

Architectural Drafting Blueprint

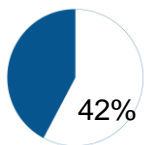
This Blueprint contains the subject matter content for the Career Essentials - Assessment.

Note: To fully prepare for the [Architectural Drafting](#) 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

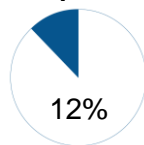
Competencies are weighted throughout the assessment. The percent shown is the weight of the competency. There are 50 questions per assessment.

Demonstrate understanding of terms and principles used in the architectural profession



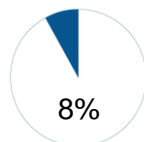
- Define the characteristics of geometric objects
- Define the characteristics of working drawings
- Demonstrate knowledge of architectural drafting
- Define the characteristics of drafting tools
- Define standard abbreviations

Interpret and apply conventional General Drafting Standards to architectural drafting situations



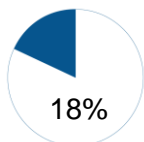
- Perform correct mathematical calculations as they apply to architecture.

Demonstrate understanding of the Alphabet of Lines



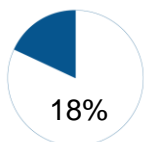
- Explain the graphical characteristics of each line

Demonstrate understanding of construction materials



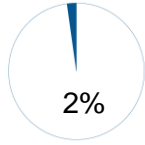
- Demonstrate understanding of concrete
- Demonstrate understanding of masonry
- Demonstrate understanding of wood
- Demonstrate understanding of metal
- Demonstrate understanding of thermal
- Demonstrate understanding of doors and windows

Demonstrate understanding of construction drawings



- Demonstrate understanding of elevation in construction drawings
- Demonstrate understanding of floor plan in construction drawings
- Demonstrate understanding of section in construction drawings
- Demonstrate understanding of detail in construction drawings
- Demonstrate understanding of site plan in construction drawings
- Demonstrate understanding of schedules in construction drawings
- Demonstrate understanding of mechanical, electrical, and plumbing in construction drawings

Interpret and apply conventional General Drafting Standards to architectural drafting situations



- Interpret and apply scaling to architectural drafting situations
- Interpret and apply accessible design to architectural drafting situations

Demonstrate professional development skills in a simulated customer service or employment situation. Examples may include:

- Job interview
- Customer service scenario
- Communications
- Decision making, problem solving and/or critical thinking

Committee Identified Academic Skills

The SkillsUSA national technical committee has identified that the following academic skills are embedded in the architectural drafting training program and assessment:

Math Skills

- Use fractions to solve practical problems
- Use proportions and ratios to solve practical problems
- Simplify numerical expressions
- Solve practical problems involving percents
- Solve single variable algebraic expressions
- Solve multiple variable algebraic expressions
- Measure angles
- Find surface area and perimeter of two-dimensional objects
- Find volume and surface area of three-dimensional objects
- Construct three-dimensional models
- Apply Pythagorean Theorem
- Make predictions using knowledge of probability
- Make comparisons, predictions and inferences using graphs and charts
- Organize and describe data using matrixes
- Graph linear equations
- Solve problems using proportions, formulas and functions
- Find slope of a line
- Solve practical problems involving complementary, supplementary and congruent angles
- Solve problems involving symmetry and transformation
- Use measures of interior and exterior angles of polygons to solve problems

Science Skills

- Describe and recognize solids, liquids and gases
- Describe characteristics of types of matter based on physical and chemical properties
- Use knowledge of physical properties (shape, density, solubility, odor, melting point, boiling point, color)
- Use knowledge of classification of elements as metals, metalloids and nonmetals
- Use knowledge of mechanical, chemical and electrical energy
- Use knowledge of heat, light and sound energy
- Use knowledge of temperature scales, heat and heat transfer
- Use knowledge of sound and technological applications of sound waves
- Use knowledge of simple machines, compound machines, powered vehicles, rockets and restraining devices

- Use knowledge of principles of electricity and magnetism
- Use knowledge of static electricity, current electricity and circuits
- Use knowledge of motors and generators

Language Arts Skills

- Provide information in conversations and in group discussions
- Provide information in oral presentations
- Demonstrate use of verbal communication skills, such as word choice, pitch, feeling, tone and voice
- Demonstrate use of nonverbal communication skills, such as eye contact, posture and gestures using interviewing techniques to gain information
- Analyze mass media messages
- Demonstrate comprehension of a variety of informational texts
- Use text structures to aid comprehension
- Identify words and phrases that signal an author's organizational pattern to aid comprehension
- Understand source, viewpoint and purpose of texts
- Organize and synthesize information for use in written and oral presentations
- Demonstrate knowledge of appropriate reference materials
- Use print, electronic databases and online resources to access information in books and articles
- Demonstrate narrative writing
- Demonstrate expository writing
- Demonstrate persuasive writing
- Demonstrate informational writing
- Edit writing for correct grammar, capitalization, punctuation, spelling, sentence structure and paragraphing

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
- 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>. Select "standards" from menu.

Science Standards

- Understands forces and motion
- Understands the nature of scientific inquiry

Source: McREL Compendium of National Science Standards. To view and search the compendium, visit: www.mcrel.org/standards-benchmarks/.



Language Arts Standards

- 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 employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of 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, 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, 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.readwritethink.org/standards/index.html.