

SkillsUSA 2015 Contest Projects

Screen Printing Technology

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**National Leadership
and
Skills Conference
Screen Printing Technology
Performance Testing Plan
June 24-25, 2015**

**SkillsUSA 2015
Screen Printing Technology Performance Test Plan**

**Kentucky Exposition Center
South Wing A
Louisville, Kentucky**

June 24-25, 2015

**General Information
For
Technical Committee Members
Judges
State SkillsUSA Directors
Screen Printing Instructors
And
Contestants**

SkillsUSA 2015

Screen Printing Technology

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Organizational Structure

I. Performance Test Chair and Co-Chair Responsibilities

- A. Coordinates details of organization.
- B. Reviews floor plans for performance test.
- C. Coordinates acquisition of equipment and supplies.
- D. Identifies and appoints judges.
- E. Assigns local committee members a list of needed supplies to have on hand on the day of the performance test: staples, pencils, marking pens, paper, and other consumable items.
- F. Arrange for security of performance testing area the evening before the day of the competition.

II. Technical Committee Responsibilities

- A. Selects competencies to be tested.
- B. Develops rating sheets.
- C. Completes preliminary instructions (scenario) and information sheets.
- D. Determines number of judges needed.
- E. Obtains names and addresses of judges.
- F. Determines materials, supplies, tools, and equipment needs for the performance test and identifies probable sources.
- G. Prepares a complete set of instructions in the form of scenarios.
- H. Determines the layout for the performance test area.
- I. Sets a time schedule for contestants.

III. Education Committee Responsibilities

- A. Work with the technical committee to protect the validity of the performance test.
- B. Reviews performance test content for accuracy and relevancy.

IV. Judges Responsibilities

Judges must attend an orientation session prior to the start of the performance test. Contestants should be allowed to become familiar with the competency testing station with regard to the instructions in the performance test scenario.

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Judges Responsibilities

1. Judges must be completely familiar with the *SkillsUSA Championships Technical Standards*, particularly the General Regulations, Instructions to Technical Committee Chairs, and the specific rules to the contest they have been asked to judge.
2. Judges should receive copies of the contest project and judges' rating sheet(s), along with complete instructions from the technical committee chair prior to the competition.
3. Members of the SkillsUSA Championships technical committee may not serve as judges unless approved by the SkillsUSA Championships director.
4. Judges must give careful attention to each rule, and each contestant or entry must be judged in exactly the same manner and under the same conditions as every other contestant or entry.
5. Judges will meet prior to the SkillsUSA Championships, at a time and place announced by the SkillsUSA Championships technical committee chair to confer on:
 - a. Rules meanings and interpretations
 - b. Room arrangements
 - c. Materials and equipment
 - d. Last-minute details
 - e. Rating sheets
6. Judges will evaluate the performance of each contestant according to criteria listed for each contest.
7. Judges will **identify contestants by number only**. Judges will not use contestants' names, schools or state unless otherwise specified in individual contest rules.
8. Judges may attend the contest orientation meeting held prior to the opening of the SkillsUSA Championships. However, **only members of the technical committee** may instruct the contestants and verify attendance.
9. Judges are selected because of their recognized expertise in the trade or skill that they are being asked to judge and are asked to follow the official SkillsUSA rules without inserting personal opinions. Such things as length of hair, length of dress and style of shoe, unless specifically covered in the contest regulations, are not to be considered by the judges except where safety is considered.
10. In no instance are judges or contest chairs authorized to change the contest rules. If an interpretation is required, the chair should contact the SkillsUSA Championships director.
11. Judges are to evaluate all items related to safety. Contestants not meeting safety requirements in clothing and/or devices may be disqualified from competition if, in the judges' opinions, the safety of the contestants or those around them is endangered.
12. Judges should **rate contestants on the basis of entry-level job skills**. Judges should **rate each contestant independently and not compare rating sheets with those of other judges**.
13. Judges should rate contestants against a standard of performance rather than automatically awarding first-, second-, or third-place medals to the highest-ranking competitors. **It is not necessary to award a medal if the standard of performance does not justify such recognition.**
14. After the judging is completed, judges should **total their own rating sheets** and return them, along with any notes and other pertinent information, to the SkillsUSA Championships technical committee chair.
15. The judges and technical committee members will **keep all results confidential until the general announcement of winners is made at the Awards Ceremony**. Under no circumstances may judges discuss contest results or contestants' performance with contestants, chapter advisors or any observer.
16. Judges should refer all contest inquiries or problems that arise to the SkillsUSA technical committee chair.

In keeping with a tradition of respect for the individuality of our members and our role in work force development, SkillsUSA strives to ensure inclusive participation in all of our programs, partnerships and employment opportunities.

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Screen Printing Technology
Contestant Information Sheet

A. Purpose

To rate a screen-printing contestant's preparation for employment and to recognize outstanding contestants for excellence and professionalism in the field of graphic imaging.

B. Clothing Requirements

Established by the SkillsUSA general contest requirements.

An apron or smock is optional.

Contestants should consider safety glasses with side shields, ear protection and latex gloves in some of the operational areas such as screen reclaiming.

C. Eligibility

Open to all active SkillsUSA members enrolled in technical education programs that teach graphic communications skills.

D. Tools

The technical committee will provide the tools needed at each competency testing station.

Contestants may use rulers, rags, optical devices, markers and other items that they feel will enhance their performance.

E. The SkillsUSA Screen Printing Technology Scorecard lists items that will not be evaluated during the current competition.

These items are as follows:

1. Screen Blockout

2. Screen Reclaiming

Therefore, the points for each of these evaluation items will be recorded on the Screen Printing Technology Scorecard for every Screen Printing Technology Contestant.

The Assignment and Rating Sheets for these performance-testing areas are included in this Performance Test Plan. The sheets have been included in this plan because Graphics Communications Students and Instructors may wish to refer to these sheets at some **future** time when screen printing performance testing procedures are needed at a local, district, state or **National Competition**.

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Screen Printing Technology

Scope of the Test

- I. Contestants will demonstrate their abilities to perform the duties and tasks that pertain to the following list of items that may be evaluated. The precise number of duties and tasks required for a competent performance of a screen-printing process will be determined by the Screen Printing Technology Technical Committee with **the level of skill** left to the professional judgment of the Screen Printing Technology Judges.
 - A. Screen Preparation (Inspection & Tensioning)
 - B. Screen Coating
 - C. Screen Exposure & Washout
 - D. Screen Blockout
 - E. Image Registration
 - F. Image Printing
 - G. Screen Reclaiming
 - H. Quality Control Problem
 - I. Written Knowledge Test
 - J. Oral Professional Assessment

- II. This list of items that may be evaluated is taken from the Screen Printing Technology Scorecard. As listed on the Screen Printing Technology Scorecard each of the ten evaluation items listed above have an attending number of possible points. Performance testing station checklists may generate points in more than one of the ten evaluation areas. (Example: Image Registration and Image Printing will test some of the same screen-printing skills. The testing of these identical skills will contribute points to a composite score on the Screen Printing Technology Scorecard.)
 - A. Screen Preparation, Inspection & Tensioning
 - Inspect screens entering production.
 - Check screen tension with a tension meter and re-tension if needed
 - B. Screen Coating
 - Select and prepare emulsion scoop
 - Fill emulsion scoop coater
 - Evaluate screen for acceptable tolerances
 - Coat screen with emulsion
 - Place coated screen in a screen dryer

C. Screen Exposure and Washout

- Select the **red** film positive from an art file
- Inspect the film positive for dirt and marks
- Obtain a screen coated with emulsion from screen dryer
- Inspect and protect screen from excess light
- Center **red** film positive on screen 6 1/4 inches from frame bottom
- Secure the film positive to the screen
- Place screen and film positive on an exposure unit
- Expose screen
- Remove film positive
- Washout the unexposed emulsion on a screen to create an image stencil
- Remove excess water
- Dry screen

D. Screen Blockout

Evaluation of this item at the state level is optional. It will be not be evaluated at the national level in 2015.

Use blockout fillers and tape to cover areas on the screen where plastisol could be printed on the image in an area that would produce a shirt that could not be sold to a customer.

E. Image Registration

- Place screen on the press
- Coarse register** to image printed at this press station (Note do not remove the blockout tape from the registration marks)
- Check shirt boards for proper adhesion
- Select adhesive by type
- Apply adhesive to shirt boards for proper adhesion
- Inspect contact side of screens for excess ink
- Test screen off contact
- Print test image on a rag or other substrate to check for correct registration
- Fine register** to image printed at this press station
- Print proof image on two shirts
- Place shirts in dryer

F. Image Printing

- Check shirt boards for proper adhesion
- Select adhesive by type
- Apply adhesive to shirt boards for proper adhesion
- Inspect contact side of screens for excess ink
- Inspect all screens for off contact
- Check ink supply on each screen
- Check registration of all screens
- Squeegee selection and inspection for hardness and damage
- Print image on shirts
- Place shirts in dryer

G. Screen Reclaiming

Evaluation of this item at the state level is optional. It will be not be evaluated at the national level in 2015.

Remove excess ink

Remove block-out filler and tape

Apply emulsion remover

Blow out emulsion with high pressure hot water

Use scrub brush where needed

Use environmentally safe chemicals and procedures

H. Quality Control Problem

Study technical specifications contained in the Tech Pack

Study the quality assurance worksheet scenario and inspection steps

Inspect a quality assurance sample of five garments

I. Written Test

Answer a minimum of 25 multiple-choice screen-printing technology questions.

Complete the test in the allotted fifteen (15) minutes

J. Oral Professional Assessment

Communicate in a job interview setting, which requires technical knowledge, career objective, professional judgment, and courtesy.

III. When a contestant has completed an assigned job the contestant is to be seated in the chair provided at that testing station to stop the time. After the judge and timekeeper have completed rating the contestant's performance and procedure the contestant will be notified. The judge will gather the completed project and rating form and submit it to the scorekeeper for tabulation and posting on a **Screen Printing Technology Scorecard**.

Each contestant will work independently without assistance from judges, instructors, fellow contestants, or observers. Such assistance may result in the contestant being disqualified.

IV. Contestants should perform minor testing station maintenance: such as clean up, tool and materials placement. Testing station maintenance is an item that will be evaluated by testing station judges.

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Screen Preparation

Screen Inspection and Tensioning Assignment

Objective:

Inspect and test three retentionable screens with stencils that are reentering production from storage. This inspection is made to determine if company production standards are being met.

Special attention is given to screen four's tension in preparation for coating. Tension tolerances are specified in a performance test scenario written at top of the screen preparation (**tensioning**) station checklist.

Note: Screen mesh tension must not vary more than plus or minus 5 Newtons at screen's center.

Caution: Do not continue to tighten screws that are crooked or jammed. A jammed screw on any frame corner will prevent completion of the tensioning process and result in zero (0) points for this portion of your Screen Printing Technology Performance Test.

Screen inspection and tension testing instructions:

1. Obtain Screen Preparation (Inspection and Tension) Checklist from the station timekeeper.
2. Read the scenario written on the checklist.
3. Move to inspection and tension testing station.
4. Inspect and test screen # 1. Place a check mark to indicate either accept or reject.
5. Record the screen tension **number** as either accept or reject.
6. **Move to screen # 2.**
7. Inspect and test screen # 2. Place a check mark to indicate either accept or reject.
8. Record the screen tension **number** as either accept or reject.
9. Move to screen # 3.
10. Inspect and test screen # 3. Place a check mark to indicate either accept or reject.
11. Record the screen tension number as either accept or reject.
12. Submit your inspection report to the judge.
13. Move to screen # 4.
14. Tension and test screen # 4.
15. Place the tensioning tools back in their proper place on the workstation bench.
16. Return to the Inspection and Tension Station starting position.

Judging:

A screen printer will use the screen preparation (**inspection and tension**) checklist, reproduced on the following page, to judge the contestant's performance.

Time:

A timekeeper will control the time each contestant is allotted for the completion of the screen inspection and tension testing procedure. A maximum of fifteen (15) minutes is allocated to the procedure.

Points:

Contestants earn four (4) points for each inspection check mark that is recorded on the correct blank as an **accepted** or **rejected** inspection for items one (1) through four (4). Inspection item five (5), for each of the three (3) screens, requires the **number** of **Newton**s read from a tension meter be recorded as either **accepted** or **rejected**. A maximum of sixty (60) points may be given to contestants for the screen inspections. A maximum of forty (40) points may be given to contestants for the screen tensioning performance.

Screen Preparation (Inspect and Tension) Checklist

Contestant Identification: _____ **Time Used:** _____.

Scenario: Inspect and test the tension on three (3) screens. The standard tension is 25 Newtons with a tolerance of + or - 5. Use the items listed on this checklist to inspect and determine if screens one (1), two (2) and three (3) meet production standards. **Do not retention screen that have stencils.**

Then tension the fabric (mesh) on screen number four (4) to 25 Newtons at screen's center.

Instructions for Judge's Scoring

Process Evaluation Criteria: Evaluation of the process involves how accurately the contestant performed with each screen. Depending on the placement of check marks and tension measurements for each of three inspection screens, award points of zero or four for each correct check mark and zero to four for the tension readings. Judges shall deduct one (1) point for each one (1) Newton of difference from the tension reading listed on the judging KEY. Tensioning screen number four (4) will require the judge to award 0 to 4 points for each tensioning operation listed while the contestant is working. Four (4) points may be awarded to contestants on each of the 25 lines provided in the Judges Scoring Box.

Judges Scoring Box

Contestants Rating for Performance of the Inspection Process:

Screen 1 Inspection and Tensioning Reports

Accept

Reject

1. Screen frame is free of damage. _____
2. Screen is free of cuts, splits or punctures. _____
3. Stencil is free of holes that could leak ink. _____
4. Screen mesh is not clogged in the image area. _____
5. Screen tension readings. (**Record Newtons**) _____

Screen 2 Inspection and Tensioning Reports

Accept

Reject

1. Screen frame is free of damage. _____
2. Screen is free of cuts, splits or punctures. _____
3. Stencil is free of holes that could leak ink. _____
4. Screen mesh is not clogged in the image area. _____
5. Screen tension readings. (**Record Newtons**) _____

Screen 3 Inspection and Tensioning Reports

Accept

Reject

1. Screen frame is free of damage. _____
2. Screen is free of cuts, splits or punctures. _____
3. Stencil is free of holes that could leak ink. _____
4. Screen mesh is not clogged in the image area. _____
5. Screen tension readings. (**Record Newtons**) _____

Note to contestant: Before proceeding with tensioning screen number four (4) submit this inspection report to the judge.

Screen 4 Tensioning

1. Inserted tension jacks at screen frame bottom. _____
2. Loosened bottom frame screws. _____
3. Used tension jacks to tighten screen fabric. _____
4. Softened bottom screen corners. _____
5. Tightened frame bottom screws. _____
6. Repeated steps 2, 3, 4, and 5 at top and sides. _____
7. Checked screen frame corners for square. _____
8. Removed tension meter from protective case. _____
9. Tensioned screen center to 25 Newtons. _____
10. Replaced tension meter in protective case. _____

60 Points Possible

Sub Total _____

Sub Total _____

Sub Total _____

Inspection Total _____

40 Points Possible

Sub Total _____

Tensioning Total _____

Station Total _____

Judge's Signature _____

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Screen Coating

Screen Coating Assignment

Objective:

Coat and dry a screen with photosensitive emulsion. The freshly coated screen will be placed in the screen coating station screen dryer.

Screen coating station procedure instructions:

1. Select a screen with correct mesh count.
2. Select and inspect an emulsion scoop coater.
3. Pour enough emulsion into the scoop coater to coat one screen.
4. Coat a screen.
5. Place the wet screen in a screen dryer.
6. Check the dryer temperature.
7. Clean the scoop coater, tools, and screen coating station.

Judging:

A screen printer will use the screen coating station checklist, reproduced on the following page, to judge the contestant's performance, procedure and product.

Time:

A timekeeper will record the time each contestant needed to complete the screen coating procedure and place the newly coated screen in the screen coating station screen dryer.

A maximum of fifteen (15) minutes is allocated to coat and store the newly coated screen.

Points:

A maximum of fifty (50) points may be given to the contestant for a standard screen coating performance.

Screen Coating Checklist

Contestant Identification: _____ **Time Started:** _____

Directions:

This is a performance evaluation sheet to rate a contestant on a scale from 0 to 2 and 0 to 5 for various items in relation to an occupational competency (skill). This instrument can be used for process, product, safety, and time standard evaluation.

Process Evaluation Criteria:

Depending on the degree of proficiency demonstrated for each criterion point listed below award zero, one or two points.

Contestants Rating for Performance Process:	Total Points Possible 30		
	Zero	One	Two
1. Inspected screen fabric to insure its usable condition.	_____	_____	_____
2. Positioned emulsion scoop coater to prevent spills.	_____	_____	_____
3. Opened emulsion container lid.	_____	_____	_____
4. Poured adequate amount of emulsion into scoop coater.	_____	_____	_____
5. Held screen with one hand at correct angle.	_____	_____	_____
6. Coated contact side of the screen in one smooth pass.	_____	_____	_____
7. Coated squeegee side of screen smoothly.	_____	_____	_____
8. Removed excess emulsion left from scoop overflow.	_____	_____	_____
9. Put screen in dryer. Contact side up or down?	_____	_____	_____
10. Returned unused emulsion to the container.	_____	_____	_____
11. Placed lid on emulsion container.	_____	_____	_____
12. Removed emulsion from scoop coater and tools.	_____	_____	_____
13. Cleaned work area of spills and drips. (If needed)	_____	_____	_____
14. Coated screen in proper sequence.	_____	_____	_____
15. Used careful procedures, in allotted time.	_____	_____	_____

Product Evaluation: Rate the coated screen in accordance with the following point scale:

0 – Reject, 1 – Very Poor, 2 – fair, 3 – good, 4 – very good, 5 – excellent.

Contestants Product:	Points Possible 20					
	Zero	One	Two	Three	Four	Five
1. Screen coating is free of pin holes	_____	_____	_____	_____	_____	_____
2. Coating is free of drips and runs.	_____	_____	_____	_____	_____	_____
3. Coating is uniform in thickness.	_____	_____	_____	_____	_____	_____
4. Outside of screen frame is free of emulsion.	_____	_____	_____	_____	_____	_____

Total Points Earned _____

Judge's Name or Signature _____

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Screen Exposure and Washout

Screen Exposure and Washout Assignment

Objective: Create an image on a screen in accordance with the instructions given at the screen exposure and washout station.

Screen exposure and washout station instructions:

1. Refer to the art file and select the film positive needed to expose the screen for printing the designs red elements.
2. Check film positive's unmarked properties, clean the film positive if needed
3. **Position the film positive on an unexposed emulsion coated screen with the registration marks (crosshairs) at the top and bottom center of the film positive on the screen's centerline. The registration mark (+) at the bottom of the film positive shall be positioned 6 1/4 inches from the outside edge of the frame at the bottom of the screen.**
4. Secure the film positive to the screen
5. Place the screen and film positive on the exposure unit
6. Expose the screen for approximately 3 1/2 minutes
7. Remove film positive and return it to the art file
8. Place the exposed screen in a washout booth
9. Wet both sides of the exposed screen with warm water
10. Allow the unexposed emulsion to soak for a few seconds
11. Spray the unexposed area of the image with a low-pressure sprayer.
12. Washout all of the unexposed emulsion from the stencil
13. Remove the excess water from the screen
14. Check for emulsion binder (scum) left on the screen's washout areas
15. Place screen in a screen dryer rack

Judging:

A screen printer will use the screen exposure and washout station checklist to judge the contestant's performance, procedure and product.

Time:

A timekeeper will record the time each contestant needed to complete the screen exposure and washout procedure. A maximum of fifteen (15) minutes is allocated for the screen exposure and washout procedure.

Points:

A maximum of one hundred (100) points may be given to the contestant for a screen-printing stencil procedure that meets industry standards.

Screen Exposure and Washout Station Checklist

Contestant Number: _____ **Time:** _____

Directions:

This is a performance evaluation sheet to rate a contestant on a scale of 0 to 4 and 0 to 5 for various items in relation to an occupational competency (skill). This instrument can be used for process, product, safety and time standard evaluations.

Process Evaluation:

Evaluation of this process involves exposing a screen-printing screen with an ultra-violet exposure unit and washout of unexposed emulsion to create a stencil.

Contestants Rating for Performance of the Process:

1. Selected needed film positive from art file.
2. Inspected film positive for dirt or marks.
3. Cleaned film positive and exposure unit glass, if needed.
4. Took an unexposed screen from screen dryer.
5. Placed and aligned the film positive on the screen.
6. Taped the film positive to the screen.
7. Checked exposure unit for correct exposure time.
8. Placed screen and film positive on the exposure unit.
9. Placed bleeder cord on screen and closed exposure unit lid.
10. Checked exposure unit timer for correct preset time.
11. Turned on exposure unit and vacuum pump power.
12. Checked exposure unit for proper blanket vacuum.
13. Exposed the screen.
14. Turned off exposure unit to allow vacuum release.
15. Opened the exposure unit lid.
16. Transferred screen to washout booth and wet both sides.
17. Washed out the unexposed emulsion to create a stencil.
18. Blotted excess water from stencil and inspected for scum.
19. Placed screen in screen dryer rack.
20. Cleaned up the testing station.

Zero One Two Three Four

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
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_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Product Evaluation: Evaluation of the dried screen in accordance with the following points scale;
0 – reject, 1 -- very poor, 2 -- fair, 3 -- good, 4 -- very good, 5 – excellent

Contestants Product Points (20 Possible).

1. Image was centered and not crooked.
2. Image could be registered.
3. Screen was properly exposed.
4. Screen was properly washed out and dried.

Zero One Two Three Four Five

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Total Points Earned _____

Judge's Signature _____

SkillsUSA 2015
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Screen Block Out

Screen Block Out Assignment

The Screen Block Out Station will be not be part of the 2015 Screen Printing Technology Performance Test. All Contestants will automatically receive 50 points on the Screen Printing Technology Scorecard. This action is taken to afford more time for the testing of additional contestants.

Objective:

Block out portions of a test screen where direct emulsion did not coat the screen fabric, or where the cured emulsion has a flaw such as a pin hole, scratch, cut or other defect that would allow plastisol to be applied to incorrect areas on a substrate during the printing process.

Screen Block Out station instructions:

1. Remove the test screen from the screen dryer.
2. Compare the number on the test screen to Contestant I D number.
3. Inspect block out station table for cleanliness and objects that could damage the test screen.
4. Place the test screen on the block out station table.
5. Use block out tape to tape off the sides of the screen where emulsion is missing.
6. Use block out tape to tape off the top and bottom of the screen where emulsion is missing.
7. Create corner dams to prevent ink leaks.
8. Inspect test screen stencil for flaws, scum and orientation.
9. Use block out tape to tape off flaws such as pinholes.
10. Present test screen to the block out Judge for final check and evaluation.

Judging:

A screen printer will use the screen block out station checklist, reproduced on the following page, to judge the contestant's performance, procedure and product.

Time:

A timekeeper will record the time each contestant needed to complete the screen block out procedure. A maximum of fifteen (15) minutes is allocated to the screen block out procedure.

Points:

A maximum of fifty (50) points may be given to the contestant for a screen block out that meets industry standards.

Screen Block Out Station Checklist

Contestant Number: _____ **Time:** _____

Directions:

This is a performance evaluation sheet to rate a contestant on a scale of 0 to 4 and 0 to 5 for various items in relation to an occupational competency (skill). This instrument can be used for process, product, safety and time standard evaluations.

Process Evaluation:

Evaluation of the process involved with blocking out portions of a test screen where direct emulsion does not coat the screen fabric.

Contestants Rating for Performance of the Process

Points Possible 40

Zero One Two Three Four

1. Removed the test screen from the screen dryer
2. Compared test screen number to Contestant I D number.
3. Inspected station table for cleanliness and foreign objects.
4. Placed the test screen on the block-out station table.
5. Used block-out tape to tape off the sides of the screen.
6. Used block-out tape to tape off top and bottom of screen.
7. Created corner dams to prevent ink leaks.
8. Inspected test screen stencil for flaws, scum and orientation.
9. Used block-out tape to tape off flaws such as pinholes.
10. Presented screen to judge for final check and evaluation.

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Product Evaluation:

Evaluation of the dried screen in accordance with the following points scale;

0 – reject, 1 -- very poor, 2 -- fair, 3 -- good, 4 -- very good, 5 – excellent

Contestants Product:

Points Possible 10

Zero One Two Three Four Five

1. Tape around frame is smooth and will not leak.
2. Flaws such as pinholes taped over and will not leak.

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Total Points Earned _____

Judge's Signature _____

SkillsUSA 2015
Screen Printing Technology
Image Registration

Image Registration Assignment

Objective:

Place a screen on a screen press and register the stencil image to screen stencils that have been registered and used to print an image on a substrate.

Image registration station instructions:

1. Remove the test screen from the reclaim area.
1. Do not remove block-out tape from the registration marks.
2. Print an image using the screen with darkest ink on a substrate.
3. Spot cure the dark image that is to be the registration reference.
4. Register the screen to an image that is being printed on the press.
5. Ink the screen.
6. Test the newly registered image by printing the multicolor image on the substrate provided.
7. Remove the test image from the press and place it on the conveyer dryer belt.
8. Print two (2) T-shirts.
9. Remove the T-shirts from the press and place them on the conveyer dryer belt.
10. Remove the test screen and place it by the reclaim sign on the worktable.

Judging:

A screen printer will use the image registration station checklist, reproduced on the following page, to judge the contestant's performance, procedure and product.

Time:

A timekeeper will record the time each contestant needed to complete the image registration procedure. A maximum of fifteen (15) minutes is allocated to the image registration procedure.

Points:

A maximum of one hundred (100) points may be given to the contestant for an image registration that meets industry standards.

Image Registration Station Checklist

Contestant Number: _____ **Time:** _____

Directions:

This is a performance evaluation sheet to rate a contestant on a scale of 0 to 4 and 0 to 5 for various items in relation to an occupational competency (skill). This instrument can be used for process, product, safety and time standard evaluations.

Process Evaluation:

Evaluation of process involved with registering a screen-printing screen on a rotary press.

Contestants Rating for Performance of the Process:

	Zero	One	Two	Three	Four
1. Took screen from reclaim area and attached it to the press.	_____	_____	_____	_____	_____
2. Checked the rotary press head for zeroed out position.	_____	_____	_____	_____	_____
3. Cleaned ink from mesh to allow view of printed images.	_____	_____	_____	_____	_____
4. Registered to an image being printed at this station.	_____	_____	_____	_____	_____
5. Checked screen for off contact and level.	_____	_____	_____	_____	_____
6. Checked all screens and screen frames for unwanted ink.	_____	_____	_____	_____	_____
7. Applied ink to screen being registered.	_____	_____	_____	_____	_____
8. Selected appropriate squeegee.	_____	_____	_____	_____	_____
9. Applied proper adhesive and amount to the platen.	_____	_____	_____	_____	_____
10. Spot cure dark image that is the registration reference.	_____	_____	_____	_____	_____
11. Flooded the newly registered screen with ink.	_____	_____	_____	_____	_____
12. Printed registered image to a test image on substrate.	_____	_____	_____	_____	_____
13. Checked test image for ink smears, pin holes, etc.	_____	_____	_____	_____	_____
14. Cured the image in the conveyor dryer.	_____	_____	_____	_____	_____
15. Printed two T-shirts with the multicolor image.	_____	_____	_____	_____	_____
16. Dried the T-shirts in a conveyor dryer.	_____	_____	_____	_____	_____
17. Removed test screen and placed it in reclaim area.	_____	_____	_____	_____	_____
18. Cleaned work area of spills and drips. (If needed)	_____	_____	_____	_____	_____
19. Submitted test image and T-shirts to the judge.	_____	_____	_____	_____	_____
20. Completed registration procedure in allotted time.	_____	_____	_____	_____	_____

Product Evaluation:

Evaluation of the registered image in accordance with the following points scale;

0 – reject, 1 -- very poor, 2 -- fair, 3 -- good, 4 -- very good, 5 – excellent

Contestants Product Points (20 Possible).

	Zero	One	Two	Three	Four	Five
1. Test image was in registration.	_____	_____	_____	_____	_____	_____
2. All parts of the image printed.	_____	_____	_____	_____	_____	_____
3. Image was not blurred.	_____	_____	_____	_____	_____	_____
4. Ink smears do not appear in the image.	_____	_____	_____	_____	_____	_____

Total Points Earned _____

Judge's Signature _____

SkillsUSA 2015
Screen Printing Technology
Image Printing

Image Printing Assignment

Objective:

Print and dry at least seven (7) shirts within seven (7) minutes that are of salable quality.

Image printing station instructions:

1. Check the ink level in each screen.
2. Check the press shirt boards for proper adhesion.
3. Operate the printing press to print a multicolor image on shirts.
4. Spot cure after each image color **where printing wet on wet is not desirable.**
5. Place the shirts on the belt of a conveyor dryer.
6. Stack the printed shirts and give them to the judge
7. Remove ink smears from press, screens, squeegees, tools and image printing station area.

Judging:

A screen printer will use the image printing station checklist, reproduced on the following page, to judge the contestant's performance, procedure and product. Contestants may earn extra points by printing more than five (5) shirts within seven (7) minutes.

Time:

A timekeeper will record the time each contestant needed to complete the image printing procedure. A maximum of fifteen (15) minutes is allocated to the total image printing station procedure. Time stops when the contestant is seated.

Points:

A maximum of two hundred (200) points may be given to the contestant for a high quality image printing performance.

Image Printing Station Checklist

Contestant Number: _____ **Time:** _____

Directions: This is a performance evaluation sheet to rate a contestant on a scale of 0 to 8 and 0 to 20 for various items in relation to an occupational competency (skill). This instrument can be used for process, product, safety and time standard evaluations.

Process Evaluation: Evaluation of the process involves assessing how well a contestant can print shirts as well as how fast the shirts were printed on a rotary press.

Contestants Rating for Performance of the Process:	Possible Points 120				
	Zero	Two	Four	Six	Eight
1. Checked the ink level in each screen.	_____	_____	_____	_____	_____
2. Checked shirt board for proper fabric adhesion.	_____	_____	_____	_____	_____
3. Chose and applied proper adhesive type and amount.	_____	_____	_____	_____	_____
4. Inspected all screens for off contact and cleanliness.	_____	_____	_____	_____	_____
5. Spot cured when printing wet on wet is not desirable.	_____	_____	_____	_____	_____
6. Printed three salable T-shirts, 1 thru 3.	_____	_____	_____	_____	_____
7. Skillfully placed each shirt in dryer.	_____	_____	_____	_____	_____
8. Printed salable T-shirts, 4 thru 6.	_____	_____	_____	_____	_____
9. Skillfully placed each shirt in dryer.	_____	_____	_____	_____	_____
10. Printed salable T-shirts, 7 or more.	_____	_____	_____	_____	_____
11. Skillfully placed each of the shirts in dryer.	_____	_____	_____	_____	_____
12. Stopped printing when seven (7) minutes had elapsed.	_____	_____	_____	_____	_____
13. Collected the printed shirts from the dryer basket.	_____	_____	_____	_____	_____
14. Stacked printed shirts with the image up for judging.	_____	_____	_____	_____	_____
15. Completed printing procedure in allotted time safely.	_____	_____	_____	_____	_____

Product Evaluation: Using the printing technical specifications found in the customer’s technical packet (Tech.-Pack) evaluate the printed garments in accordance with the following zero to twenty point scale.

Deduct five points for each error found on the garments!
 0 – reject, 5 -- fair, 10 -- good, 15 -- very good, 20 – excellent

Contestants Product Points (80 Possible)	Zero	Five	Ten	Fifteen	Twenty
1. Images were printed at correct height.	_____	_____	_____	_____	_____
2. Images were printed on center.	_____	_____	_____	_____	_____
3. Images were not crooked.	_____	_____	_____	_____	_____
4. Ink evenly applied without smudges on shirts.	_____	_____	_____	_____	_____

Total Points Earned _____

Judge’s Signature _____

SkillsUSA 2015
Screen Printing Technology
Screen Reclaiming

Screen Reclaiming Assignment

The Screen Reclaiming Station will not be part of the 2015 Screen Printing Technology Performance Test. All Contestants will automatically receive 100 points on the Screen Printing Technology Scorecard. This action is taken to afford more time for the testing of additional contestants.

Objective:

Reclaim a screen that has been used to print an image on a shirt in accordance with the instructions given at the screen reclaiming station.

Screen reclaiming station instructions:

1. Remove a used screen from a storage rack.
2. Place screen in a cleanup rack that compares to a press with side clamps
3. Remove ink
4. Remove block-out tape (If present)
5. Remove emulsion
6. Secure high-pressure sprayer
7. Place screen in a storage rack
8. Clean up the workstation

Judging:

A screen printer will use the screen reclaiming station checklist, reproduced on the following page, to judge the contestant's performance, procedure and product.

Time:

A timekeeper will record the time each contestant needed to complete the screen reclaiming procedure. A maximum of fifteen (15) minutes is allocated to the screen reclaiming procedure. Time stops when the contestant is seated.

Points:

A maximum of one hundred (100) points may be given to the contestant for a screen reclaiming procedure that meets industry standards.

Screen Reclaiming Station Checklist

This station will not be in operation during the 2015 Competition

Contestant Number: _____ Time: _____

Directions: This is a performance evaluation sheet to rate a contestant on a scale of 0 to 4 and 0 to 5 for various items in relation to an occupational competency (skill). This instrument can be used for process, product, safety and time use evaluations.

Process Evaluation: Evaluation of the process involved with reclaiming a screen.

Contestants Rating for Performance of the Process:	Points Possible 80				
	Zero	One	Two	Three	Four
1. Donned apron and safety glasses.	_____	_____	_____	_____	_____
2. Used ear protection and gloves.	_____	_____	_____	_____	_____
3. Removed screen from storage rack.	_____	_____	_____	_____	_____
4. Placed screen on clean up rack.	_____	_____	_____	_____	_____
5. Removed excess ink.	_____	_____	_____	_____	_____
6. Removed block out tape. (If Present)	_____	_____	_____	_____	_____
7. Used towels and solvent to remove remaining ink.	_____	_____	_____	_____	_____
8. Disposed of the dirty towel.	_____	_____	_____	_____	_____
9. Placed screen in the washout booth.	_____	_____	_____	_____	_____
10. Turned the washout booth backlight off..	_____	_____	_____	_____	_____
11. Applied emulsion remover.	_____	_____	_____	_____	_____
12. Allowed time for the stencil emulsion to soften.	_____	_____	_____	_____	_____
13. Used high-pressure washer to remove emulsion.	_____	_____	_____	_____	_____
14. Used brush to help loosen emulsion hard spots.	_____	_____	_____	_____	_____
15. Blotted or vacuumed excess water from the screen.	_____	_____	_____	_____	_____
16. Placed the reclaimed screen in the screen dryer.	_____	_____	_____	_____	_____
17. Cleaned the washout booth.	_____	_____	_____	_____	_____
18. Stowed the high-pressure washer hose and nozzle.	_____	_____	_____	_____	_____
19. Used safe procedures.	_____	_____	_____	_____	_____
20. Completed reclaiming procedure in allotted time.	_____	_____	_____	_____	_____

Product Evaluation: Evaluation of the reclaimed screen in accordance with the following points scale;
0 – reject, 1 -- very poor, 2 -- fair, 3 -- good, 4 -- very good, 5 – excellent

Contestants Product:	Points Possible 20					
	Zero	One	Two	Three	Four	Five
1. Screen is free of block out tape.	_____	_____	_____	_____	_____	_____
2. Screen is free of ink residue.	_____	_____	_____	_____	_____	_____
3. Screen is free of emulsion residue.	_____	_____	_____	_____	_____	_____
4. Frame is clean and dry.	_____	_____	_____	_____	_____	_____

Total Points Earned _____

Judge's Signature _____

SkillsUSA 2015
Screen Printing Technology
Quality Control Problem

Quality Control Problem Assignment

Objective:

Judge quality levels of five (5) garments that have been rejected by a quality assurance auditor before the auditor negotiates a new price for your company's customer.

Quality control station instructions:

1. Study technical specifications contained in the Tech Pack.
2. Obtain the Q. C. problem worksheet from the Q. C. station timekeeper
3. Study the quality assurance worksheet scenario and inspection steps.
4. Move to garment quality assessment station inspection pedestal.
5. Select garment number one (1) and spread it out on the inspection pedestal.
6. Inspect both sides of the garment number one (1).
7. Rate the degree of defect garment one (1) on the quality control inspection worksheet.
8. Place garment one (1) in box marked for either none, minor or major rejects.
9. Inspect the remaining four (4) garments according to steps 5, 6, 7 and 8.
10. Return to the judge or timekeeper and submit your completed report that is recorded on the quality control problem worksheet.

Judging:

A screen printer will use the quality control problem worksheet, reproduced on the following two pages, to judge and score the contestant's performance.

Time:

A timekeeper will record the time each contestant needed to complete the quality control problem procedure. A maximum of fifteen (15) minutes is allocated to the quality control problem procedure. Time stops when the contestant is seated.

Points:

A maximum of one hundred (100) points may be given to the contestant for the quality assurance audit that meets industry standards.

Quality Control Problem Worksheet

Contestant Identification: _____ Time Finished: _____

Scenario:

As a quality control inspector for New Era Screen Printing Company you have been given the task of assessing the validity of a recent quality assurance audit performed by one of your company's customers. The quality assurance auditor rejected five (5) garments. You have been instructed to use the criterion lists printed on the back of this worksheet to determine if each rejected garment was accurately evaluated and record the degree of each defect.

The quality assurance audit criterion lists printed on the back of this worksheet has a rating scale for each of the ten possible defects that might be observed on each of the five sample garments that are being inspected for the second time. Rate each of the defect criterion factors listed by placing a check mark in the blank that indicates you found either no defect (**NONE**), minor defect (**MINOR**), or a major defect (**MAJOR**). Your evaluation of each of the ten possible defects will be supported in part by the image specifications included in the technical packet (Tech-Pack) that lists quality standards set by your company's customer. As you evaluate each of the five (5) garments against the ten (10) possible defects it will be your responsibility to determine if the garments should have been rejected on the basis of a garment being considered **not saleable**.

Minor defects may be acceptable if the garment is considered as **saleable**.

A minor defect example could be a small pinhole ink deposit.

Major defects will render a garment as **not saleable**.

A major defect example would be a large smear of ink, or image printed out of dimension tolerance.

Judge's Evaluation Criteria:

Depending on where the contestant placed a check mark to indicate the degree of quality defect for each criterion factor listed below award one or zero points.

Scoring will be accomplished by comparing the contestants rating to the judge's rating key.

Judge's Score Tallied Below This Line

	Shirt 1	Shirt 2	Shirt 3	Shirt 4	Shirt 5	Correct		Q. C.
Contestant ID	Correct	Correct	Correct	Correct	Correct	Checks	Multiply	Problem
Identification	Checks	Checks	Checks	Checks	Checks	Total		Score
							X 2 =	

A quality control inspector report form is printed on the back of this page.

Quality Control Inspector Report Form

Garment 1-Type of Inspection Defect or Defects Found

1. Image printed on correct vertical dimension.
2. Image printed on center.
3. Image crooked.
4. Ink smudges on sample garment.
5. Color density varies across the image.
6. Ink printed in non-image area due to pinhole.
7. Last color covers previous colors.
8. Missed register between colors.
9. Garment fabric damage.
10. Colors match the customer's standard.

None Minor Major

Garment 2-Type of Inspection Defect or Defects Found

1. Image printed on correct vertical dimension.
2. Image printed on center.
3. Image crooked.
4. Ink smudges on sample garment.
5. Color density varies across the image.
6. Ink printed in non-image area due to pinhole.
7. Last color covers previous colors.
8. Missed register between colors.
9. Garment fabric damage.
10. Colors match the customer's standard.

None Minor Major

Garment 3-Type of Inspection Defect or Defects Found

1. Image printed on correct vertical dimension.
2. Image printed on center.
3. Image crooked.
4. Ink smudges on sample garment.
5. Color density varies across the image.
6. Ink printed in non-image area due to pinhole.
7. Last color covers previous colors.
8. Missed register between colors.
9. Garment fabric damage.
10. Colors match the customer's standard.

None Minor Major

Garment 4-Type of Inspection Defect or Defects Found

1. Image printed on correct vertical dimension.
2. Image printed on center.
3. Image crooked.
4. Ink smudges on sample garment.
5. Color density varies across the image.
6. Ink printed in non-image area due to pinhole.
7. Last color covers previous colors.
8. Missed register between colors.
9. Garment fabric damage.
10. Colors match the customer's standard.

None Minor Major

Garment 5-Type of Inspection Defect or Defects Found

1. Image printed on correct vertical dimension.
2. Image printed on center.
3. Image crooked.
4. Ink smudges on sample garment.
5. Color density varies across the image.
6. Ink printed in non-image area due to pinhole.
7. Last color covers previous colors.
8. Missed register between colors.
9. Garment fabric damage.
10. Colors match the customer's standard.

None Minor Major

SkillsUSA 2015
Screen Printing Technology
Written Test

Written Test Assignment

Objective:

Correctly answer twenty-five (25) multiple choice test questions. (Questions will relate to graphic imaging and screen-printing processes)

Technical knowledge test station instructions:

1. Read instructions on the test book
2. Use number 2 lead pencil to mark the correct response
3. Give the testing administrator notice when the test has been completed
4. Remain seated until dismissed by the test administrator

Judging:

A technical knowledge test administrator will administer and score the technical knowledge test. Scoring will be accomplished by comparing a contestant's responses to an answer key prepared by the screen-printing technical committee.

Time:

The technical knowledge test administrator will record the time each contestant uses to complete the technical knowledge test. A maximum of fifteen (15) minutes is allocated to the technical knowledge testing procedure.

Points:

A maximum of one hundred (100) points may be given to the contestant who scores 100 percent on the technical knowledge written test.

Skills USA

Screen Printing Technology

Technical Knowledge Examination

Directions:

1. You will have 15 minutes to complete this 25-question multiple-choice test.
2. Write your contestant number on the Scantron Answer Sheet.
3. Use a No. 2 lead pencil to mark your responses to the questions on the Scantron Answer Sheet.
4. Do not mark on this test booklet.
5. When you have completed answering the 25 test questions, place both the answer sheet and test booklet face down on the table and wait for instructions from the testing monitor.

SkillsUSA 2015
Screen Printing Technology
Oral Professional Assessment

Oral Professional Assessment Assignment

Objective:

Participate in an oral professional assessment in a role-playing job interview setting related to a screen-printing career choice.

Oral professional assessment station instructions:

1. Introduce yourself
2. Take the seat indicated by the interviewer
3. Answer questions
4. Ask questions that you deem appropriate

Judging:

A human resources interviewer with basic knowledge of the screen printing industry will use the oral professional assessment station checklist, reproduced on the following page, to judge the contestant's screen printing knowledge and preparation needed for employment in a screen printing occupation.

Time:

The human resources interviewer will record the time each contestant participated in a job interview. A maximum of fifteen (15) minutes is allocated to the oral professional assessment.

Points:

A maximum of one hundred (100) points may be given to the contestant for an oral professional assessment that meets Equal Employment Opportunity (EEO) standards.

Oral Professional Assessment Station Checklist

Contestant Number: _____ **Time:** _____

Directions:

This oral professional assessment checklist is designed to rate a contestant's responses to questions on a scale of 0 to 20. Five question areas or problems should be posed that are related to the contestant's occupational goals in the field of graphic imaging. This instrument should be used to record indications of person's readiness for employment as a screen printer.

Process Evaluation:

Evaluation of the process involves interviewing a person who has applied for a job with a company that produces products requiring screen-printing processes. Questions will be related to a performance test that might be given to the applicant by a company's production personnel.

Questions to be developed by the screen-printing technical committee prior to the day of the state level screen-printing performance test.

Questions related to the following areas:

1. Ability to handle assignments
2. Ability to answer questions asked in technical terms
3. Situation handled in a professional manner
4. Demonstration of critical thinking throughout the job interview scenario
5. Realistic self concept

The following page is a copy of the *Oral Professional Assessment Station Checklist* related to the five areas listed above with the attending rating scale for each question area.

Note: The specific questions have been removed and will be revised annually by technical committee members.

Oral Professional Assessment Station Checklist

Contestant Number: _____ **Start Time:** _____ **End Time:** _____

1. Ability to handle work assignments. **Question Area Score: 0 to 20 Points** _____

2. Answered questions using technical terms. **Question Area Score: 0 to 20 Points** _____

3. Situation handled in a professional manner. **Question Area Score: 0 to 20 Points** _____

4. Used critical thinking during the interview. **Question Area Score: 0 to 20 Points** _____

5. Demonstrated a realistic self-concept. **Question Area Score: 0 to 20 Points** _____

Total Points Out of Possible 100 _____

SkillsUSA 2015

Screen Printing Technology

Helpful Hints

Prior to Performance Test

1. Contact people to donate supplies for the performance test
 - a. Shirts
 - b. Ink
 - c. Cleaning solvents
 - d. Screen fabric
 - e. Etc.
2. Contact suppliers to donate prizes for contestants (3 Secondary/3Post Secondary)
 - a. First prize – Tools and Shirts
 - b. Second prize – Tools and Shirts
 - c. Third prize – Tools and Shirts
3. Make sure that the contestants can complete their assignments at each testing station in the time allotted
 - A. Screen Preparation (Tensioning)
 - B. Screen Coating
 - C. Screen Exposure and Washout
 - D. Screen Blockout (**Inactive in 2015**)
 - E. Image Registration
 - F. Image Printing
 - G. Screen Reclaiming (**Inactive in 2015**)
 - H. Quality Control Problem
 - I. Written Knowledge Test
 - J. Oral Professional Assessment
4. Contact screen printers to judge contests
5. Contact people to keep time

During the Performance Test

1. Check Contestant Number against the Testing Schedule
2. Announcements
3. Special instructions
4. Dismiss with a Good Luck Wish

After the Performance Test

1. Report the results

SkillsUSA 2015

Screen Printing Technology

Meeting Agenda for Contestant Orientation/Written Test

Tuesday, June 23, 2015 from 2 p.m. to 4 p.m., in Contest Area, South Wing A, Kentucky Exposition Center

Oral Interview: All Contestants, Wednesday 8 a.m. - 4:45 p.m., Contest Area, South Wing A, Kentucky Exposition Center

Contest: College/Postsecondary, Wednesday, 9 a.m. – 3 p.m., Contest Area, South Wing A, Kentucky Exposition Center

Contest: High School, Thursday, 8 a.m.– 4:30 p.m., Contest Area, South Wing A, Kentucky Exposition Center

Debriefing: Thursday, 4:30 p.m. - 5 p.m., Contest Area, South Wing A, Kentucky Exposition Center

Introductions

Roll call of contestants - Assign contestant numbers

Travel stipends awards:

- Ms. Eileen Cassidy, Director of Graphic Arts Education Research Foundation
- Mr. Johnny Shell, Vice President of Technical Services, SGIA

Review the testing schedules with contestants numbers listed on the schedules

Review the areas to be tested (Pass out the Assignment and Checklist Booklets)

- A. Screen Preparation (Inspection and Tensioning)
- B. Screen Coating
- C. Screen Exposure & Washout
- D. Screen Blockout will not be evaluated in 2015 points will be posted on scorecard!
- E. Image Registration
- F. Image Printing
- G. Screen Reclaiming will not be evaluated in 2015 points will be posted on scorecard!
- H. Quality Control Problem
- I. Written Knowledge Test
- J. Oral Professional Assessment

Special instructions:

- A. Judges team will not give instruction during tests on Wednesday or Thursday
- B. Pass out the equipment operation manuals
- C. Screen Tensioning Demonstration; To Be Named, Demonstration
- D. SkillsUSA Competition Rules and Regulations Revision
- E. Optional Tools and Equipment. (Safety Glasses, Ear Protection, Apron, and Vinyl Gloves)
- F. Questions and Answers

ADMINISTER THE WRITTEN KNOWLEDGE TEST - FIFTEEN (15) MINUTE TIME LIMIT

Dismiss

SkillsUSA 2015

Screen Printing Technology

Industry Awards and Prizes

Awards and prizes presented to the Screen Printing Technology performance test winners should be related to the skills being developed in the contestants technical education program. Awards and prizes may be in the form of scholarships, tools, books, manuals, or educational travel. Awards must be equal in value for both secondary and post secondary contestants. Prizes are needed for the first, second, and third place winners.

Secondary

1st Place Items:

- 12 MZX-UL 18"x20" Newman Roller Frames with mesh, wrenches, 6 Newman constant force manual squeegees
- 1 gal. Murakami Emulsion
- 1-set M3 Series ink
- 1 coating trough
- 6 squeegees with handles
- 1 10-step exposure calculator
- AccuRIP software OR Separation Studio separation software
- 10-pak of artwork
- Operation Screen Print training DVD

2nd Place Items:

- 8 MZX-UL 18"x20" Newman Roller Frames with mesh, wrenches, 4 Newman constant force manual squeegees
- 1qt. each of white and black ink
- 1 qt. Murakami emulsion
- 4 squeegees with handles
- 5-pak artwork

3rd Place Items:

- 6 MZX-UL 18"x20" Newman Roller Frames with mesh, wrenches, 3 Newman constant force manual squeegees
- \$100 Certificate toward the purchase of products from NazDar

Post Secondary

1st Place Items:

- 12 MZX-UL 18"x20" Newman Roller Frames with mesh, wrenches, 6 Newman constant force manual squeegees
- 1 gal. Murakami Emulsion
- 1-set M3 Series ink
- 1 coating trough
- 6 squeegees with handles
- 1 10-step exposure calculator
- AccuRIP software OR Separation Studio separation software
- 10-pak of artwork
- Operation Screen Print training DVD

2nd Place Items:

- 8 MZX-UL 18"x20" Newman Roller Frames with mesh, wrenches, 4 Newman constant force manual squeegees
- 1qt. each of white and black ink
- 1 qt. Murakami emulsion
- 4 squeegees with handles
- 5-pak artwork

3rd Place Items:

- 6 MZX-UL 18"x20" Newman Roller Frames with mesh, wrenches, 3 Newman constant force manual squeegees
- \$100 Certificate toward the purchase of products from NazDar

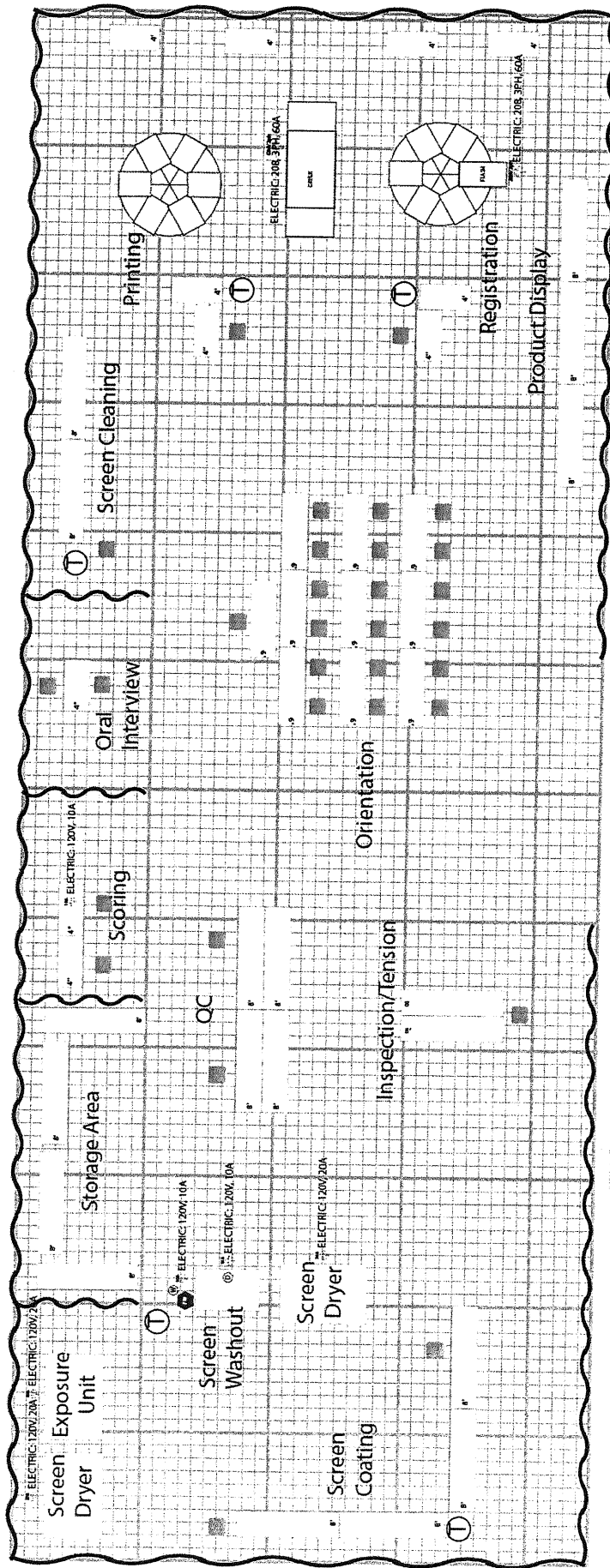
Screen Printing Schedule for Wednesday, June 24, 2015						
		H. S. Oral	Q. C.	Screen	Post Secondary	Post Secondary
Time	Minutes	Interview	Problem	Coating	Screen	
8:00	Test 15	S 1			Coating	
8:15	Rotation 5				PS 1	Image
8:20	Test 15	S 2	S 1			Registering
8:35	Rotation 5				PS 2	PS 1
8:40	Test 15	S 3	S 2			
8:55	Rotation 5				PS 3	PS 2
9:00	Test 15	S 4	S 3			
9:15	Rotation 5				PS 4	PS 3
9:20	Test 15	S 5	S 4			
9:35	Rotation 5					PS 4
9:40	Test 15	S 6	S 5	S 1	Inspection	
9:55	Rotation 5				Tension	
10:00	Test 15	S 7	S 6	S 2	PS 1	Image
10:15	Rotation 5					Printing
10:20	Test 15	S 8	S 7	S 3	PS 2	PS 1
10:35	Rotation 5					
10:40	Test 15	S 9	S 8	S 4	PS 3	PS 2
10:55	Rotation 5					
11:00	Test 15	S 10	S 9	S 5	PS 4	PS 3
11:15	Rotation 5					
11:20	Test 15	S 11	S 10	S 6		PS 4
11:35	Rotation 5					
11:40	Break 30	Lunch	Lunch	Lunch	Lunch	Lunch
12:10	Test 15	S 12	S 11	S 7	Exposure	
12:25	Rotation 5				Washout	
12:30	Test 15	S 13	S 12	S 8	PS 1	
12:45	Rotation 5					
12:50	Test 15	S 14	S 13	S 9	PS 2	
1:05	Rotation 5					
1:10	Test 15	S 15	S 14	S 10	PS 3	
1:25	Rotation 5					
1:30	Test 15	S 16	S 15	S 11	PS 4	
1:45	Rotation 5					
1:50	Test 15	S 17	S 16	S 12		
2:05	Rotation 5					
2:10	Test 15	S 18	S 17	S 13		
2:25	Rotation 5					
2:30	Test 15	S 19	S 18	S 14		
2:45	Rotation 5					
2:50	Test 15	S 20	S 19	S 15		
3:05	Rotation 5					
3:10	Test 15	S 21	S 20	S 16		
3:25	Rotation 5					
3:30	Test 15	PS 1	S 21	S 17		
3:45	Rotation 5					
3:50	Test 15	PS 2	PS 1	S 18		
4:05	Rotation 5					
4:10	Test 15	PS 3	PS 2	S 19		
4:25	Rotation 5					
4:30	Test 15	PS 4	PS 3	S 20		
4:45	Rotation 5					
4:50	Test 15		PS 4	S 21		
5:05	Finish					

Screen Printing Technology

Utilities

Equipment

Furnishings



- ⚡ = Water Connection
- ⚡ = Power Washer
- Ⓜ = Drain Outlet
- Ⓜ = Trashcan
- Ⓜ = 4 ft. table
- Ⓜ = 6 ft. table
- Ⓜ = 8 ft. table
- Ⓜ = 1 sq. ft.
- Ⓜ = Chair
- Ⓜ = 3 ft. Pipe/Drape

Screen Printing Schedule for Thursday, June 25, 2015					
		Inspection	Exposure	Image	Image
Time	Minutes	Tensioning	Washout	Registering	Printing
8:00	Test 15	S 1			
8:15	Rotation 5				
8:20	Test 15	S 2	S 1		
8:35	Rotation 5				
8:40	Test 15	S 3	S 2	S 1	
8:55	Rotation 5				
9:00	Test 15	S 4	S 3	S 2	S 1
9:15	Rotation 5				
9:20	Test 15	S 5	S 4	S 3	S 2
9:35	Rotation 5				
9:40	Test 15	S 6	S 5	S 4	S 3
9:55	Rotation 5				
10:00	Test 15	S 7	S 6	S 5	S 4
10:15	Rotation 5				
10:20	Test 15	S 8	S 7	S 6	S 5
10:35	Rotation 5				
10:40	Test 15	S 9	S 8	S 7	S 6
10:55	Rotation 5				
11:00	Test 15	S 10	S 9	S 8	S 7
11:15	Rotation 5				
11:20	Test 15	S 11	S 10	S 9	S 8
11:35	Rotation 5				
11:40	Test 15	S 12	S 11	S 10	S 9
11:55	Break 30	Lunch	Lunch	Lunch	Lunch
12:25	Test 15	S 13	S 12	S 11	S 10
12:40	Rotation 5				
12:45	Test 15	S 14	S 13	S 12	S 11
1:05	Rotation 5				
1:10	Test 15	S 15	S 14	S 13	S 12
1:25	Rotation 5				
1:30	Test 15	S 16	S 15	S 14	S 13
1:45	Rotation 5				
1:50	Test 15	S 17	S 16	S 15	S 14
2:05	Rotation 5				
2:10	Test 15	S 18	S 17	S 16	S 15
2:25	Rotation 5				
2:30	Test 15	S 19	S 18	S 17	S 16
2:45	Rotation 5				
2:50	Test 15	S 20	S 19	S 18	S 17
3:05	Rotation 5				
3:10	Test 15	S 21	S 20	S 19	S 18
3:25	Rotation 5				
3:30	Test 15		S 21	S 20	S 19
3:45	Rotation 5				
3:50	Test 15			S 21	S 20
4:05	Rotation 5				
4:10	Test 15				S 21
4:25	Rotation 5				
4:30	Finish				

SkillsUSA 2015

Performance Test Inventories

Screen Printing Technology

A. Performance Test Inventories for 30 Contestants at the 2015 Competition:

1. Major Screen Printing Equipment
2. Tools
3. Materials

B. Major Screen Printing Equipment Inventory

- 1 - HIX Little Pro / 1 Station Manual Rotary Screen Printer and Dryer (WRAPPED FOR SHIPPING)
 - 1 - HIX NP 6-color / 4 Station Manual Rotary Screen Printer (WRAPPED FOR SHIPPING)
 - 1 - HIX E-2408 Electric Conveyor Dryer 220 Volt (INSTALL WHEELS WITH NO CRATE)
 - 1 - HIX TT- 180 Table Top Fluorescent UV Screen Exposure Unit (BOXED)
 - 1 - Washout Booth (BOXED)
 - 2 - HIX SH - 1818 Automatic 18"X18" Spot Heater (BOXED FOR SHIPMENT BY TRUCK)
 - 2 - HIX SD-2632 Screen Dryer 26"X32" 120 Volt (UNBOXED)
 - 1 - HIX Model 750 Tension Meter (from 7 to 50 Newtons/cm)
 - 1 - Reten Field Demo Kit (Supplied by PSU Screen Print Lab)
 - 1 - Tension Jack Kit (16789)
 - 30 - HIX 21"X23" Reten Manual Screen Frame that hold a polyester screen. (Screen will be either 140 or 154 mesh count) Each contestant will need one screen.
 - 1 - Screen Coater
 - 10 - HIX 21"X23" Screens with Stencils (Stored at PSU Screen Print Lab)
 - 2 - Sets of 3 Screens with Stencils HIX 21"X23" (Stored at HIX Plant)
 - 3- Inspection Screens with Stencils (Supplied by PSU Screen Print Lab)
 - 3- Tensioning Screens with 154 Mesh Screen Fabric (Supplied by PSU Screen Print Lab)
- ##### **C. Tools Inventory**
- 24 - Eight foot tables (Supplied by Kentucky Exposition Center)
 - 20 - Chairs (Supplied by Kentucky Exposition Center)
 - 1- Stool for Quality Control Station (Optional)
 - 3 - 20 Minute Timer (Supplied by Hix)
 - 10 - Ink Knives
 - 10- Squeegees
 - 2 - ½" Masking Tape Dispenser
 - 2 - Basket (Hanes Shirt Case)
 - 1 - High Pressure Washer (Supplied by Jess Hudson)
 - 1 - Garden Hose with Nozzle (Supplied by Jess Hudson)
 - 1 - Wet Dry Vacuum (Supplied by Jess Hudson)
 - 6 - Pair Safety Glasses
 - 3 - Dozen Ear Plugs
 - 3 - Box of Latex Gloves, Large Size
 - 6 - Clip boards (Supplied by Jess Hudson)
 - 24 - 12 Inch Metal Rulers (Supplied by Jess Hudson)
 - 1 - T Square
 - 1 - Pantone Color Matching Guides (Supplied by PSU)
 - 1 - Assorted Hand Tools Kit
 - 1 - 4 Wheel Dolly
 - 1 - Exposure Booth Ceiling (Supplied by SkillsUSA on Site)
 - 1 - Assortment of Extension Cords

Materials Inventory

- 5 - Cases **White** Hanes Tee Shirts (L Size)
- 3 - Cases **White** Hanes Tee Shirts (XL Size)
- 30- Little Pro Rotary Press and Dryer Operation Manuals (**Supplied by HIX Corp.**)
- 30 - SH16 X16 Automatic Spot Heater Operation Manuals (**Supplied by HIX Corp.**)
- 30 - 2410 NP II Conveyor Dryer Operation Manuals (**Supplied by HIX Corp.**)
- 30 - TT- 180 Screen Exposure Unit Operation Manuals (**Supplied by HIX Corp.**)
- 30 - SD-2632 Screen Dryer 26"X32" 120 Volt Manuals (**Supplied by HIX Corp.**)
- 30 - Reten Frame Tensioning Assembly Instructions
- 30 - Reten Frame Tensioning Instruction Sheets for orientation
- 6 - Rolls of Block Out Tape
- 1 - Gallon Ulano Emulsion
- 1 - Gallon Emulsion Remover
- 1 - Gallon Screen Wash
- 1 - Gallon Mineral Spirits
- 1 - Emulsion Remover Spray Bottle
- 3 - Emulsion Screen Wash Spray Bottle
- 3 - Cans of **Heat Resistant** Shirt Board Adhesive
- 1 - Quart of Black Plastisol (**Supplied by PSU**)
- 1 - Quart of White Plastisol (**Supplied by PSU**)
- 1 - Quart of Blue Plastisol (**Supplied by PSU**)
- 1 - Quart of Red Plastisol (**Supplied by PSU**)
- 1 - Quart of Yellow Plastisol (**Supplied by PSU**)
- 1 - Quart of Brown Plastisol (**Supplied by PSU**)
- 1 - Film Positive Art File (**Supplied by PSU**)
- 1 - Production Specification Packet (Tech Pack) (**Supplied by PSU**)
- 3 - Sets of 5 shirts for Quality Control Test all with printing defects (**Printed on Site**)
- 12 - Rolls of Paper Towels
- 2 - Rolls of ½" Masking Tape
- 3 - ½" Cellophane Tape Dispenser
- 48 - Number 2 Lead Pencils
- 6 - Black Sharpie Permanent Marker
- 3 - Stapler and Staples
- 3 - Small Trash Receptacle (**4 - Trash Barrels Supplied by Rubber Maid**)
- 35 - Contestant Orientation Manuals (**Supplied by HIX**)
- 30 - Written Test Booklets and 1 - Written Test Answer Key (**Supplied by Jess Hudson**)
- 30 - Written Test Scantron Sheets (**Supplied by SkillsUSA**)
- 30 - Oral Assessment Station Rating Sheets (**Supplied by Jess Hudson**)
- 30 - Printing Station Checklists (**Supplied by Jess Hudson**)
- 30 - Exposure Station Checklists (**Supplied by Jess Hudson**)
- 30 - Exposure Checklists (**Supplied by Jess Hudson**)
- 30 - Reclaiming Checklists (**Supplied by Jess Hudson**)
- 30 - Quality Control Problem Worksheets with Checklist (**Supplied by Jess Hudson**)
- 30 - Tensioning & Inspection Station Worksheets with Checklist (**Supplied by Jess Hudson**)
- 1 - Material Safety Data Sheets Manual (**Supplied by HIX Corp.**)

Image specifications (Tech Pack Page 1)

COMMENTS:	SUPPORT FILES (eps/ai): None Needed	TECHNIQUE: 3 color flat print	SEASON/GROUP: SKILLSUSA DIVISION: TIES NATIONALS	DATE: 3/20/09 ORIGINATOR: Chris Huitt
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Image specifications (Tech Pack Page 2)

PRINT ORDER

1 PANTONE 541 2 PANTONE 485 3 BLACK



Image Printing Station Design 1

PROJECT:	SkillsUSA 2010 Folder	DESIGNER:	SkillsUSA Placido	DATE:	04/09/2010
			SkillsUSA Nationals		Chris Hult





I BELIEVE.

In the American way of life.

In education. In fair play.

Satisfaction is achieved by good work.

In high moral and spiritual standards.

"SkillsUSA: Champions at Work."

48th Annual National Leadership and Skills Conference, Kansas City June 20-June 25, 2010

Print Order

1 GREY 431

2 YELLOW 123

3 BROWN 469

4 HIGHLIGHT WHITE

5 BLACK

Artwork shown not actual size.

Actual width = 10.85"



CONTEST SCORING CRITERIA

Screen Printing Technology
Contest

Johnny Shell
Chair

Skill Description	Maximum Points
1.Screen Preparation (Tensioning)	100
2.Screen Coating	50
3.Screen Exposure & Washout	100
4.Screen Blockout	50
5.Image Registration	100
6.Image Printing	200
7.Screen Reclaiming	100
8.Quality Control Problem	100
9.Written Knowledge Test	100
10.Oral Professional Assessment	100
11.Total Points	1000
12.	
13.	
14.	
15.	
16.	
17.	
18.	
19.	
20.	
21.	
22.	
23.	
24.	
Résumé submitted? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (5% penalty)	

Tie Breakers

1. SkillsUSA Professional Development Program Test
2. Number of Salable Garments Printed at the Shirt Printing Station
- 3.