



GRAPHIC IMAGING – SUBLIMATION



SkillsUSA Championships Technical Standards

PURPOSE

To evaluate each competitor's preparation for employment and to recognize outstanding students for excellence and professionalism as a sublimation technician in the field of graphic imaging.

First, download and review the General Regulations at: <http://updates.skillsusa.org>.

ELIGIBILITY

Open to active SkillsUSA members enrolled in programs with graphic communications as the occupational objective.

CLOTHING REQUIREMENTS

Class E: Competition Specific — Business Casual

- Official SkillsUSA white polo shirt
- Black dress slacks or black dress skirt (knee-length minimum)
- Black closed-toe dress shoes

Note: Wearing socks or hose is no longer required. If worn, socks must be black dress socks and hose must be either black or skin-tone and seamless/nonpattern.

These regulations refer to clothing items that are pictured and described at www.skillsusastore.org. If you have questions about clothing or other logo items, call 1-888-501-2183.

Note: Competitors must wear official competition clothing to the competition orientation meeting and the post-competition meeting and debrief.

EQUIPMENT AND MATERIALS

The technical committee will supply all equipment and materials. Competitors are not required to furnish any materials or tools.

All competitors must create a one-page resume. See “Resume Requirement” below for guidelines. Additionally, competitors will submit a hard copy of their resume as part of the competition.

RESUME REQUIREMENT

Competitors must create a one-page resume to submit online. SkillsUSA national competitors should submit their resume by June 1. The link for resume submission will be published on <http://updates.skillsusa.org> on May 1. Failure to submit a resume will result in a 10-point penalty.

Your resume must be saved as a PDF file type using file name format of “Last Name_First Name.” For example, “Amanda Smith” would save her resume as **Smith_Amanda**. If you need assistance with saving your file as a PDF, visit [the Adobe website](#) for more information.

Note: Check the Competition Guidelines and/or the updates page on the SkillsUSA website at <http://updates.skillsusa.org>.

PROHIBITED DEVICES

Cell phones or other electronic devices not approved by a competition’s national technical committee are **NOT** allowed in the competition area. Please follow the guidelines in each technical standard for approved exceptions. Technical committee members may also approve exceptions onsite during the SkillsUSA Championships if deemed appropriate.

Penalties for Prohibited Devices

If a competitor’s electronic device makes noise or if the competitor is seen using it at any time during the competition, an official report will be documented for review by the SkillsUSA Championships director. If confirmed that the competitor used the device in a manner which compromised the integrity of the competition, the competitor’s scores may be canceled.

SCOPE OF THE COMPETITION

The competition assesses knowledge and skills used by industries in the field of graphic imaging sublimation technology production processes.

KNOWLEDGE PERFORMANCE

The knowledge competition will include a written exam assessing the general knowledge of graphic imaging sublimation technology processes. Written portions may be included during the skills portion of the competition. Knowledge of terms and principles used in graphic imaging sublimation processes will be required for the skills demonstration portion of the performance test.

SKILLS PERFORMANCE

The skills performance test will include a demonstration of individual skills in producing graphic imaging sublimation products using equipment and technologies meeting graphic imaging sublimation industry standards. Some of the procedures to be demonstrated include, but are not limited to, designing a graphics to be used with the sublimation process by utilizing the template provided in the competition. They will also be asked to save those designs in a print ready format and print the transfer to a provided sublimation-enabled printer. Students will also be tested on transferring sublimation graphics to a number of different types of substrate, such as mugs, mouse pads, metal, glass, ceramic tiles, hardboard, polyester knit cloth, slate and fiber reinforced plastic. A quality assessment will be performed on the product of each completed graphic imaging sublimation procedure. The students will also be judged on their capability to complete the product in a timely manner being aware of the need for repeatable production, salable product and a safe result.

COMPETITION GUIDELINES

1. The competition will assess student participants' knowledge and skills of graphic imaging sublimation at various testing stations that will include:
 - a. Design a digital image.
 - b. Print a transfer sheet using a sublimation printer.
 - c. Also, the students will be tested on 3 to 4 other transferring stations that could include:
 - 1.) Transfer a graphic on a mug or other drinkware using a mug press.
 - 2.) Transfer a graphic on a mug or other drinkware using a wrap and a convection oven.
 - 3.) Transfer on a mouse pad or other neopren or closed foam-based product.
 - 4.) Transfer on a metal/aluminum surface. (e.g., license plate tag or frame)
 - 5.) Transfer on a glass surface. (e.g., cutting board)
 - 6.) Transfer on ceramic tiles. (e.g., mosaic tile)
 - 7.) Transfer on hard board. (e.g., cell phone stand)
 - 8.) Transfer on polyester knit fabric. (e.g., T-shirt)
 - 9.) Transfer on stone. (e.g., slates)
 - 10.) Transfer on fiberglass reinforced plastic (FRP). (e.g., key tags)
 - d. Take a written technical knowledge test.
 - e. Participate in an oral professional assessment and submit a hard-copy resume to an interviewer.
2. For equipment specifications, check: <http://updates.skillsusa.org>.
3. As soon as the competitors have completed an assigned job and have fulfilled all the requirements presented at the testing station, they should notify the judge. The scorekeeper and judge will gather the competitors' products or worksheets for evaluation and scoring.

STANDARDS AND COMPETENCIES

GIS 1.0 — Digital Image Design

- 1.1. Set up computer operation.
 - 1.1.1. Open design software.
 - 1.1.2. Download digital images from the flash drive into “Competitor Folder” on the desktop.
 - 1.1.3. Save one photo image with proper naming convention for software being used (Example: “Competitor_X_Photo.psd”, with “X” replaced with the competitor number).
- 1.2. Create Mosaic Tile design with design software.
 - 1.2.1. Reset all tools. (to Essentials)
 - 1.2.2. View rulers in inches.
 - 1.2.3. Create four (4.25” x 4.25”) ceramic tiles in orientations of horizontal, vertical or square design using CMYK at 300dpi.
 - 1.2.4. Save tile layout file, with proper naming convention for software being used (Example: “Competitor_X_Final Tile Design.psd”, with “X” replaced with competitor number).
 - 1.2.5. Place photo image from Competitor Folder.
 - 1.2.6. Place CMYK SkillsUSA logo from the provided flash drive.
 - 1.2.7. Include required elements and techniques. (each element on individual layer)
 - 1.2.7.1. Type one or more words with minimum size of 20-point font.
 - 1.2.7.2. Use of Design Effects (minimum of three) such as:
 - Emboss
 - Drop shadow
 - Outer glow
 - Warp text
 - Pantone spot color (using the Pantone Spot Color to Process library)
 - Layer Mask
 - Reversed-out type
 - 1.2.8. Save “Competitor_X_Final Tile Design.psd” file to memory stick for printing station.

GIS 2.0 — Print a transfer sheet using a sublimation printer

- 2.1. Set up and print a proofing file.
 - 2.1.1. Print mosaic tile to a regular color inkjet printer.
 - 2.1.1.1. Adjust document size to allow competitor number to be printed in upper right-hand corner.
 - 2.1.1.2. Type “Competitor Number” in upper right-hand corner of document.
 - 2.1.1.3. Select “Landscape Orientation,” “Center Image” and “Scale to Fit Media” to “Letter” size paper.
 - 2.1.1.4. Print and give proof copy to judge.
- 2.2. Save tile segments into four separate files, named accordingly:
 - 2.2.1. In Photoshop, “Save as a Copy” of file with layers unchecked in the “Print” dialogue box, creating flattened image.
 - 2.2.2. In Illustrator, flatten layers, “Save a Copy” from the “File” menu.

- 2.3. Use flattened copy of file for separating the four tile images.
- 2.4. Select “Snap to Guides,” add new vertical guides at 4¼", 8½" and 12¾".
- 2.5. Reposition important image parts away from tile breaks.
- 2.6. Use image rotation to flip canvas horizontally.
- 2.7. Select or Mask the 4¼" x 4 ¼" area of the first tile segment.
- 2.8. Copy each selection and paste it to the four new files.
 - 2.8.1. Name each new file “Tile_1” and consecutive files “Tile_2”, “Tile_3” and “Tile_4”.
 - 2.8.2. Adjust each new file to accommodate a 1/16" bleed (document size becomes 4.375").
 - 2.8.2.1. Photoshop: Change size in the Print dialogue box.
 - 2.8.2.2. Illustrator: Change size in the Artboard dialogue box.
- 2.9. Print individual tile segment documents on 8½"x11" from a sublimation printer.

GIS 3.0 — Print a graphic on mugs using a mug press

- 3.1. Set up mug press for printing operation.
 - 3.1.1. Preheat mug press to 400 degrees.
 - 3.1.2. Set timer for 2 minutes 15 seconds.
 - 3.1.3. With the press open, adjust the pressure setting to medium pressure.
- 3.2. Print sublimation transfers on ceramic mug.
 - 3.2.1. Measure and cut the image transfer to fit the mug.
 - 3.2.2. Wrap the transfer around the mug and center.
 - 3.2.3. Tape the transfer to the mug with heat resistant tape.
 - 3.2.4. Place the mug in the press with the handle facing out.
 - 3.2.5. Close the press (the handle will lock into place when closed) to start the timer
 - 3.2.6. Open the press when the timer sounds and remove the mug.
 - 3.2.7. Remove heat tape from transfer and peel paper from the mug.
 - 3.2.7.1. Take care to avoid scratching the poly coating while the mug is hot.
 - 3.2.8. Stop dye sublimation by dipping mug in room temperature water (optional).
- 3.3. Evaluate image quality.
- 3.4. Equipment cleanup and workstation housekeeping.

GIS 4.0 — Print a graphic on mugs using a wrap and a convection oven

- 4.1. Set up convection oven for printing operation.
 - 4.1.1. Preheat convection oven to 400 degrees.
 - 4.1.2. Set timer for 11 seconds.
- 4.2. Print sublimation transfers on ceramic mug.
 - 4.2.1. Prepare images, mugs and wraps.
 - 4.2.2. Crop the image transfer.
 - 4.2.3. Wrap the transfer around the mug and center.
 - 4.2.4. Tape the transfer to the mug with heat resistant tape.
 - 4.2.5. Place the mug on the wrap.
 - 4.2.5.1. Hold wrap against the mug handle in correct position.
 - 4.2.5.2. Wrap silicone rubber around the mug and secure properly.
 - 4.2.5.3. Squeeze two halves of the mug wrap until it locks together.
 - 4.2.6. Place mug on the oven rack.
 - 4.2.7. Check timer setting and start timer for heating mug.

- 4.2.8. On timer signal, remove mug from oven.
- 4.2.9. Remove mug wrap and transfer.
 - 4.2.9.1. Place mug on table and release clasp.
 - 4.2.9.2. Remove heat tape from transfer and peel paper from mug.
 - 4.2.9.3. Stop dye sublimation by dipping mug in room temperature water (optional).
- 4.3. Evaluate image quality.
- 4.4. Equipment cleanup and workstation housekeeping.

GIS 5.0 — Print on a mouse pad

- 5.1. Set up press for preprint operation.
 - 5.1.1. Preheat transfer press to 400 degrees.
- 5.2. Pre-press the mouse pad. (*Note:* Section 5.2 pre-press is optional and may be omitted.)
 - 5.2.1. Set timer for 10 seconds.
 - 5.2.2. Adjust the press pressure.
 - 5.2.3. Place mouse pad on press and cover with a Teflon sheet.
 - 5.2.4. Press mouse pad to remove excess moisture.
 - 5.2.5. Remove mouse pad from press and lay on flat surface for cooling.
- 5.3. 5.3 Transfer the print to a mouse pad.
 - 5.3.1. Monitor the transfer press temperature (400 degrees Fahrenheit or 205 degrees Celsius).
 - 5.3.2. Measure and cut the transfer to proper size to fit the mouse pad.
 - 5.3.3. Place the transfer onto the mouse pad in proper position.
 - 5.3.4. Use heat transfer tape to attach the mouse pad to the transfer.
 - 5.3.5. Place a Teflon sheet on the press.
 - 5.3.6. Put the mouse pad and the transfer on the press, transfer on top face down.
 - 5.3.7. Put another Teflon sheet on top of the transfer.
 - 5.3.8. Reset heat transfer press timer for 50-second dwell.
 - 5.3.9. Check heat transfer press temperature for 400 degrees.
 - 5.3.10. Press the mouse pad and transfer with medium pressure until the timer alarm sounds.
 - 5.3.11. Remove the transfer immediately after printing.
 - 5.3.12. Place mouse pad on counter and let it cool.
- 5.4. Evaluate image quality related to resolution, definition and acutance.
- 5.5. Equipment cleanup and workstation housekeeping.

GIS 6.0 — Print on a metal surface (license plate)

- 6.1. Set up heat press for printing operation.
 - 6.1.1. Preheat heat press to 400 degrees.
 - 6.1.2. Set timer for 1 minute 45 seconds.
 - 6.1.3. Adjust heat press for medium pressure.
- 6.2. Print sublimation transfers on metal (license plate).
 - 6.2.1. Remove the protective film from the license plate.
 - 6.2.2. Place license plate face up on a table and position transfer face down atop license plate.
 - 6.2.3. Tape transfer and license plate together.
 - 6.2.4. Place Teflon sheet on heat press lower platen.

- 6.2.5. Place another Teflon sheet atop license plate and transfer.
- 6.2.6. Check heat press timer for 1 minute 45 seconds dwell.
- 6.2.7. Check heat press temperature for 400 degrees.
- 6.2.8. Close the heat press.
- 6.2.9. Press license plate and transfer until the timer alarm sounds.
- 6.2.10. Open the heat press.
- 6.2.11. Remove top Teflon sheet.
- 6.2.12. Remove tape and peel transfer from license plate.
- 6.2.13. Place license plate on a table and allow it to cool.
- 6.3. Evaluate image quality.
- 6.4. Equipment clean up and workstation housekeeping.

GIS 7.0 — Print on a glass surface (cutting board)

- 7.1. Set up heat press for preprint operation.
 - 7.1.1. Preheat heat press to 400 degrees.
 - 7.1.2. Set timer for 9 minutes.
 - 7.1.3. Adjust heat press medium pressure to avoid breaking the glass cutting board.
- 7.2. Print image on a glass cutting board.
 - 7.2.1. Measure and cut the image transfer to fit the glass cutting board.
 - 7.2.2. Position transfer and cutting board on the heat press.
 - 7.2.2.1. Place transfer face down on the cutting board.
 - 7.2.3. Apply heat resistant tape to hold transfer and cutting board in position.
 - 7.2.4. Place a ½” to ¾” Nomex felt pad on heat press lower platen.
 - 7.2.5. Place a Teflon sheet on felt pad.
 - 7.2.6. Place the cutting board face up on Teflon sheet.
 - 7.2.7. Place transfer face down on cutting board.
 - 7.2.8. Place a second Teflon sheet atop the transfer and cutting board.
 - 7.2.9. Check press temperature for 400 degrees and timer for approximately 9 minutes.
 - 7.2.10. Check press setting for medium pressure.
 - 7.2.11. Close the heat press.
 - 7.2.12. Press cutting board and transfer until the timer alarm sounds.
 - 7.2.13. Open the heat press, wearing gloves. (*Note:* The 400-degree heat press, transfer paper and cutting board will burn hands.)
 - 7.2.14. Remove top Teflon sheet.
 - 7.2.15. Remove the glass cutting board from heat press.
 - 7.2.16. Remove heat resistant tape and peel transfer paper from glass cutting board.
 - 7.2.17. Place glass cutting board on a cool smooth surface and let it air cool.
- 7.3. Evaluate image quality.
- 7.4. Equipment cleanup and workstation housekeeping.

GIS 8.0 — Print on tiles (ceramic)

- 8.1. Set up press for preprint operation.
 - 8.1.1. Preheat heat press to 400 degrees.
 - 8.1.2. Set timer for 8 minutes.
 - 8.1.3. Adjust the press for medium pressure.
- 8.2. Print sublimation transfers on tiles. (ceramic)
 - 8.2.1. Measure and cut image transfer to fit tile.

- 8.2.2. Position transfer and tile on the heat press.
 - 8.2.2.1. Place transfer face down on the tile face.
- 8.2.3. Apply heat resistant tape to hold the sublimation transfer and tile in position.
- 8.2.4. Place a ½” to ¾” Nomex felt pad on bottom platen of heat press.
- 8.2.5. Place a piece of protective Teflon sheet atop Nomex pad.
- 8.2.6. Place tile face up on Teflon sheet. (*Note:* Transfer image will be taped to the tile face to face.)
- 8.2.7. Place a second Teflon sheet atop the transfer and tile.
- 8.2.8. Check heat press timer for an 8- minute dwell.
- 8.2.9. Check heat press temperature for 400 degrees.
- 8.2.10. Close the heat press.
- 8.2.11. Press tile and transfer until the timer alarm sounds.
- 8.2.12. Open the heat press, wearing gloves. (*Note:* The 400-degree heat press, transfer paper and tile will burn hands.)
- 8.2.13. Remove top Teflon sheet.
- 8.2.14. Remove heat resistant tape and peel transfer paper from tile.
- 8.2.15. Place tile on a cool smooth surface and let it air cool.
- 8.3. Evaluate image quality.
- 8.4. Equipment cleanup and workstation housekeeping.

GIS 9.0 — Print on hard board (game boards)

- 9.1. Set up press for preprint operation.
 - 9.1.1. Preheat heat press to 400 degrees.
 - 9.1.2. Set timer for approximately 1 minute.
 - 9.1.3. Adjust the press for medium pressure.
- 9.2. Print sublimation transfers on hardboard. (game boards)
 - 9.2.1. Measure and cut the image transfer to fit the hardboard.
 - 9.2.2. Place the sublimation transfer on the table face up.
 - 9.2.3. Place the hardboard face down onto transfer and center it in all directions.
 - 9.2.4. Place heat tape to hold sublimation transfer and hardboard together.
 - 9.2.5. Place a ½” to ¾” Nomex felt pad on bottom platen of heat press.
 - 9.2.6. Place a piece of protective Teflon sheet atop Nomex pad.
 - 9.2.7. Place hardboard face up on the Teflon sheet.
 - Note:* Transfer image will be taped to the hard board face to face.
 - 9.2.8. Place a second Teflon sheet atop the transfer and hardboard
 - 9.2.9. Check heat press timer for a 1- minute dwell
 - 9.2.10. Check heat press temperature for 400 degrees
 - 9.2.11. Close the heat press
 - 9.2.12. Press tile and transfer until the timer alarm sounds.
 - 9.2.13. Open the heat press, wearing gloves.
 - Note:* The 400-degree heat press, transfer paper and tile will bum hands
 - 9.2.14. Remove top Teflon sheet.
 - 9.2.15. Remove heat resistant tape and peel transfer paper from tile.
 - 9.2.16. Place the hard board on a cool surface and let it air cool
- 9.3. Evaluate image quality.
- 9.4. Equipment cleanup and workstation housekeeping.

GIS 10.0 — Print on polyester knit (T-shirt)

- 10.1. Set up press for preprint operation.
 - 10.1.1. Preheat heat press to 400 degrees.
 - 10.1.2. Set timer for approximately 10 seconds.
 - 10.1.3. Adjust the press for medium pressure.
- 10.2. Pre-press polyester t-shirt.
 - 10.2.1. Use lint roller to remove dust and lint.
 - 10.2.2. Place Teflon sheet on the lower platen of heat press.
 - 10.2.3. Place shirt on heat press with a second Teflon sheet between shirt back and front.
 - 10.2.4. Press for 10 seconds at 400 degrees with medium pressure.
 - 10.2.5. Allow shirt to cool before positioning transfer.
- 10.3. Print sublimation transfers on T-shirt.
 - 10.3.1. Trim excess edges from transfer.
 - 10.3.2. Place Teflon sheet on the lower platen of heat press.
 - 10.3.3. Place shirt on heat press with a second Teflon sheet between front and back of shirt.
 - 10.3.4. Position transfer face down on shirt, within vertical tolerance below the shirt collar.
 - 10.3.5. Use heat transfer tape to attach the transfer to shirt.
 - 10.3.6. Place Teflon sheet on top of transfer.
 - 10.3.7. Reset heat transfer press timer for 55-second dwell.
 - 10.3.8. Check heat transfer press temperature for 400 degrees.
 - 10.3.9. Close the heat press.
 - 10.3.10. Press shirt and transfer until the timer alarm sounds.
 - 10.3.11. Open the press.
 - 10.3.12. Remove the Teflon sheets.
 - 10.3.13. Remove tape and peel transfer paper from shirt promptly.
- 10.4. Evaluate image quality.
- 10.5. Equipment clean up and workstation housekeeping.

GIS 11.0 — Print on stone

- 11.1. Set up press for preprint operation.
 - 11.1.1. Preheat heat press to 400 degrees.
 - 11.1.2. Set timer for approximately 1 minute 20 seconds.
 - 11.1.3. Adjust the press for medium pressure.
- 11.2. Print sublimation transfers on stone.
 - 11.2.1. Measure and cut image transfer to fit stone.
 - 11.2.2. Position transfer and stone on the heat press.
 - 11.2.2.1. Place transfer face down on the stone face.
 - 11.2.3. Apply heat resistant tape to hold the sublimation transfer and stone in position.
 - 11.2.4. Place a ½” to ¾” Nomex felt pad on bottom platen of heat press.
 - 11.2.5. Place a piece of protective Teflon sheet atop Nomex pad.
 - 11.2.6. Place stone face up on Teflon sheet.

Note: Transfer image will be taped to the stone face to face.
 - 11.2.7. Place a second Teflon sheet atop the transfer and stone.
 - 11.2.8. Check heat press timer for a 1 minute 20 seconds dwell.

- 11.2.9. Check heat press temperature for 400 degrees.
- 11.2.10. Close the heat press.
- 11.2.11. Press stone and transfer until the timer alarm sounds.
- 11.2.12. Open the heat press wearing gloves.
 - Note:* The 400-degree heat press, transfer paper and stone will burn hands.
- 11.2.13. Remove top Teflon sheet.
- 11.2.14. Remove heat resistant tape and peel transfer paper from stone.
- 11.2.15. Place stone on a cool smooth surface and let it air cool.
- 11.3. Evaluate image quality
- 11.4. Equipment cleanup and workstation housekeeping

GIS 12.0 — Print on fiberglass reinforced plastic

- 12.1. Print sublimation transfers on fiberglass reinforced plastic (FRP) materials.
 - 12.1.1. Remove from the FRP sign blank's protective film.
 - 12.1.2. Place the transfer face up on workstation table.
 - 12.1.3. Center the FRP sign blank to be printed on in all directions.
 - 12.1.4. Tape the FRP sign blank to be printed to the transfer.
 - 12.1.5. Place a Teflon sheet on the lower platen of heat press.
 - 12.1.6. Place the transfer face up on the Teflon sheet.
 - 12.1.7. Place the FRP sign blank on the transfer followed by a second sheet of Teflon.
 - 12.1.8. Check heat press timer for a 1 minute 45-second dwell.
 - 12.1.9. Check heat press temperature for 400 degrees.
 - 12.1.10. Close the heat press.
 - 12.1.11. Remove Teflon and transfer from the FRP sign blank, which has a transferred image.
 - 12.1.12. Place the FRP sign on a cool surface and let it air cool.
- 12.2. Evaluate image quality.
- 12.3. Equipment cleanup and workstation housekeeping.

GIS 13.0 — Print on pennant or car flag

- 13.1. Set up press for preprint operation.
 - 13.1.1. Preheat transfer heat press to 400 degrees.
 - 13.1.2. Set timer for approximately 45 seconds.
 - 13.1.3. Adjust the press for medium pressure.
- 13.2. Transfer an image to a pennant or car flag.
 - 13.2.1. Measure and cut the transfer to proper size to fit car flag.
 - 13.2.2. Accurately position a transfer onto a car flag blank.
 - 13.2.3. Place a Teflon sheet on the press.
 - 13.2.4. Put car flag and transfer on the heat press, transfer on top face down.
 - 13.2.5. Put another Teflon sheet on top of the transfer and car flag.
 - 13.2.6. Check heat transfer press timer for 45-second dwell.
 - 13.2.7. Check heat transfer press temperature for 400 degrees.
 - 13.2.8. Close the heat press.
 - 13.2.9. Press car flag and transfer with medium pressure.
 - 13.2.10. Open the heat press when the timer alarm sounds.
 - 13.2.11. Remove Teflon sheet and peel transfer paper from car flag immediately.
 - 13.2.12. Place car flag on counter and let it cool.

- 13.3. Evaluate image quality.
- 13.4. Equipment cleanup and workstation housekeeping.

GIS 14.0 — Take a written technical knowledge test

- 14.1. Match various types of sublimation printing equipment to their function.
- 14.2. Measure an image with a ruler and find the vertical center line of the image.
- 14.3. Achieve a score of 70% or greater on the written exam.

GIS 15.0 — Participate in an oral professional assessment

- 15.1. Submit a one-page, typewritten résumé to an interviewer.
- 15.2. Respond positively to questions related to the five areas that follow:
 - 15.2.1. Describe personal ability to handle job assignments.
 - 15.2.2. Demonstrate ability to answer questions in technical terms.
 - 15.2.3. Explain how to handle workplace situations in a professional manner.
 - 15.2.4. Demonstrate critical thinking during the oral interview.
 - 15.2.5. Present a realistic self-concept.

GIS 16.0 — Perform a Quality Control Assessment

- 16.1. Evaluate decorated products and assess the quality of the image. Criteria include image placement, image alignment, flaws in the printed image, etc.

COMMITTEE IDENTIFIED ACADEMIC SKILLS

The technical committee has identified that the following academic skills are embedded in this competition.

Math Skills

- Read a ruler (inch system, metric system, point/pica system.)
- Use fractions to solve practical problems.
- Use percentages multiplied times formula for inks mixing.
- Simplify numerical expressions.
- Solve practical problems involving percentages.
- Solve single variable algebraic expressions.
- Calculations for image preparation. (Calculate proportional scaling solutions of two designs from artwork to garment, demonstrate ability to square and center an image during graphic imaging sublimation process.)

Science Skills

None Identified.

Language Arts Skills

- Provide information in conversations and in group discussions.
- Provide information in oral presentations.
- Demonstrate use of nonverbal communication skills: eye contact, posture and gestures using interviewing techniques to gain information.
- Demonstrate knowledge of appropriate reference materials.

CONNECTIONS TO NATIONAL STANDARDS

State-level academic curriculum specialists identified the following connections to national academic standards.

Math Standards

- Geometry
- Measurement
- Problem solving
- Communication
- Connections
- Representation

Source: NCTM Principles and Standards for School Mathematics. For more information, visit: www.nctm.org.

Science Standards

- Understands the structure and properties of matter.
- Understands the sources and properties of energy.
- Understands forces and motion.
- Understands the nature of scientific inquiry.

Source: McREL compendium of national science standards. To view and search the compendium, visit: www2.mcrel.org/compendium/browse.asp.

Language Arts Standards

- Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world, to acquire new information, to respond to the needs and demands of society and the workplace and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.
- Students apply a wide range of strategies to comprehend, interpret, evaluate and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies and their understanding of textual features. (e.g., sound-letter correspondence, sentence structure, context and graphics.)
- Students adjust their use of spoken, written and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
- Students use a variety of technological and information resources (e.g., libraries, databases, computer networks and video) to gather and synthesize information and to create and communicate knowledge.
- Students use spoken, written and visual language to accomplish their own purposes. (e.g., for learning, enjoyment, persuasion and the exchange of information.)

Source: IRA/NCTE Standards for the English Language Arts. To view the standards, visit: www.ncte.org/standards.