Screen Printing Blueprint

The PrintED/SkillsUSA Screen Printing Technology competencies encompass the knowledge and skill set a student should master to exhibit proficiency in screen printing technology. The PrintED/SkillsUSA Screen Printing Technology Career Essentials Assessment test questions align with the PrintED/SkillsUSA Screen Printing Technology competencies.

This Blueprint contains the subject matter content for the Career Essentials - Assessment.

Note: To fully prepare for the Screen Printing SkillsUSA Championships contest, refer to the current year's SkillsUSA Championships Technical Standard, now included with your SkillsUSA Professional Membership. If you need help in accessing this benefit, contact the SkillsUSA Customer Care Team at 844-875-4557 or customercare@skillsusa.org.

Standards and Competencies
Competencies are weighted throughout the assessment. The percent shown is the weight of the competency. There are 50 questions per assessment.

Technology

12%
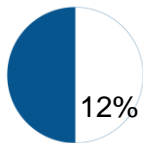
- Describe the screen printing process
- List the advantages of screen printing process versus offset lithography or digital printing a. Size of image b. Type of substrate c. Ink density (Four Color Process vs. Spot PMS colors d. Special inks e. Cost of equipment
- Describe the components of a screen printing press a. Frame b. Mesh c. Squeegee blade
- Define direct-to-screen
- Compare the features and specifications of 3 different types of automated screen printing
- Describe the workflow steps of screen printing process (Single color/inline or rotary press) a File creation b. Film output c. Screen creation d. Mounting screen on press e. Print production f. Clean up
- List common products produced by screen printing
- Assess the purpose and quality of each sample collected

Design and Prepress

19%
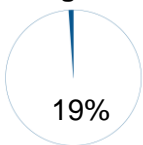
- Review features and capabilities of professional Page Layout software applications a. Adobe Illustrator
- Demonstrate use of computer menus, shortcut keys, and panels in illustration software
- Describe the different types of graphics used in screen printing a Line art b. Continuous tone c. Raster d. Vector
- Define Lines per Inch Resolution (Printing Press)
- Explain the use of an EPS file
- Demonstrate the proper setup of a document using an instructor specified page size
- Describe the use of paths in an illustration software program
- Define trapping
- Define overprint
- Discuss the use of layers in an illustration software program
- Define registration
- Describe frame, stencil and mesh
- Determine job specifications from a job ticket/docket

Frame and Mesh Preparation

7%
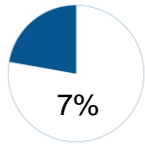
- List different mesh counts and thread diameters and mesh type (Calendared, Steel, Fabric)
- List different frame types/construction
- Describe the use of a tension meter

Stencil and Screen Preparation

13%
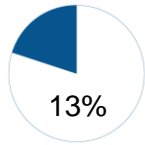
- Specify the workflow steps used to make a screen
- Describe emulsion used to make a screen (capillary, liquid and film)
- Explain the use of emulsion when making a screen
- Describe requirements to prepare the screen for a stencil application
- Demonstrate the proper application of emulsion to the screen
- Demonstrate the proper steps of exposing the screen while maintaining screen to screen registration
- Demonstrate the proper steps of washing image area of a screen and allowing to dry
- Demonstrate the proper steps of washing image area of a screen and allowing to dry
- Specify the possible defects that will affect the quality of print

Print Production

32%
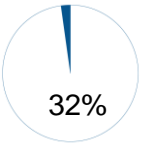
- List the workflow steps used during printing
- Describe characteristics of squeegees used a. Durometer b. Shape c. Width
- Demonstrate the proper choice of squeegee for a specific job
- List the types of ink used in screen printing
- Choose the proper choice of ink for a specific job
- Demonstrate confirmation of correct ink specifications from a job ticket
- Describe the alignment of screens for proper registration
- Define flood stroke
- Define print stroke
- Define off contact and peel
- Demonstrate the proper setting of off contact to control image quality
- Demonstrate the proper application of ink to screen
- Demonstrate the proper loading and alignment of substrate on press
- Demonstrate the proper adjustment of squeegee pressure for an instructor specified job
- Demonstrate proper operation of press
- Determine corrective actions required to maintain quality
- Describe drying systems a. Flash b. Conveyor
- Evaluate an instructor specified finished product

Clean up Process

11%
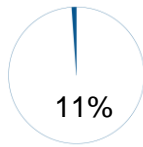
- Describe a Safety Data Sheet
- Explain the use of Safety Data Sheet
- Demonstrate the proper procedures when handling cleaning chemicals
- Demonstrate the proper removal, cleaning and storing of squeegee(s)
- Demonstrate the proper removal of remaining ink from screen
- Demonstrate the proper cleansing of screen equipment
- Demonstrate the proper storage or disposal of ink as specified by local regulations
- Demonstrate the proper preparation of screen for reuse or reclamation
- List possible defects in a screen
- Demonstrate the proper chemical or mechanical adjustments to screen for reuse
- Demonstrate the proper storage of screen

Math and Measurement

6%
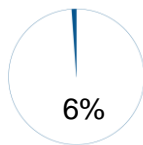
- Solve addition of fraction problems

SkillsUSA is of the understanding that students who take the PrintED/SkillsUSA Screen Printing Technology Career Essential Assessment have been enrolled in a screen printing training program with the following competencies embedded within the curriculum.

Connections to National Standards

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

Math Standards
- Numbers and operations
- Algebra
- Geometry
- Measurement
- Data analysis and probability
- Problem solving
- Communication
- Connections
- Representation

Source: NCTM Principles and Standards for School Mathematics. To view high school standards, visit: http://www.nctm.org/standards/content.aspx?id=16909.

Science Standards
None identified.

Source: McREL compendium of national science standards. To view and search the compendium, visit: www.mcrel.org/standards-benchmarks/.

Language Arts Standards
- Students read a wide range of print and nonprint 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, and vocabulary) to communicate effectively with a variety of audiences and for different purposes.
- Students apply knowledge of language structure, language conventions (e.g., spelling and punctuation), media techniques, figurative language and genre to create, critique and discuss print and nonprint texts.
- Students conduct research on issues and interests by generating ideas and questions and by posing problems. They gather, evaluate and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, and people) to communicate their discoveries in ways that suit their purpose and audience.
- 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 participate as knowledgeable, reflective, creative and critical members of a variety of literacy communities.
- 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.readwritethink.org/standards/index.html.