



SkillsUSA®

Graphics Imaging - Sublimation Performance

April 14, 2023

Canadian Valley Technology Center - El Reno

## **Graphics Imaging - Sublimation**

### Contestant Information Sheet

#### A. Purpose

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

#### B. Clothing Requirements

Dress code is school appropriate clothing with no school branding visible.

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.

#### C. Eligibility

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

#### D. Tools

Needed tools will be provided 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 Graphic Imaging - Sublimation Scorecard lists seven items that will not be evaluated during the current competition.

- Print on a mouse pad
- Print on coffee mug
- Print on polyester knit (t-shirt)
- Print on tile
- Print on license plate

Therefore, points for each of these five evaluation items will be recorded on the Graphic Imaging - Sublimation Printing Scorecard for every Contestant.

The Assignment and Rating Sheets for these five performance-testing areas are included in this Performance Test Plan.

## Graphics Imaging - Sublimation

### Scope of the Test

1. 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 valid performance of a Graphic Imaging - Sublimation Printing process will be determined by a technical committee. **Contestant skill levels** will be evaluated by the performance test judges.
  - A. Create a Digital Image Design
  - B. Print an Image Transfer
  - C. Print a Mosaic on Tiles
  - D. Print a graphic on mugs using a mug press, also mug wraps and a convection oven.
  - E. Print on a mouse pad and license plate.
  - F. Inspect decorated products for quality control
  - G. Take a written technical knowledge test
  - H. Submit a resume
2. This list of items that may be evaluated is taken from the Graphic Imaging - Sublimation Scorecard. As listed on the Screen-Printing Technology Scorecard each of the **nine** evaluation items listed above have an attending number of possible points. Performance testing station checklists may generate points in more than one of the **nine** evaluation areas. (Example: Printing on mugs or ceramic tiles will test some identical graphics imaging sublimation printing skills. Testing of identical skills will contribute points to a composite score on the Graphic Imaging - Sublimation Scorecard.)

#### A. Create a Digital Image Design

Create a folder on the flash drive with the following name, replacing X with your contestant number: GIS Content ContestantX

Select one of the digital images from the flash drive.

Save the image to your contestant folder with the following name, replacing X with your contestant number: GIS\_Contest Contestant X Photo.PSD.

Create Mosaic Tile design with Adobe Photoshop.

Reset All Tools and view rulers in inches.

Create the four (4.25" x 4.25") ceramic tiles, side by side, horizontal orientation.

Photoshop file, CMYK, 300dpi.

Save the file in your contestant folder with the following name replacing X with your contestant number: GIS\_Contest\_Contestant X tile design.PSD.

Include required elements & techniques (each element on individual layer).

Type one or more words with:

- minimum of sz20pt.

- Emboss w/130 depth, size 24px

- Outer glow with screen, opacity-75, spread-20, size-50

Place digital image from your contestant folder.

Place CMYK SkillsUSA logo from provided Flash Drive.

Type one or more WARPed words with: Shell-upper, Bend-50%.

Type one word (reversed type) (light color type against a dark color).

Use a Pantone Coated color in design.

## **B. Print an Image Transfer**

Open your Tile Design File: **GIS\_Contest\_Contestant X tile design.PSD.**

Select snap to guides, add new vertical-guides at 4-1/4", 8-1/2" and 12-3/4"

Reposition important image parts away from tile breaks.

Select the rectangular marquee tool to fixed ratio and size to 4-1/4" x 4-1/4"

Draw the marquee box, snapping to the first vertical guide.

Copy selection and paste it to a new file.

Change image size by adding 1/8" to both dimensions.

Use image rotation to flip canvas horizontal.

Save file as A1 and deselect selection.

Repeat copy selection and save file for the remaining three tile segments (A2, A3, A4).

Select "mirror image" in printer properties

Print files to sublimation printer.

## **C. Print a Mosaic Tile**

Preheat heat press to 400 degrees.

Set timer for 8 to 10 minutes.

Adjust the press for medium pressure.

Place the sublimation transfer on the work bench face up.

Place tiles face down on the transfer

Measure and cut image transfer to fit tile.

Note: Transfer should be slightly bigger than the tiles.

Use heat tape to tape tiles to sublimation transfer.

Note: Image transfer will be taped to the tiles face to face.

**LABEL** each tile with contestant number and A1 thru A4, using black marker.

Lay 5/8-inch Nomex felt pad on heat press bottom platen.

Place a piece of protective Teflon sheet atop Nomex pad.

Place transfer face up and tiles face down on Teflon sheet.

Place a second Teflon sheet atop the transfer and tiles.

Check heat press timer for an 8-to-10-minute dwell.

Check heat press temperature for 400 degrees.

Close the heat press.

Heat press tiles, medium pressure, 400°, 8 to 10 min., plus 1 min. for each additional tile.

Use gloves to remove tiles, tape and sublimation paper-ASAP (*LET TILES COOL*).

General area clean up.

Hand-in digital photograph jump drive with the four tiles to the judge.

Overall quality of the heat press process.

Returning to your seat indicates you are finished.

## **D. Print a graphic on mugs using a mug press**

Measure and cut the image transfer to fit the mug.

Position image transfer on mug.

Tape the transfer to the mug with heat resistant tape.

Place the mug in the press with the handle facing out.

Close the press (the handle will lock into place when closed) to start the timer.

Open press when the timer sounds (4 minutes) and remove mug.

Remove heat tape from transfer and peel paper from the mug.

### **Print a graphic on mugs using a wrap and a convection oven**

Measure and cut the image transfer to fit the mug.  
Position image transfer on mug.  
Tape the transfer to the mug with heat resistant tape.  
Install mug wrap to firmly press image transfer to mug surface.  
Place the mug and image transfer in the convection oven.  
Heat the mug and transfer to 400 degrees for 12 to 14 minutes.  
Put on oven glove before removing hot mug from the convection oven.  
Remove the transfer from the mug before in sticks.  
Stop the dye sublimation by dipping the mug in room temperature water.  
Place the printed mug on a cooling table to dry.  
Inspect the mug Transfer material that did not peel off.

### **E. Print on a mouse pad**

Position image transfer on mouse pad.  
Secure with heat transfer tape if necessary.  
Place first Teflon sheet on heated transfer press.  
Place image transfer and mouse pad on the Teflon sheet.  
Place second Teflon sheet on top of the image transfer.  
Heat the image transfer and mouse pad to 400 degrees for 40 seconds.  
Open heat transfer press and safely remove hot Teflon sheets and mouse pad.  
Place mouse pad on a cool surface to stop dye sublimation.  
Remove heat transfer tape and image transfer from mouse pad before it sticks.  
Inspect the mouse pad transfer material for peeling.  
Inspect the mouse pad for image transfer material that did not peel off.

### **F. Print on a metal surface (license plate)**

Remove the protective film from the license plate.  
With license plate face up on a table, position transfer face down on license plate.  
Tape transfer and license plate together.  
Place Teflon sheet on heat press lower platen.  
Place another Teflon sheet atop license plate and transfer.  
Check heat press timer for 1 minute 45 seconds dwell.  
Check heat press temperature for 400 degrees and close the heat press.  
Press license plate and transfer until the timer alarm sounds.  
Remove tape and peel transfer from license plate.

### **G. Print on polyester knit (t-shirt)**

Place shirt on heat press.  
Position transfer face down on shirt within vertical tolerance below shirt collar.  
Use heat transfer tape to attach the transfer to shirt.  
Close the heat press.  
Press shirt and transfer until the timer alarm sounds.  
Open heat press removes tape and peel transfer paper from shirt promptly.

#### **H. Print on stone (tile)**

Position transfer and stone on the heat press.

Apply heat resistant tape to hold the sublimation transfer and stone in position.

Close the heat press.

Press stone and transfer until the timer alarm sounds.

Open the heat press, **wearing gloves**.

Remove heat resistant tape and peel transfer paper from stone.

#### **I. Quality Control Problem**

Study image technical specifications.

Study the quality assurance worksheet scenario and inspection steps.

Inspect a quality assurance sample of five printed images.

#### **J. Participate in an oral professional assessment**

Submit a resume to an interviewer.

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

When a contestant has completed an assigned job, the contestant is to be seated in a chair placed at that testing station to stop performance timing. After the judge and timekeeper complete the performance rating sheet for each contestant's performance and procedure the contestant will be notified. The judge will gather the completed project and rating form and submit it to a scorekeeper for tabulation and posting on a **Graphics Imaging - Sublimation Scorecard**.

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

## SkillsUSA 2022

### Graphics Imaging Sublimation Printing Plan

#### Digital Image Design

#### Digital Image Design Assignment

Objective: Create a digital image design for printing a tile mosaic that is of salable quality.

0. Seated in your chair starts your time.
1. Create a folder on the flash drive with the following name, replacing X with your contestant number: GIS\_Content\_ContestantX
2. Save one image to your contestant folder with the following name, replacing **X** with your contestant number: **GIS\_Contest\_Contestant X Photo.PSD.**
3. Create Mosaic Tile design with Adobe Photoshop
4. Reset All Tools
5. View rulers in inches
6. Create the four (4.25" x 4.25") ceramic tiles, side by side, horizontal orientation Photoshop file, RGB, 300dpi.
7. Save the file in your contestant folder with the following name replacing X with your contestant number: GIS\_Contest ContestantX tile design.PSD.
8. Include required elements & techniques (each element on individual layer).
9. Type one or more words with:
  - Minimum of sz 20pt
  - Emboss w/ 130 depth, size 24px
  - Outer glow with screen, opacity-75, spread-20, size-50
10. Place digital image from your contestant folder.
11. Place CMYK SkillsUSA logo from provided Flash Drive.
12. Type one or more WARPed words with: Shell-upper, Bend-50%.
13. Type one word (reversed type) (*light color type against a dark color*).
14. Use a Pantone Coated color in design.

Judging: A tile printer will use the digital image design 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 design procedure. A maximum of forty (40) minutes is allocated to the total digital image design station procedure.

Time stops when the contestant notifies the time keeper.

Points: A maximum of one hundred (100) points may be given to the contestant for a high quality digital image designing performance.