

# INTERACTIVE APPLICATION AND VIDEO GAME CREATION



## PURPOSE

To evaluate each contestant'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

Open to a team of two active SkillsUSA members enrolled in programs focused on 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, as long as they are properly credited per the instructions below in Sections 2c and 2f.

## CLOTHING REQUIREMENTS

### Class E: Contest specific — Business Casual

- Official SkillsUSA white polo shirt.
- Black dress slacks (accompanied by black dress socks or black or skin-tone seamless hose) or black dress skirt (knee-length, accompanied by black or skin-tone seamless hose).

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:** Contestants must wear their official contest clothing to the contest orientation meeting and on contest 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. A 110-volt electrical outlet.
  - c. Written knowledge exam and pencils.

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

2. Supplied by contestants:

**Note:** State and school identifiers should not appear on the electronically submitted items—specifically the prototype (2.a), the game design document (2.e), and video submissions (2.f). School names/states should only appear on the hardcopy affidavit (2.c) and résumés (2.d). Lastly, be prepared to show proof of licensing for all software used at setup. See below:

- 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. If different from the target playback platform, teams should also bring a computer capable of reading, displaying and compiling the Game from their source files.
- b. A multi-outlet power strip with surge protection.
- c. 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.
- d. A loose-leaf, typewritten, single-page résumé for each team member on 8.5"x11" paper.

- e. **A Game Design Document (GDD)** organized as a series of digital documents in Microsoft Word or Adobe PDF files. Here are the sections of the GDD, document titles in bold:

- A one page type-written **Overview** describing the Game, 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.
- A one page **SWOT** analysis table listing the primary Strengths, Weaknesses, Opportunities and Threats for the Game.

The Summary and SWOT should be submitted digitally in 8.5"x 11" single-spaced text in 12pt font.

- Completed **Concept Artwork** and/or the storyboard used to develop the Game. Shrink to fit, if needed, and submit between two to four (2-4) pages, double-sided on 8.5"x11" paper (2 sheets max).
  - **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.
- e. For the national finals (NLSC), two 1080p digital video files must be also be prepared and submitted with the full digital GDD on a USB drive AT THE CONTEST ORIENTATION MEETING. The digital videos should be tested in advance on WIN and MAC computers and viewable on movie players included with those operating systems.

Here are details for the two videos:

1. The first digital video should be three to four (3-4) minutes long

and entitled "**Intro**", where the contestants should introduce themselves and any students from their program who assisted them (by name only, careful not to reveal your 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, 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 a one minute long and entitled "Trailer" pitching the Game, demonstrating and describing what is best about the Game, 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.

**Note:** All documents, the digital GDD and videos (Section 2.c-g) must be handed in at the contest orientation.

Content may be submitted to other contests or events, but SkillsUSA must be granted unencumbered rights to use imagery and content from all submissions for marketing and nonprofit outreach.

**Note:** Your contest may also require a hard copy of your résumé as part of the actual contest. Check the Contest Guidelines and/or the updates page on the SkillsUSA website at <http://updates.skillsusa.org/>.

## SCOPE OF THE CONTEST

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

### Knowledge Performance

The contest will include a written exam assessing the team's knowledge of the industry, including its jargon, technologies and professional methods.

### Skill Performance

Teams must produce an original prototype or sample of an interactive application or video game with at least one level and ten (10) minutes of interactive content. It must be created during the school year immediately preceding the contest deadline. The production should include the sample or prototype itself and other submissions described in Section 2 above. Résumés should include the skills gained from their experience developing the contest submission, the time they invested, and the professional and academic relevance to the contestant's career ambitions.

### Contest Guidelines

1. Contestants will show up at the contest orientation meeting with their full submission of written documents, including a résumé for each team member, and their completed GDD 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 no submissions will be accepted after the designated contest setup time.
2. If an industry briefing or contest debriefing is offered, attendance is highly recommended but not required.
3. Later, 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 particular interview time, someone from the team should be on

hand to demonstrate to the public and to watch over their equipment.

We recommend this responsibility be shared among both team members.

6. The contest timeframe will depend on the total number of entries in the contest, not to exceed two (2) eight-hour days.
7. The technical committee reserves the right to photograph and videotape contest-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, résumés, 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 contestant-provided equipment will be the team's responsibility.

### Standards and Competencies

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

#### 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
  - 1.1.2 Describe the concept visually with enough depth to substantially and accurately communicate the final output 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
  - 3.1.1 Apply logical properties to lights, cameras, and other assets so they appear and behave properly
  - 3.1.2 Add sounds, particles and/or visual effects to enhance the quality of the user experience
  - 3.1.3 Create a functional user interface
  - 3.1.5 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
  - 4.1.1 Demonstrate consensus building
  - 4.1.2 Apply written- and visual-communication skills to convey ideas between team members and interested third parties

- 4.1.3 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

### **Committee Identified Academic Skills**

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

#### **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.

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).

### 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: <http://www2.mcrel.org/compendium/browse.asp>.

#### 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