taking the lights out.

“Works Going Out” – Alerts everyone in the area that the work lights are being turned off.

Appendix D: Flat/Platform Suggested Design

Use the following design plans for construction of standard Hollywood flats and platforms.

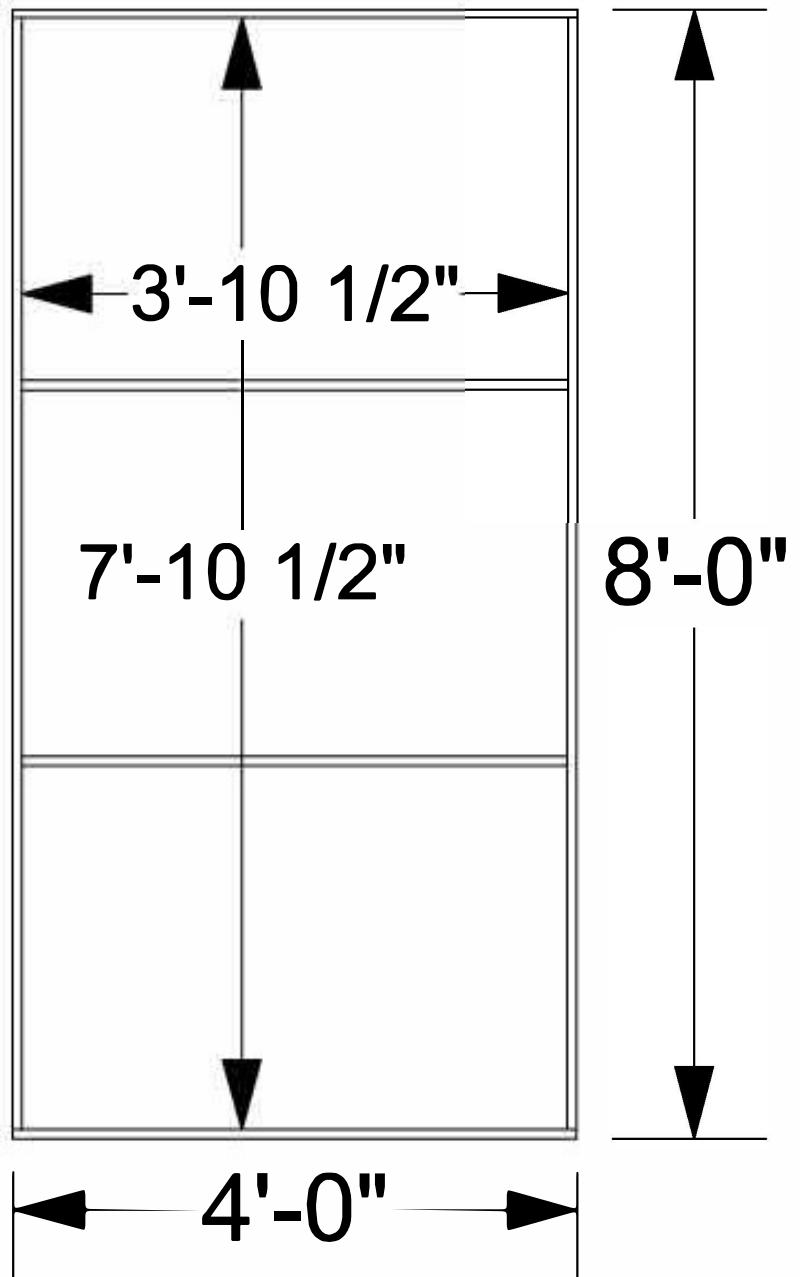
Flat Design

Materials:

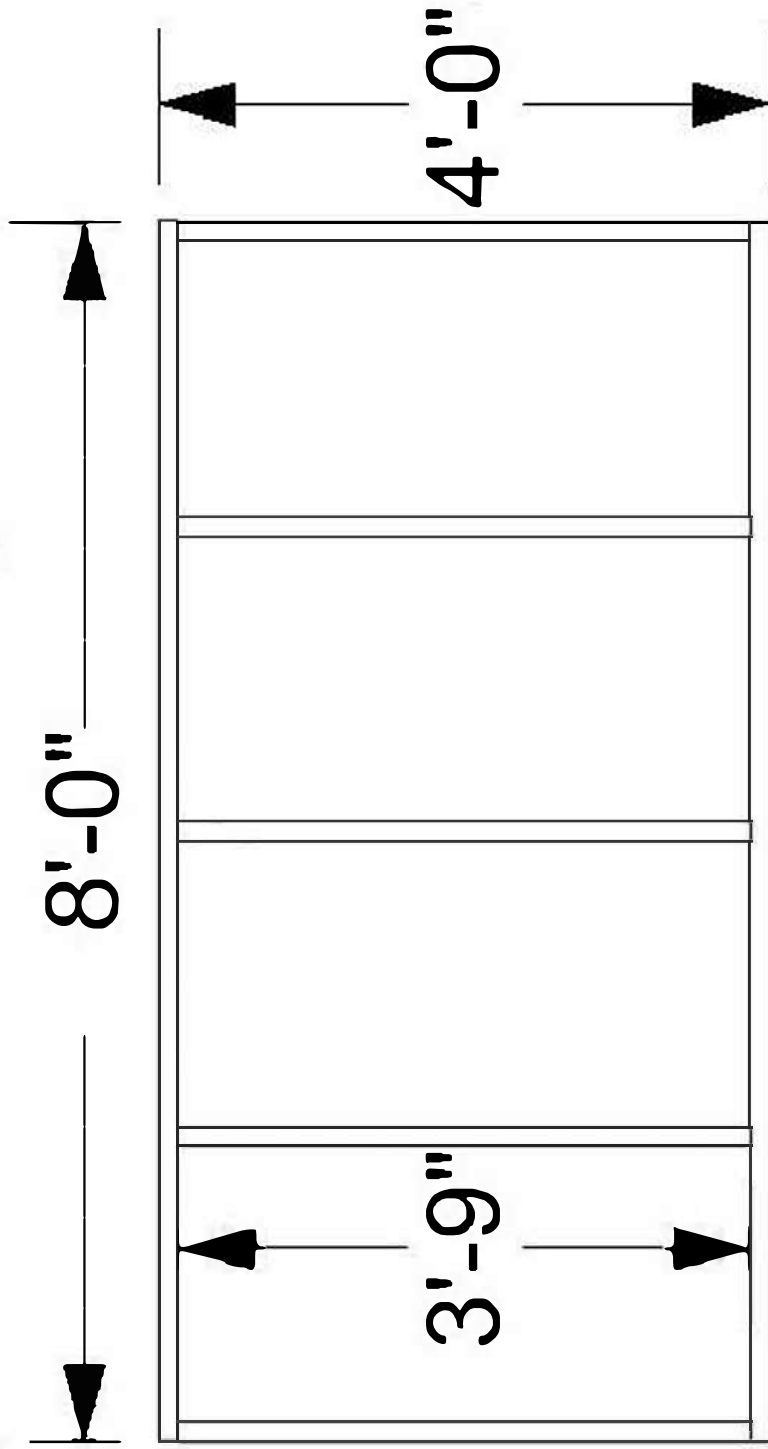
- (2) 1x3 @ 7'10 1/2"
- (2) 1x3 @ 4'
- (2) 1x3 @ 3'10 1/2"
- (1) 1/4" lauan @ 4'x8'

3'10 1/2" toggles
are attached at
32" centers

Use 1 5/8" screws
to attach 1x4s.
Use 3/4" screws
or 1/2" narrow crown
staples to attach
lauan facing.



Platform Design



- Materials:
- (2) 2x4 @ 8'
 - (5) 2x4 @ 3'9"
 - (1) 3/4" plywood @ 4'x8'

3'9" joists are set at 24" centers

Attach 2x4s with 3" screws
Attach plywood top surface with 1 5/8" screws

Appendix E: Theatrical Storage

GENERAL

- Organize stored items in a neat and orderly manner to prevent injury and risk of fire.
- Store items in accordance with Fire Code and the specifications in the *Facilities Safety* section.
- Only keep as many materials as can be used and stored properly.
- Maintain all storage areas and keep them orderly and free of debris.
- Review and assess stored materials and storage practices annually.

CLOTH

- Store cloth in a climate-controlled environment.
- Avoid storing fabrics near heat sources or electrical panels.

HARDWARE

- Keep hardware organized in a dry storage area.
- Dispose of worn or damaged hardware.

LUMBER

- Store lumber in neat horizontal stacks.
- Avoid storing excessive amounts of lumber.
- Remove metal fasteners and hardware from lumber prior to storing.

MAKEUP

- Follow manufacturer's guidelines for storage temperature.
- Check stored makeup for expiration date and contamination prior to use.

PAINT

- Paint cans should not be stacked more than two cans high.
- Ensure that a safety data sheet (SDS) is available for stored paint and other chemicals used. The SDS must be easily accessible in case of injury or accident.

PROPS

- Check electrical cords and plugs on electrical props prior to and after use.
- Ensure prop weapons are stored according to FCPS regulation 8627.
- Store fragile or heavy props with care.

SCENIC ELEMENTS

- Remove extraneous hardware prior to storing flats or platforms.
- Properly brace or secure items stored over six feet high.

Appendix F: Contents of A First Aid Kit

Workplaces vary widely in their degree of hazards, location, size, amount of staff training and availability of professional medical services. The American National Standards Institute (ANSI) and International Safety Equipment Association (ISEA) American National Standard – Minimum Requirements for Workplace First Aid Kits and Supplies (ANSI/ISEA Z308.1) establishes minimum performance requirements for first aid kits and their supplies. The most recent edition (ANSI/ISEA Z308.1-2015) was approved on June 17, 2015, with an effective date one year from that date.

First-aid kits in compliance with this standard will provide a basic range of products to deal with most types of injuries encountered in workspaces.

Administrators and teachers should evaluate workspaces to determine whether additional supplies or kits are needed.

ANSI/ISEA Class A First Aid Kits include:

- 16 - Adhesive Bandages, 1" x 3"
- 1 - Adhesive Tape 2.5 yd
- 1 - Breathing Barrier
- 1 - Cold Pack
- 2 - Eye Covering
- 1 - First Aid Guide
- 2 - Pair Exam Gloves
- 1 - Roller Bandage, 2" x 4 yds
- 1 - Scissors
- 2 - Sterile Pad, 3" x 3"
- 2 - Trauma Pad, 5" x 9"
- 1 - Triangular Bandage, 40" x 40" x 56"

FCPS requires removal of ointments and liquids from first aid kits before they are placed into use. The following items shall be removed from ANSI/ISEA Class A First Aid Kits:

- 10 - Antibiotic Treatment Application, 1/57 oz
- 10 - Antiseptic Applications 1/57 oz
- 1 - Burn Dressing, gel soaked, 4" x 4"
- 10 - Burn Treatment, 1/32 oz
- 1 - Eye Wash, 1 oz.
- 6 - Hand Sanitizer, 0.9g

Retrieved from: Occupational Safety and Health Administration, 2018,
<https://www.firstaidproductsonline.com/osha.aspx>

Appendix G: Non-FCPS Employee Badging Process

Substitute Teachers:

- Submit applicant's full legal name to the school based badging contact.

Returning (badged in previous school year):

- Submit applicant's full legal name to the school based badging contact.

New (not yet badged):

- Complete and submit the following documents to the school based badging contact following school procedures. These forms are available at the link at the bottom of the page.
 - HR-3 - Volunteer or Mentor Application Form
 - In the box labeled "Description and Location" Please write – *"Theatre classrooms or other FCPS spaces as requested by Theatre Teacher."*
 - In the box labeled "Describe any training..." Please write – *"Assistance as requested by Theatre Teacher (including, but not limited to) chaperoning, transportation, helping with theatre productions and activities, and other assistance."*
 - HR-8 - Request to Fingerprint Form
 - Fill in Applicant Information section only.

Fingerprinting:

- Go to the FCPS Gatehouse Administration Center at 8115 Gatehouse Road, Falls Church, VA 22042 for individual fingerprinting service.
- When a group of people require fingerprinting, the mobile fingerprinting service can be scheduled to visit the school, subject to HR department availability. This service is coordinated and scheduled by the badging administrator.
 - All forms must be submitted prior to scheduling.
 - Contact HR to determine if you meet the minimum number of people required.
 - Generally scheduled only once per school year.

Please allow sufficient time for processing paperwork and running background checks. It is also recommended to consider doing large batches once per school year or semester.

Volunteer Badging Link:

<https://www.fcps.edu/get-involved/background-check-volunteers-mentors>

This page can also be found by going to the FCPS Webpage, clicking on the Full Menu tab at the top left of the page in red, and then selecting "Get Involved."

Appendix H: Work Orders

To Submit a Work Order for Lighting/Sound Repairs (RequestIT):

- Click RequestIT icon on your desktop or go to <http://fcpsnet.fcps.edu> (FCPS Intranet site-will only work when connected to FCPS network) and click on “RequestIT” which will take you to the “IT Service Catalog.”
- Use the “Fix My…” drop down to select “Equipment…other” which will take you to the “Fix My Equipment Request” screen.
 - Site- your school
 - Desk Location- where the equipment that needs to be fixed is located
 - Notes- describe the problem or repair needed
 - Add “Please escalate to Andrew Redmon in Field Services”
 - Urgency- indicate urgency of request
 - Barcode- enter 10 zeros. Theatre equipment is not in ACIS (The computer barcode system)
 - Click submit.
 - After ticket has been submitted, send an email to school TSPEC or SBTS communicating that a RequestIT ticket has been submitted for auditorium/ theatre equipment and needs to be escalated to Field Services.

To Submit a Work Order for Facility Repairs:

- See building administrator for RequestLine submission.

To Submit a Warehouse Transfer Request:

- Larger items may be transferred between schools via a Warehouse Request made through the building administrator.

Sound/Event Support Requests:

- Go to <http://fcpsnet.fcps.edu> (FCPS Intranet site-will work only when connected to an FCPS network).
- Click on “A-Z Index” and scroll down to “E” for “Event Support”.
- Click on the “Request Service” button.
- Read and complete all information needed.

If an event takes place outside of normal business hours (M-F 7:00AM-3:30PM), a fund code must be included on the request to cover the \$50 per hour technician fee.

IT Service Desk: 703-503-1600

- Call if an emergency repair is needed outside of normal business hours (M-F 7:00AM-3:30PM).

Appendix I: Borrowed Items

INVENTORY – For all borrowed items, both departments (owner and borrower) should create an agreed upon itemized inventory list. The list should include the date borrowed, date to be returned, and contact information of the borrower, along with any pertinent notes regarding the safety status of the items (broken, damaged, or missing parts).

INSPECTION – All items should be inspected prior to use. Borrower must communicate the request for potential adjustments or modifications.

COSTUMES – Borrowed costumes should be laundered or dry-cleaned prior to use, and prior to return. Any alterations should be restored prior to return unless otherwise approved by the owner.

WIGS & MAKEUP – For sanitary reasons, wigs should be loaned and returned in individual sealed plastic bags. Single-use applicators must be used for borrowed makeup as described in the shared makeup specifications in the *Hair and Makeup* section.

PROPS & SCENIC ELEMENTS – Use items at your own risk. Modifications must be pre-approved by the owner. Larger items may be transferred between schools via a Warehouse Request made through the building administrator.

LIGHTING & SOUND – Lighting and sound equipment and accessories should be properly transported, used, and stored.

RETURN – The owner should inspect all items upon return. The borrower is expected to communicate to the owner any items that were damaged, lost, or modified without approval of the owner. The borrower is expected to reimburse the owner or replace these items in a timely manner.

Appendix J: Theatrical Vendors and Suppliers

Theatrical Flying:

- Flying by Foy- www.flybyfoy.com *
- ZFX- www.zxflying.com *
- Vertigo- www.getvertigo.com *

Theatrical Curtains:

- Artistic Concepts Group- www.artisticconceptsgroup.com *
- Baron Stage Curtain & Equipment Company- www.baronstage.com *
- LuXout Stage Curtains- www.luxout.com *

Theatrical Equipment and Supplies:

- Artistic Concepts Group- www.artisticconceptsgroup.com *
- Barbizon Lighting- www.barbizon.com
- Rosebrand- www.rosebrand.com

Theatrical Sound Equipment:

- Artistic Concepts Group- www.artisticconceptsgroup.com *
- Lee Hartman & Sons- www.leeheartman.com *
- Sweetwater- www.sweetwater.com
- Philadelphia Theatrical Supplier- <https://www.ptsonline.biz>

Technical Theatre Software:

- Vectorworks- www.vectorworks.net/en *
- Lightwright - <https://www.mckernon.com>
- QLab- <https://figure53.com/qlab>
- Audacity- www.audacityteam.org

* designates a FCPS approved vendor, program, or an established contract.
If there is an established district contract, preference should be given to that vendor
when purchasing.

Appendix K: Applicable FCPS Policies, Regulations, and Notices

FCPS Policies, Regulations, and Notices are updated periodically. Ensure you are in compliance with the most current regulations.

Regulation 2601- FCPS Students Rights and Responsibilities:

www.boarddocs.com/vsba/fairfax/Board.nsf/goto?open&id=867SKG2A8CCC

Regulation 5922- Student Fees:

[www.boarddocs.com/vsba/fairfax/Board.nsf/files/B38K484FBDE3/\\$file/R5922.pdf](http://www.boarddocs.com/vsba/fairfax/Board.nsf/files/B38K484FBDE3/$file/R5922.pdf)

Regulation 8615- School Safety Manual:

[www.boarddocs.com/vsba/fairfax/Board.nsf/files/AHZLJB55F948/\\$file/R8615.pdf](http://www.boarddocs.com/vsba/fairfax/Board.nsf/files/AHZLJB55F948/$file/R8615.pdf)

Regulation 8626- Use of Open Flame and Pyrotechnic Special Effects:

[www.boarddocs.com/vsba/fairfax/Board.nsf/files/A28RAD566A66/\\$file/R8626.pdf](http://www.boarddocs.com/vsba/fairfax/Board.nsf/files/A28RAD566A66/$file/R8626.pdf)

Regulation 8627- Use of Theatrical Stage Prop Weapons:

[www.boarddocs.com/vsba/fairfax/Board.nsf/files/A28PEQ535F3A/\\$file/R8627.pdf](http://www.boarddocs.com/vsba/fairfax/Board.nsf/files/A28PEQ535F3A/$file/R8627.pdf)

Regulation 8628- Donations to Schools:

[www.boarddocs.com/vsba/fairfax/Board.nsf/files/B3NKL250BCBD/\\$file/R5961.pdf](http://www.boarddocs.com/vsba/fairfax/Board.nsf/files/B3NKL250BCBD/$file/R5961.pdf)

Regulation 8633- Fires, Fire Alarms, Fire Drills, and Fire Safety Manual:

[www.boarddocs.com/vsba/fairfax/Board.nsf/files/AHK2B7730BFD/\\$file/R8633.pdf](http://www.boarddocs.com/vsba/fairfax/Board.nsf/files/AHK2B7730BFD/$file/R8633.pdf)

Appendix L: Middle School Reference Resource

How to Use: Middle school teachers and students shall utilize the entire *FCPS Technical Theatre Safety* handbook in all performing arts spaces. Specific middle school indicators and information for technical theatre instruction, practice, and appropriate use is found below.

Middle school teachers should include the following statement in their Technical Theatre Appreciation syllabi and extracurricular Technical Theatre production contract:

Some technical theatre activities may expose students to the risk of injury. In order to participate in technical theatre work, middle school students must complete the appropriate training and pass Middle School Theatre Arts General Safety Assessment and other applicable assessments according to the guidelines of the FCPS Technical Theatre Safety handbook.

AUTHORIZED	SUPERVISION	REFERENCE
Ladders: A-frame, Platform, Twin	Direct Supervision	Overhead Safety
Hot Glue Guns	Direct Supervision	Tools
Powered Screwdriver <i>*may use tool but not use with a drill bit attached.</i>	Direct Supervision	Tools
Impact Driver	Direct Supervision	Tools
Non- Powered Hand Tools	Adult Supervision	Tools
Spray Paints and Adhesives	Direct Supervision	Paints and Other Chemicals
Sound Board	Adult Supervision	Audio
Light Board	Adult Supervision	Lighting
Sewing Machine	Adult Supervision	Costumes
Loft Access	Teacher Discretion	N/A
Curtain Operation	Adult Supervision	Facilities Management
Chemical Fog Machine	Adult Supervision	Special Effects

UNAUTHORIZED
Catwalk Access
Use of Powered Rotary Cutting Tools: Dremel, Router
Use of All Powered Saws: Panel, Reciprocating, Jigsaw, Portable Band Saw, Miter
Winch Operation
Use of Powered Sanders
Use of Powered Drills <i>*can only be used with screw bit, not for drilling</i>
Adjustment of Lighting Fixtures at Height
Use of Powered Lifts