

PA State Thespian Conference

Tech Challenge Information 2026-2027

*adapted from the International Thespian Tech Challenge Guidelines from
the Educational Theater Association.*

The PA Thespian Festival's Tech Challenge is a fun, high-energy, Olympic-style contest of technical theatre skills and knowledge. The challenge consists of five events that represent basic skills that every theatre technician should possess. The requirements for each event were designed by professionals, educators, and the Educational Theatre Association (EdTA) staff. Use this guide to help your team(s) prepare for competition at the PA State Thespian Conference.

Teams

Tech Challenge teams can have up to eleven (11) members. See the individual event descriptions for details on how many people can participate in each event. Some events are for individuals only; some are for pairs or groups.

Scoring

Scoring is based on the time it takes each team to successfully complete each event. However, the overall time is not the only factor in scoring. Time penalties can be added for teams who disregard the recommended procedures outlined in this guide. These penalties ensure that no team can rely on speed alone and still win. Care must be taken to follow proper procedures. Teams who show a continued blatant disregard for procedures may be disqualified from the Tech Challenge. Each team will be ranked in each event based on time (including penalties), and these ranks will be tallied to determine the winners.

Execution of Challenges

EdTA recognizes that there are a variety of methods and materials used to execute the tasks necessary to complete each event. The methods described in this guide have been developed by experienced theatre technicians, and participants are expected to follow the instructions outlined here. Teams will be scored according to these procedures, whether or not their school or theatre program employs alternate procedures.

Sportsmanship

First and foremost, the Tech Challenge is meant to be a fun demonstration of each team's technical theatre skills. All teams are required to show good sportsmanship, which means being respectful and supportive of other teams. Cheer each other on and root for each team's success so that everyone can have a good time. Teams showing good sportsmanship may be rewarded with bonuses (time deductions), while teams showing poor sportsmanship may receive penalties (time additions). If poor behavior becomes an ongoing issue, a team may be disqualified from the challenge.

Safety

All participants must wear closed-toed shoes on the event floor. If the judges determine a student is not wearing appropriate footwear, the student will not be allowed to compete.

General Information

Up to Eleven (11) students are allowed per team. A school may enter two (2) teams in the PA Thespian Conference Tech Challenge.

- The true spirit of Tech Challenge is to offer a fun, competitive, educationally sound environment that showcases the skills and talents of young theatre technicians. Each event is designed to demonstrate as closely as possible the techniques and practices used in the professional theatre industry.
- Participants should feel free to ask questions of the judges in each event to help clarify rules or procedures before they compete. However, that is not the time to ask to be taught how to do an event. Participants are also strongly encouraged to watch, cheer for, and support other teams during the competition.
- Times for each participant will be announced when he or she has completed their 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.

Scoring:

- Each team's best time for each event will be added together to determine the total time. Total time will be used to determine the overall team ranking for the Tech Challenge.

Number of participants & attempts per event:

Event	# of participants	# of attempts
Costume Quick Change	2-person team	2 attempts
Fold a Drop	6-person team	2 attempts
Prop Shift	2-person team	2 attempts
Lighting Hang & Focus	2 individuals per team	2 attempts each person
Cable Roll-Up Relay	4-person team	2 attempts

The 2022-23 PA Thespian Tech Challenge events will be:

1. Costumes: [Quick Change](#) (2-person team event)
2. Lighting: [Hanging And Focusing a Source 4](#) (2 individuals' event)
3. Crew: [Prop Shift: Strike and Set Up Props](#) (2-person team event)
4. Set/Scenic: [Fold a Drop](#) (6-person individual event)
5. Sound: [Cable Roll-Up Relay](#) (4-person team event)

EVENT DETAILS: Costume Quick Change

Staff Needed:	1 timer / score recorder 1 actor 2 set up +1 adult staff (<i>Could also do one of the other jobs</i>)
Equipment/ Materials Required per Station	● 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
# of Participants:	Two-Person Team Event
# of Attempts:	2 Attempts
Maximum Time:	5 Minutes

Two participants act as the wardrobe crew and execute the quick change.

The “actor” will be provided by the state festival

The wardrobe crew will have up to 20 seconds for prep before the actor is released from the start box. The actor will enter even if wardrobe crew is not ready.

Rules

1. Participants must properly snap, hook, and lace all clothing items.
2. Participants must dress actor in all appropriate accessories.
3. Participants must be polite and professional and treat the actor with respect at all times.
4. Participants must not drop hangers or other items.
5. Follow the sequence and additional instructions below.
6. The maximum time allotted for this event is five (5) minutes.

Required Sequence

1. Time begins when wardrobe crew leaves the start box and begins prepping. Standard conventions like “puddling of costumes” * and “reverse dressing” ** are acceptable quick-change techniques.
**Puddling costumes refers to the placing of pants and shoes on the floor so an actor can step into them quickly.*
***Reverse dressing occurs when a dresser turns a shirt inside out, places his or her arms in sleeves, grabs the hands of the actor, and pulls the costume over the actor’s head and onto his or her arms at the same time.*
2. After 20 seconds, the actor is released from the start box to the quick-change box. The actor will be fully dressed in the Scene 1 outfit.
3. Wardrobe crew to assist the actor out of the Scene 1 outfit: undo fastening, help lift costume over the head or off the arms. *Note: The actor can help unbuttoning, stepping out, removing shoes, etc. but only if the wardrobe crew requests.*
4. Assist the actor into Scene 2 outfit: do fastenings completely and put on hats or accessories.
5. Once set, the wardrobe crew returns to the start box with all Scene 1 costume pieces in hand. (Note: Costumes do not have to be rehung to end the event.)

Penalties: Costume Quick Change

Items not properly placed on actors	+5 seconds per item
Lack of teamwork	+10 seconds

EVENT DETAILS: Hang and Focus a Lighting Instrument

Staff Needed:	1 timer / score recorder 2 set up +1 adult staff (<i>could also do one of the other jobs</i>)
Equipment/ Materials Required per Station	● 2 Light Stands ● 2 ETC Source 4 ellipsoidal with three-prong Edison plug or pin connector ● 2 Female pin connectors to male Edison plug convertor if needed. ● 2 Safety cables attached to yoke of ellipsoidal ● 2 Gel frame with pre-cut gel ● 2 Adjustable crescent wrenches with tether ● 2 Extension cords ● 2 Masking tape rolls ● 2 Table ● 2 Stopwatches
# of Participants:	Two-Person Individual Event
# of Attempts:	2 Attempts
Maximum Time:	5 Minutes

Event: Hang and Focus a Lighting Instrument*Individual Event*

Two people per team can try this event, and each one gets two tries.

Participants will be asked to successfully hang and focus an ETC Source 4 ellipsoidal spotlight. All equipment and tools will be provided, but participants can bring their own adjustable crescent wrench.

Rules

1. Participants must use adjustable crescent wrenches. No speed wrenches.
2. Participants must tether their wrench when it is out and put it in a pocket when not in use. All wrenches brought must be attached to an 18" minimum tie line tether when in use. Items should never be tethered around a participant's neck or over the shoulder.
3. Participants must not carry gel frames in a pocket.
4. Participant must provide the sharpest possible focus of the fixture.
5. Follow the sequence and additional instructions below.

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.

For a video demonstration with some slight variations in sequence, visit <http://www.youtube.com/watch?v=OPsv-jvXzc8>.

How to Hang an ETC Source 4 Ellipsoidal Spotlight

1. Place the **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 the shutters in the fixture to open.
6. Plug the **tail** of the lighting instrument into the designated **circuit**.

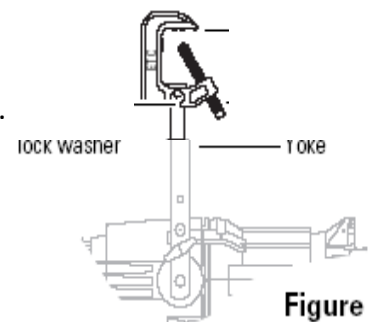


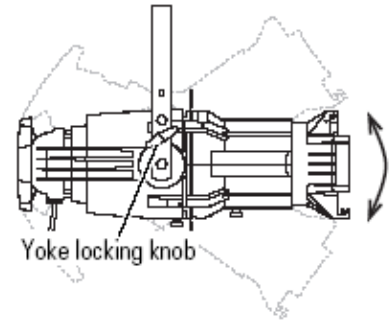
Figure 9

How to Focus 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, shape 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** into the color slot of the instrument.

How to Set 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.



How to Focus 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.

How to Rotate 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.

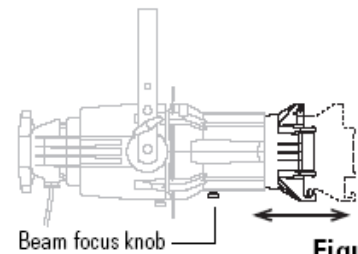


Figure 4

Required Sequence

1. Participants should 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. Loosen and tighten 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.

Penalties: Hang and Focus a Light

Placing items in mouth	+10 seconds
Dropping items or placing them on the ground	+10 seconds
Gloves not worn beginning to completion	+10 seconds
Items tethered around neck	+10 seconds
Gel frame not installed properly or forgotten	+10 seconds
C-clamp opening not facing installer	+5 seconds
Instrument hung upside down	+15 seconds
Safety cable not used properly	+10 seconds
Any item not tightened	+10 seconds
Shutter cut inside or outside 2" tape lines	+5 seconds each
Failure to follow sequence	+10 seconds
Focus is not sharp	+5 seconds
Blatant disregard for the rules	disqualified

EVENT DETAILS: Prop Shift

Staff Needed:	1 timer / score recorder 1 set up +1 adult staff (<i>could also do one of the other jobs</i>)
Equipment/ Materials Required per Station	• Two (2) sets of props (e.g., tablecloth, utensils, napkin, plates, vase with flower) • Props table (offstage table) • Dining table or similar (onstage table) with a tablecloth having markings for the first setting and spike marks on the tabletop for the second setting • Tape (for marking the table material layout and start box)
# of Participants:	Two-Person Team Event
# of Attempts:	2 Attempts
Maximum Time:	3 Minutes

Each team will have to change the set quickly and efficiently from Act 1 props to Act 2 props and creatively insert their “character” into the scene. The onstage table will be set for Act 1 (tablecloth, plates, utensils, etc.) with spike marks under the tablecloth for Act 2 props. The offstage table will be taped and hold Act 2 props, which include plates, cups, utensils, etc. There will also be sections taped for Act 1 props to be placed there when they come offstage.

Rules

1. Participants must not drop props or place them in pockets.
2. Participants must move quietly and efficiently.
3. Participants must not roughly handle or be careless with props.
4. Participants must place the tablecloth straight, with no corners flipped, and in the proper orientation, upstage/downstage.
5. Participants must place items correctly and right-side up.
6. Participants must follow the sequence and additional instructions below.

Required sequence

1. Leave the start box.
2. Clear the 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. The Act 2 props and set should be taken from the offstage table and set on the onstage table and Act 2 spike marks.
5. The Act 2 props should be taken from the offstage table and moved to the correct marks on the cloth covering the onstage table.
6. Once set, the contestants return to the start box for time to stop.

Penalties: Prop Shift

Carelessly handling props/set pieces	+5 seconds each instance
Setting props in the wrong position	+5 seconds

EVENT DETAILS: Fold a Drop

# of Participants:	Six-Person Team Event
# of Attempts:	2 Attempts
Maximum Time:	3 Minutes

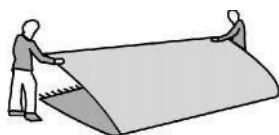
The team must fold a theatrical backdrop (or leg or teaser) for storage. The drop will be laid out flat on the stage floor. The team members should plan who will be at each corner as the drop is folded and who should check for the crispness of each fold or pleat.

Equipment/Materials Required per Station

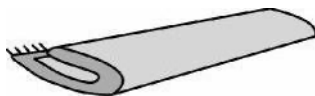
- One (1) large theatrical drop
- Tape (for marking start box, finish box, and field of play)
- Stopwatch

Rules and Required Sequence

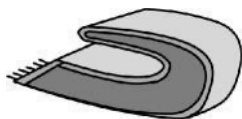
1. Leave the start box.
2. Make sure the drop is wrinkle-free, find centerline.
3. Make the first fold. The team must fold the **pipe pocket** (lower corners) to the **webbing** (upper corners). The drop should be folded to the tie lines, with the label plainly visible.



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.



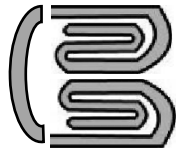
6. Fold the hemmed edges toward the center, leaving 1' to 1'6" space for the final book fold.



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!"

Penalties: Fold a Drop

Folded off-center	+5 seconds
Messy folds or pleats	+5 seconds
Drop does not fit into the sizing template	+5 seconds

EVENT DETAILS: Cable Roll-Up Relay

# of Participants:	Four-Person Team Event
# of Attempts:	1 Attempt
Maximum Time:	5 Minutes

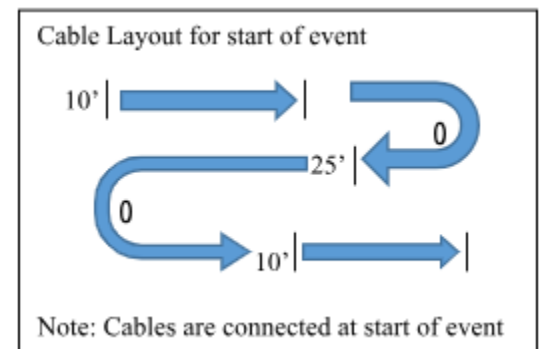
Note: At the beginning of the event, all cables will be connected and have a tie-line connected to the female end. Once judging is complete, the team will restore the event, under the supervision of the judge, before being released from the starting box.

Equipment/Materials Required per Station

- 4 XLR Cables*
 - 2 10' Cables
 - 1 15' Cable
 - 1 25' Cable
- *Cables should be marked as described below, and each cable should have a piece of tie line at the female end.
- Table for “storage” of cables
- Masking tape for labeling storage areas on table
- Stopwatch

Participants must be in the starting box which will have a next participant area marked in it.

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. That is, the label at the first cable will be 10' and at the next connection label 15' and so on.

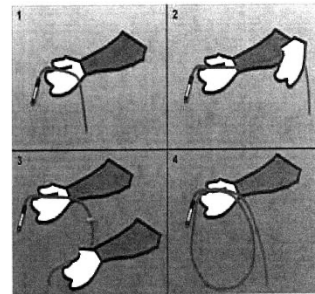
**The Relay**

When the judge says, “Start,” the person in the next participant spot will proceed to the first cable connection point. He or she will disconnect the cable, roll up the cable properly using the “over/under” rolling technique, secure it using the tie line or Velcro, and place it in the designated storage spot. Then the participant will tag the next participant to begin and proceed back to the starting box. This procedure continues until the last cable is rolled and stored and the last participant is in the starting box.

Judging is based on neatness, size of coil, and proper location.

“Over/under Coiling Technique”

1. Hold one end of the cable in your receiving hand and grab another part about 2 feet farther down the cable.
2. 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.
3. Grab another piece 2 feet away, but as you bring this one in, wrist clockwise to invert the loop as it forms. It often helps the cable slightly between your thumb and fingers, to better flopping the right way. If the loop starts to twist funny or figure-eight on you as it forms, twisting the cable in your to flatten out the loop.
4. Add this inverted loop to your bundle. The part that heads should pass **UNDER** the loop you’re just making. That is the your first “flipped” loop. It may look and feel a little wonky, exactly what you want. Now, if you look carefully at the rest particular cable going toward the floor, you may be able to twist will lend itself to coming up in a “normal” non-flipped reach for that next bit and make another straight-in loop.
5. Next comes another flipped loop. Grab the next part and rotate your wrist to invert the coil underneath and add it to the bundle.
6. Next comes a normal straight-in loop and then an under loop, etc. Just keep going that way — over, under, over, under — until the cable is finished.



rotate your
to also roll
guide it into
tries to
fingers helps



for the floor
key. This is
but this is
of this
tell that its
loop. So

Penalties: Cable Relay

Rolling cable over arm	+15 seconds per instance
Messy and inconsistent roll size, each instance	+10 seconds per instance
Cables not properly secured with a bow for storage	+5 seconds per instance
Failure to follow proper sequence	+5 seconds
Blatant disregard for the rules	Disqualification