



## INTERACTIVE APPLICATION AND VIDEO GAME DEVELOPMENT



SkillsUSA Championships Technical Standards

### PURPOSE

To evaluate each competitor's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of interactive application and video game creation.

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

### ELIGIBILITY (TEAM OF TWO)

Open to a team of two active SkillsUSA members enrolled in career and technical education programs with creating interactive applications and/or video game design and development as occupational objectives. Up to four additional students from the same school and program may assist the team if they are properly credited per the instructions below under section 2 of "Equipment and Materials."

### 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](http://www.skillsusastore.org). If you have questions about clothing or other logo items, call 1-888-501-2183.

*Note:* Competitors must wear their official competition clothing to the competition orientation meeting and on competition day.

## EQUIPMENT AND MATERIALS

1. Supplied by the technical committee:
  - a. Space for team prototypes. Each team will be allotted a minimum of either one six-foot (6') or one half of an eight-foot (8') conference table, based on availability, and two chairs to share among team members.
  - b. Access to power
  - c. Written knowledge exam and pencils.

**Note:** No internet access will be provided or allowed during the competition.

2. Supplied by competitors:

**Important:** State and school identifiers should not appear on competition submissions with the exception of the hard-copy affidavit and resumes. At the competition orientation and/or setup/check-in, teams must turn in affidavits, resumes, Design Document (DD) and two videos as described below. Teams should also be prepared to show proof of licensing for all software used.

  - a. A working sample or prototype of an interactive application or video game (the Game), including all source files and any necessary software and hardware needed to demonstrate it. If different from the target playback platform, teams should also bring a computer capable of reading, displaying their prototype from their source files (for backup only).
  - b. A backboard, artwork, and/or collateral to enhance the display, presentation, and “marketing” of the prototype.
  - c. Two - 6' multiple-outlet power strips.
  - d. A loose-leaf affidavit signed by all team members on 8.5"x11" paper, countersigned by their school’s administrator and instructor or SkillsUSA advisor, stating the team submission is original work created by the team members during the current school year. Credits for any students assisting in the project should be listed along with detail on the work they performed.
  - e. A **Design Document (DD)** organized into a single Adobe PDF file, formatted in 8.5”x11”, portrait orientation, using 12-point font and entitled “**DD – Team XXXX**”. The required sections of the DD, with section titles to be used in bold, are the following:
    - 1). A one-page type-written **Overview** describing the Game or interactive application, including the title, a summary, description of the target audience, main selling points, any competitive or inspirational game titles, estimated total playtime, and measured performance metrics on the Game.
    - 2). A one-page **SWOT** analysis table listing the primary Strengths, Weaknesses, Opportunities and Threats for the Game.
    - 3). Completed **Concept Artwork** and/or the storyboard used to develop the Game. Shrink to fit, if needed, and submit between four to six (4-6) pages max.
    - 4). **Code Examples** of the highest quality and complexity of programming developed for the Game, between two to four (2-4) pages, formatted in 8.5”x11.” If a computer language was used, code should be single spaced in 12 pt. font. If visual programming was used, submit screen captures of visual programming diagrams.
  - f. Two video submissions

- 1). The first digital video should be three to four (3-4) minutes long and entitled “**Intro Video - Team XXXX**”, where the competitors should introduce themselves and any students from their program who assisted them (by name only, careful not to reveal the team’s school or state), detailing each person’s role in the development process. Then, in the same video, one team member, acting as spokesperson, should give a quick overview of the game or interactive application, including its title, genre, target audience, how many levels, total approximate playtime developed, performance metrics, and any notable user interfaces (opening, closing screen, cut scenes, etc.).
  - 2). The second digital video should be thirty (30) seconds to one (1) minute long and entitled “**Trailer Video - Team XXXX**” pitching the game or interactive application, demonstrating and describing what is best about it, including gameplay, mechanics, significant objects or characters, levels, artwork, backgrounds, sound, with a focus on why the audience would want to play the Game. Think of this as an advertisement designed to drive player acquisition.
- g. All competitors must create a one-page resume to submit online. See “Resume Requirement” below for guidelines. Competitors must also bring a hard copy of their resume to the competition.

**Note:** The DD and digital videos should be tested in advance on WIN and MAC computers to ensure they are viewable on readers/players included with those operating systems.

Content may be submitted to other competitions or events. SkillsUSA’s photography and sound release will apply to the use of imagery and content from submissions for marketing and nonprofit outreach.

## **RESUME REQUIREMENT**

Competitors must create a one-page resume to submit online. SkillsUSA national competitors should submit their resume by the deadline published on the competition updates page of our website. The deadline and link for resume submission will be published on <http://updates.skillsusa.org>. 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**

Cellphones, electronic watches and/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 Director of the SkillsUSA Championships. If confirmed that the competitor used the device in a manner which compromised the integrity of the competition, the competitor's scores may be removed.

## **SCOPE OF THE COMPETITION**

The competition is a two-person team event that tests technical knowledge and production skills, including critical thinking, creative problem solving, teamwork, interpersonal and visual communication, artistic design, and technical programming.

## **KNOWLEDGE PERFORMANCE**

The competition will include a written exam assessing the team's knowledge of the industry, including its jargon, technologies and professional methods. Competitors must take the SkillsUSA Professional Development Test.

## **SKILL PERFORMANCE**

Teams must produce an original prototype or sample of an interactive application or video game with at least one (1) level and ten (10) minutes of interactive content. It must be created during the school year immediately preceding the competition. The production should include the sample or prototype itself and other submissions described above in the "Supplied by Competitor" section. Resumes should include the skills gained from the experience developing the competition submission, the time that was invested, and the professional and academic relevance to the competitor's career ambitions.

## **COMPETITION GUIDELINES**

1. Competitors will show up at the competition orientation meeting with their full submission of written documents, including a resume for each team member, and their completed DD and digital videos, pre-tested and ready for submission on a USB drive. Late submissions will be docked 10% against all applicable judging criteria, and submissions will not be accepted after the designated competition setup time.
2. If an industry briefing or competition debriefing is offered, attendance is required.
3. At the designated setup time, each team will assemble and test their sample/prototype and workstations.
4. Schedules will be disseminated with the time periods for interviews with the judges.
5. Outside their interview time, someone from the team should be on hand to demonstrate to the public and to watch over their equipment.
6. The competition timeframe will depend on the total number of entries in the competition, not to exceed two (2) eight-hour days.
7. The technical committee reserves the right to photograph and videotape competition-related activities.
8. The technical committee will be responsible for developing the evaluation tools by which to objectively measure the competing team's performance. Judging criteria will be general in nature and will be done from the completed concept art/storyboard, demonstrated sample or

prototype, any written and video submission, resumes, exam scores, and interviews with the judges. Specific criteria may be based on the demonstration of competency in the elements of conceptualization, design, artwork, content creation, gameplay, or effective simulation, programming effectiveness, user-interface design, implementation, functionality, and performance on the target platform.

9. The setup, configuration, and teardown of all competitor-provided equipment will be the team's responsibility.

## **STANDARDS AND COMPETENCIES**

The technical committee has identified the following professional competencies addressed in the competition:

### **VG 1.0 — Solve a problem or create a conceptual design in a visual format**

- 1.1. Conceptualization, visual communications for artists and storyboarding techniques.
  - 1.1.1. Solve problems and/or develop stories creatively.
  - 1.1.2. Define how a problem will be solved or how a story will be told.
  - 1.1.3. Describe the concept visually with enough depth to communicate the final output substantially and accurately for team members and interested third parties.

### **VG 2.0 — Create and manipulate 2D, 3D, and audio computer-generated objects (assets)**

- 2.1. Create assets using various technologies.
  - 2.1.1. Create and modify 2D artwork, including textures, sprites, and backgrounds.
  - 2.1.2. Create and modify 3D geometry to produce characters, objects, and environmental elements (models) that possess shape and texture.
  - 2.1.3. Create and modify audio elements.
  - 2.1.4. Optimize all assets for use in real-time, interactive environments.
  - 2.1.5. Use programming to apply physics and other properties to assets for creating complex behaviors and relationships.

### **VG 3.0 — Develop, optimize and deploy complex interactive multimedia applications**

- 3.1. Position assets, lights, and cameras and organize environments into scenes/levels, and output as a functional, interactive multimedia application or video game.
- 3.2. Apply logical properties to lights, cameras, and other assets so they appear and behave properly.
- 3.3. Add sounds, particles and/or visual effects to enhance the quality of the user experience.
- 3.4. Create a functional user interface.
- 3.5. Test, optimize and deploy as an application or video game.

### **VG 4.0 — Demonstrate the ability to work in a team environment**

- 4.1. Cooperate with others to achieve the solution to a problem or bring a project from concept through development.
- 4.2. Demonstrate consensus building.
- 4.3. Apply written and visual communication skills to convey ideas between team members and interested third parties.

- 4.4. Divide tasks, set goals, and meet deadlines to complete complex projects with multiple contributors.

### **VG 5.0 — Demonstrate proficiency in technical, small-group communications**

- 5.1. Show the judges that your submission evokes the intended response from the audience by using technical presentation skills and other communication techniques.
  - 5.1.1. Demonstrate in a manner appropriate to the audience.
  - 5.1.2. Capture and retain the audience’s attention and interest.
  - 5.1.3. Elicit intended aesthetic responses to visual, auditory and kinesthetic stimuli.
  - 5.1.4. Achieve learning, familiarization, persuasion, or other intended objectives.

### **VG 6.0 — SkillsUSA Framework**

The SkillsUSA Framework is used to pinpoint the Essential Elements found in Personal Skills, Workplace Skills and Technical Skills Grounded in Academics. Students will be expected to display or explain how they used some of these Essential Elements. Please reference the graphic, as you may be scored on specific elements applied to your project. For more, visit: [www.skillsusa.org/who-we-are/skillsusa-framework/](http://www.skillsusa.org/who-we-are/skillsusa-framework/).



### **COMMITTEE IDENTIFIED ACADEMIC SKILLS**

The education committee has identified that the following academic skills are addressed in this competition.

#### **Math Skills**

- Use fractions to solve practical problems.
- Use proportions and ratios to solve practical problems.
- Solve practical problems involving percentages.
- Solve single variable algebraic expressions.
- Measure angles.
- Apply transformations (rotate or turn, reflect or flip, translate or slide, or dilate or scale) to geometric figures.
- Construct 3D models.
- Solve problems involving symmetry and transformation.

#### **Science Skills**

- Use knowledge of physical properties (shape, density, solubility, odor, melting point, boiling point and color).
- Use knowledge of the nature and technological applications of light.
- Use knowledge of speed velocity and acceleration.

#### **Language Arts Skills**

- Provide information in conversations and in group discussions.
- Provide information in oral presentations.

- Demonstrate use of such verbal communication skills as word choice, pitch, feeling, tone and voice.
- Demonstrate comprehension of a variety of informational texts.
- Organize and synthesize information for use in written and oral presentations.
- Demonstrate knowledge of appropriate reference materials.
- Demonstrate narrative writing.

## **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](http://www.nctm.org).*

### **Science Standards**

- Understand forces and motion.
- Understand the nature of scientific inquiry.

*Source: McREL compendium of national science standards. To view and search the compendium, visit: [www2.mcrel.org/compendium/](http://www2.mcrel.org/compendium/).*

### **Language Arts Standards**

- Adjust use of spoken, written and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
- 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.
- Participate as knowledgeable, reflective, creative, and critical members of a variety of communities.
- Use spoken, written and visual language to accomplish their own purposes (e.g., 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](http://www.ncte.org/standards).*