



NATIONAL STAR FEST

SCHOOL THEATRICAL ARTS RECOGNITION

Tech Olympics Guide

Tech Olympics offers a fun, competitive, educationally sound environment that showcases the skills and talents of young theatre technicians. Each event is designed to demonstrate the techniques and practices used in the professional theatre industry. All events include a stopwatch for time-keeping purposes. Please be sure to review rules and procedures carefully.

Event Overview

Costume Quick Change	A three-person team must efficiently change an actor's costume within five minutes, following specific dressing techniques and rules
Fold a Drop	A four-person team folds a theatrical backdrop neatly and correctly into a 2-3 foot square within five minutes
Prop Shift	A two-person team has three minutes to swap Act 1 props for Act 2, ensuring proper placement and handling
Cable Roll-up Relay	A four-person team has three minutes to roll and store cables using the "over/under" technique, ensuring neatness and proper sequence
Leg a Platform	A two-person team attaches and removes legs from a 2'x4' platform, ensuring proper hardware placement and sequence in five minutes or less
Thread a Sewing Machine	An individual must correctly insert a bobbin and thread a sewing machine in under two minutes
Hang and Focus a Lighting Instrument	An individual hangs, focuses, gels, and secures an ETC Source 4 spotlight within 5 minutes, following specific sequence and safety procedures
Knot Tying	An individual has two minutes to tie a series of knots (clove hitch, half hitch, sheet bend, and bowline) with correct technique and minimum 6" tail

Costume Quick Change

- Maximum time allotted: 5 minutes
- Three-person team event
- Two participants act as 'wardrobe crew' and execute the quick change. Third participant acts as the 'actor.'
- Wardrobe crew has 20 seconds to prep before actor is released from start box
- Actor enters even if wardrobe crew is not ready

Materials	Rules	Penalties
• Two (2) full costumes (designed to be one size fits all) including accessories • Table for accessories • Costume rack • Hangers • Tape (for marking table accessory layout and start box) • Stopwatch	1. Properly snap, hook, and lace all clothing items 2. Dress actor in all appropriate accessories 3. Be polite, professional, and treat actor with respect at all times 4. Do not drop hangers or other items 5. Follow specified sequence	• +5 seconds per item Items not properly placed on actors • +10 seconds Lack of teamwork

Required Sequence

1. Time begins when wardrobe crew leaves the start box and begins prepping.
"Puddling of costumes" (placing of pants and shoes on the floor so actor can step into them quickly) and "reverse dressing" (turning a shirt inside out, so actor can place their arms in sleeves, grab hands of actor, and pull costume over actor's head and onto their arms at the same time) are acceptable
2. Actor is released from the start box to the quick change box. The actor should be fully dressed in Scene 1 outfit
3. Wardrobe crew assists actor out of Scene 1 outfit: undo fastening, help lift costume over the head or off the arms. *Note: Actor can help unbuttoning, stepping out, removing shoes, etc. but only if wardrobe crew requests*
4. Assist actor into Scene 2 outfit: do fastenings completely, and put on hats or accessories
5. Wardrobe crew returns to start box with all Scene 1 costume pieces in hand. *Note: Costumes do not have to be rehung to end the event*

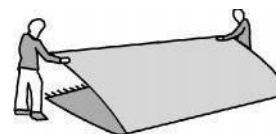
Fold a Drop

- *Maximum time allotted: 5 minutes*
- *Four-person team event*
- *Fold a theatrical backdrop, leg, or teaser for storage. Drops are laid out flat on stage floor, team members each take a corner to fold the drop and check for the crispness of each fold or pleat*

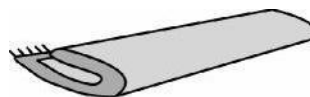
Materials	Penalties
• One (1) large theatrical drop • Tape (for marking start box, finish box, and field of play) • Stopwatch	• +5 seconds Folded off-center • +5 seconds Messy folds or pleats • +5 seconds Drop does not fit into the sizing template
Required Sequence	

1. Leave the start box.
2. Make sure the drop is wrinkle-free, find centerline.

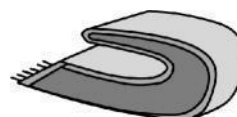
3. Make the first fold. The team must fold the **pipe pocket** (lower corners) to the **webbing** (upper corners). The drop should be folded to the tie lines, with the label plainly visible.



4. Fold the drop again from the lower edge to the webbing, smoothing wrinkles.
5. Continue folding until the width is approximately 3 feet, smoothing wrinkles and creases.



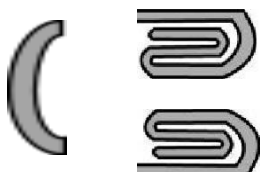
6. Fold hemmed edges toward the center, leaving 1' to 1'6" space for the final book fold.



7. Repeat, until the backdrop can be folded into a square of 2 to 3 feet.



8. Fold the two halves of the drop back on themselves, creating a book-like shape with one open end.



9. Move the folded drop onto the sizing template box taped on the floor
10. Team returns to the start box and says, "Done!"

Prop Shift

- *Maximum time allotted: 3 minutes*
- *Two-person team event*
- *Change a set quickly and efficiently and creatively insert their “character” into the scene*
 - *Onstage table will be set for Act 1 (tablecloth, plates, utensils, etc.) with spike marks under the tablecloth for Act 2 props*
 - *Offstage table will be taped with Act 2 props including plates, cups, utensils, etc.*

Materials	Rules	Penalties
• Two sets of props (i.e., tablecloth, utensils, plates, vase with flowers, etc.) • Props table (offstage) • Dining table or similar (onstage) with a tablecloth, markings for the first setting, and spike marks for the second setting • Tape • Stopwatch	1. Must not drop props or place them in pockets 2. Move quietly and efficiently 3. Must not roughly handle or be careless with props 4. Place tablecloth straight, with no corners flipped, and in the proper orientation, upstage/downstage 5. Place items correctly and right-side up 6. Follow specified sequence	• +5 seconds Carelessly handling props/set pieces • +5 seconds Setting props in the wrong position

Required Sequence

1. Leave the start box.
2. Clear Act 1 props and set.
3. Place Act 1 props in the preset marks on the offstage table and scenery pieces on the taped marks on the floor.
4. Take Act 2 props from offstage table and set on the Act 2 spike marks on the onstage table.
5. Once set, return to the start box for time to stop.

Cable Roll-Up Relay

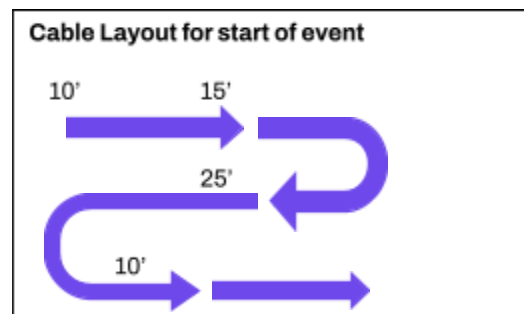
- *Maximum time allotted: 3 minutes*
- *4-person team event*
- *All cables will be in one continuous run, beginning with a 10' cable, connected to a 15' cable, connected to a 25' cable, connected to a 10' cable.*
 - *For ease of restoring the connection sequence, the cable connection points will be labeled with a piece of tape on the floor showing the length of the next connected cable.*
 - *The cables used for this event are power cables, although sound or DMX cables may be used as a variation on the event.*
- *The team gets two tries*
- *Judging is based on neatness, size of coil, and proper location*



Materials	Penalties
• 4 Extension Cords* • 2 10' Cords • 1 15' Cord • 1 25' Cord • Table for "storage" of cords • Masking tape • Stopwatch *Cords should be marked as described below, and each cord should have a piece of tie line at the female end.	• +15 seconds Rolling cable over arm • +10 seconds Messy and inconsistent roll size, each instance • +5 seconds Cables not properly secured • +5 seconds Failure to follow proper sequence

Required Sequence

1. Judge says "Start"
2. Person in the next participant spot proceeds to first cable connection point
3. They disconnect the cable, roll it up properly using the "over/under" rolling technique, secure it using tie line or Velcro, and place it in the designated storage spot.



Note: Cables are connected at start of event

Over/Under Coiling Technique

- Hold one end of the cable in your receiving hand, and grab another part about 2' farther down the cable.
 - Make the first coil normally, by bringing your hands straight together and accumulating that coil in your holding hand. Rotating both wrists slightly counterclockwise will help the cable bend the right direction. Let the cable spin in your hands to form a nice round first loop.
 - Grab another piece 2' away, but as you bring this one in, rotate your wrist clockwise to invert the loop as it forms. It helps to roll the cable slightly between your thumb and fingers to better guide it into laying the right way. If the loop starts to twist or tries to figure-eight as it forms, twist the cable in your fingers to help to flatten out the loop.
 - Add this inverted loop to your bundle. The part that reaches the floor should pass under the loop you're making. This is your first "flipped" loop. It may look and feel off, but this is exactly what you want. Look carefully at the rest of this cable going toward the floor. You may be able to tell that its twist will lend itself to coming up in a "normal" non-flipped loop. Reach for the next section, and make another straight-in loop.
 - Next make another flipped loop. Grab the next section, and rotate your wrist to invert the coil underneath. Add it to the bundle.
 - Then make another straight-in loop, then an under loop, etc. Keep going that way — over, under, over, under — until the cable is finished.
4. Participant tags the next participant to begin and proceed back to the starting box
 5. Continues until the last cable is rolled and stored and the last participant is in the starting box.



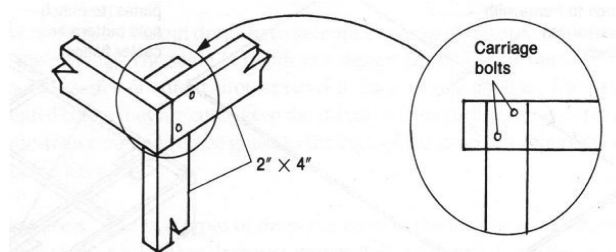
Leg a Platform

- *Maximum time allotted: 5 minutes*
- *2-person event*
- *One pair per team. Each team is allowed two attempts.*
- *One platform is available, and the pair must attach two legs and remove two legs, leaving the platform ready for the next team.*
 - *Two legs are bolted to the platform and two are not*
 - *Platform is 2'x4', framed with 2x4"s with a 2x4" leg for each corner*
 - *Leg holes are drilled slightly larger than the 3/8" bolts used to attach them to platforms*
- *Ratchets and wrenches are on the table at the start line*

Materials	Penalties
• 1 2'x4' platform • 4 2"x4" legs, pre-drilled for 3/8" bolts • 24 3/8" hex bolts (2 bolts per leg plus extras) • 24 washers (2 washers per bolt, plus extras) • 16 3/8" nuts (1 nut per bolt, plus extras) • 2 ratchets with sockets • 2 open-end/box-end wrenches • Table • Stopwatch	• +10 seconds Placing things in mouth • +10 seconds Inaccurate hardware sequence per incident • +5 seconds Failure to follow proper sequence • Loose legs ○ +5 seconds Slight wiggle ○ +10 seconds Medium wiggle ○ +15 seconds Very loose wiggle • Blatant disregard for safety Disqualification • Blatant disregard for rules/procedures Disqualification

Required Sequence

1. Both team members leave the start line.
2. Each member picks up a wrench and a ratchet from the table.
3. Each member attaches a leg. Hardware sequence should be bolt, washer, wood frame of platform, 2"x4" leg, washer, nut (on inside of platform).
4. Pair uses the same tools to remove the other two legs.
5. Removed legs and hardware should be placed in the corners of the platform from which they were removed.
6. Pair returns to the finish line and one says, "Done!"



Thread a Sewing Machine

- *Maximum time allotted: 2 minutes*
- *Individual event*
- *Two people per team can try this event, and each team is allowed two attempts.*
- *Each participant will insert a wound bobbin into the bobbin housing of a sewing machine and properly thread the machine to pull the bobbin thread up through the stitch plate.*



Materials	Penalties
• Sewing machine* with needle, thread spindle cap, and bobbin housing in place • Bobbins wound with thread • Spools of thread • Scissors • Stopwatch	• +5 seconds Careless handling of equipment • +5 seconds Incorrect threading sequence • +5 seconds Incorrect insertion of bobbin into housing

Required Sequence

1. Leave the starting line.
2. Remove bobbin housing cover.
3. Insert the bobbin into the bobbin housing with thread, unwinding counter-clockwise.
4. Remove thread spool cap, and place thread on spindle.
5. Replace thread cap, and thread the machine following the thread guide on the machine.
6. Thread the needle.
7. Turn the flywheel, and pull the bobbin thread up through the sewing plate on the machine.
8. Pull thread under the pressure foot to the back of the machine.
9. Replace bobbin housing cover.
10. Return to the starting line to stop time.

Hang and Focus a Lighting Instrument

- *Maximum time allotted: 5 minutes*
- *Individual event*
- *Two people per team can try this event. Each team is allowed two attempts.*
- *Participants must successfully hang and focus an ETC Source 4 ellipsoidal spotlight.*
- *All equipment and tools will be provided, but participants may provide their own adjustable crescent wrench.*

Materials	Rules	Penalties
• Light Stand • ETC Source 4 ellipsoidal with three-prong Edison plug or pin connector • Female pin connector to male Edison plug convertor, if needed • Safety cable attached to yoke of ellipsoidal • Gel frame with pre-cut gel • Adjustable crescent wrench with tether • Extension cords • Masking tape • Table • Stopwatch	1. Must use adjustable crescent wrenches—no speed wrenches 2. Must tether their wrench when it is out and put it in a pocket when not in use 3. All wrenches must be attached to an 18" minimum tie line 4. Items should never be tethered around a participant's neck or over the shoulder 5. May not carry gel frames in a pocket 6. Must provide the sharpest possible focus of the fixture	• +10 seconds Placing items in mouth • +10 seconds Dropping items or placing them on the ground • +10 seconds Removing gloves early • +10 seconds Items tethered around neck • +10 seconds Gel frame not installed properly or at all • +5 seconds C-clamp opening not facing installer • +15 seconds Instrument hung upside down • +10 seconds Safety cable not used properly • +10 seconds Any item not tightened • +5 seconds Shutter cut inside or outside 2" tape lines • +10 seconds Failure to follow sequence • +5 seconds Focus is not sharp • Disqualification Blatant disregard for the rules

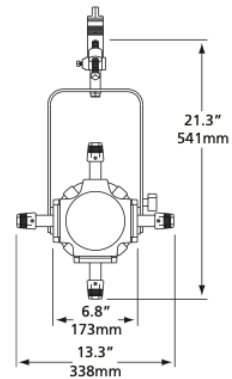
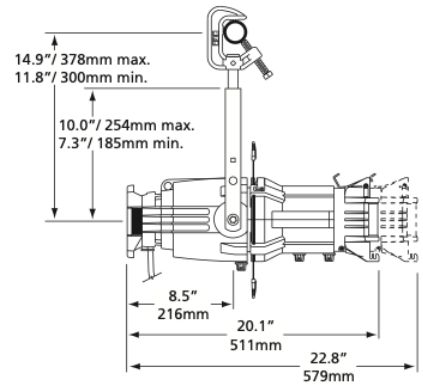
Note: The safety cable should be on the side of the instrument closest to the light stand upright to keep it from falling off after being clipped.

When the unit is secured properly to the pipe, powered on, correctly focused to the shape marked out on the wall, and gelled, then the event has been successfully completed. The ETC Source 4 ellipsoidal has a drop-in iris slot on the top of the fixture. The gel clip holder should also be on this side of the fixture. The gel clip holder needs to be on top of the fixture when it is focused. Not all ellipsoidal fixtures have gel clip holders.

[Watch this video for a demonstration](#)

Required Sequence

1. Have gloves on and wrench in hand prior to start time.
2. Leave the starting line on the judge's call.
3. Locate the fixture.
4. Hang the fixture.
5. Hand-tighten the C-clamp.
6. Install the safety cable.
7. Wrench-tighten the C-clamp.
8. Open the shutters on the fixture.
9. Plug the fixture into power.
10. Position the fixture to illuminate the shape.
11. Lock the fixture by loosening and tightening the pan screw on the C-clamp or the rotation knob, as necessary.
12. Place the fixture in a sharp focus.
13. Make shutter cuts, as necessary. Cuts must land on or within the 2" tape outline.
14. Review fixture focus and make adjustments, as necessary.
15. Insert gel frame.
16. Return to starting line.
17. Assist judges in restoring all equipment to pre-event conditions.



Hanging an ETC Source 4 Ellipsoidal Spotlight

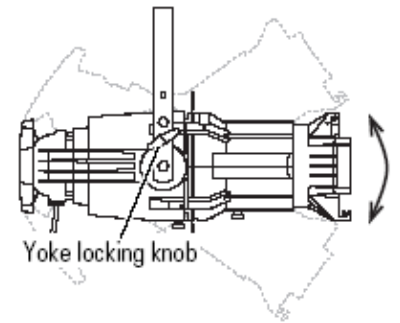
1. Place **C-clamp** over the pipe at the designated hanging location. The opening of the C-clamp must face downstage of the electric pipe and toward the person installing the fixture, enabling unobstructed access to bolts.
2. Finger tighten the pipe bolt.
3. Attach the **safety cable** through the **yoke** and around the electric pipe.
4. Tighten the pipe bolt and adjust the C-clamp, as necessary, so that it is secure on the electric pipe. Pipe bolt should be no tighter than a quarter turn past 'finger-tight.'
5. Pull all shutters on the fixture to open.
6. Plug the **tail** of the lighting instrument into the designated **circuit**.

Focusing an ETC Source 4 Ellipsoidal Spotlight

1. Adjust the **pan** of the unit so that it is set in the desired location.
2. Adjust the **tilt** of the unit so that it is set in the desired location.
3. **Focus** the **beam** to the desired beam edge.
4. Using the **shutters** and the rotation knob, as necessary, and adjust the beam to the desired shape and angle.
5. Make sure all nuts, handles, and knobs are tightened so the instrument does not **drop focus**.
6. Drop **color gel frame** into the color slot of the instrument.

Setting the Angle Within the Yoke

1. Loosen the yoke locking knobs. Do not remove them.
2. Tilt the fixture to the desired position.
3. Tighten the yoke, locking knobs to secure the fixture in position.



Focusing the Beam

1. Loosen the beam focus knob located under the barrel.
2. Slide the lens tube forward or backward to achieve the desired beam edge.
3. Once the fixture is focused, tighten the beam focus knob.

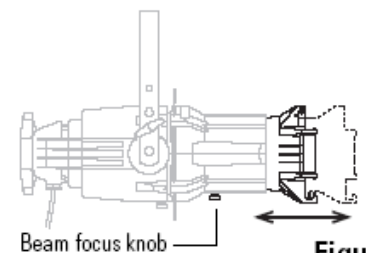


Figure 4

Rotating the Angle Within the Fixture

1. Loosen the rotation locking knob. Do not remove it.
2. Rotate the barrel of the fixture left or right to the desired position.
3. Recheck the focus of the beam for sharp or soft focus, then tighten the rotation locking knob to secure the fixture in position.



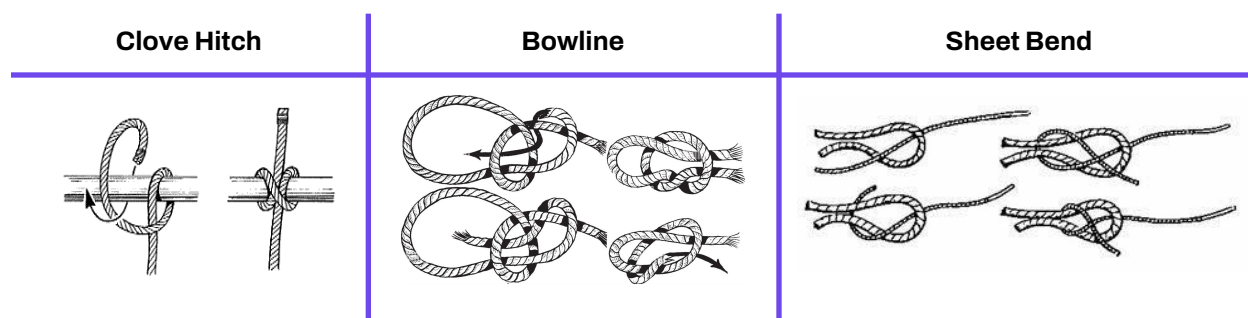
Knot Tying

- *Maximum time allotted: 2 minutes*
- *Individual event*
- *Two people per team can try this event. Each team is allowed two attempts.*
- *Individuals must correctly tie a series of commonly used knots for properly rigging scenery.*
- *Participants must tie knots correctly with a minimum of a 6" tail on all knot ends.*
- *Task is completed when the contestant signals with hands up.*

Materials	Penalties
• Theatrical Grade Rope (2'-3' long with a circumference between 2" - 4") • T-bar pipe, rolling costume rack, or other pipe to tie onto	• +5 seconds Placing rope in the mouth • +2 seconds Failed knots or incorrectly tied knots (penalty for each) • +2 seconds Not having a minimum of 6" tail on all knot ends • +2 seconds Outside bowline: tail on outside of loop • +2 seconds Backward sheet bend–tail on opposite sides • +5 seconds Failure to follow the sequence • Disqualification Blatant disregard for rules

Required Sequence

1. Leave the starting line
2. Tie a clove hitch on the pipe stand.
3. Tie a half hitch—a locking knot—on the clove.
4. Tie a second line to the first with a sheet bend—a tailor's knot. Participants must put the tails for the sheet bend on the same side.
5. Use the end of the second line, and tie a bowline.
6. Participants must put the tail for the bowline on the inside of the loop.
7. Contestant signals with hands up.



FAQs

Can judges help participants during the event?

Participants can ask questions of the judges in each event to help clarify rules or procedures before they compete, but that is not the time to ask for instructions or assistance completing the task.

Can participants watch other Tech Olympic events?

Participants are strongly encouraged to watch, cheer for, and support other teams during the competition.

How will participants know their times?

Times for each participant will be announced when he or she has completed his or her attempt. Participants are welcome to ask the judge of an event, “What is the time to beat?” However, it is not appropriate for a participant to ask the specific time of another competitor.

Who do I contact if my students or I have questions or need clarification on Tech Olympics events?

Email craig@educationaltheatre.ca