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: updates.skillsusa.org.

Eligibility (Team of 2)

Open to a team of two to four active SkillsUSA members enrolled in programs focused on creating interactive applications and/or video game design and development as occupational objectives.

Clothing Requirement

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black dress shoes.
For women: Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or skin-toned seamless hose and black dress shoes.

These regulations refer to clothing items that are pictured and described at: www.skillsusastore.org. If you have questions about clothing or other logo items, call 800-401-1560 or 703-956-3723.

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.

2. Supplied by contestants:
   Note: State and school identifiers should not appear in certain submitted items—specifically in the prototype (2.a), the written submission (2.f–i), and video submission (2.j) if required. School names/states should only appear on the affidavit, résumés and proof of licensing (2c–e). See below.
   a. A working sample or prototype of an interactive application or video game, including all source files and any necessary software and hardware. If different from the target playback platform, teams should also bring one workstation capable of reading, displaying, and compiling the interactive app or video game from the 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 solely by the team members during the current school year.
   d. Loose-leafed proof of licensing on 8.5"x11" paper for any commercial software programs used in the development of the team's submission
   e. A loose-leaf, typewritten, one-page résumé for each team member on 8.5"x11" paper.
   f. A one-page typewritten summary describing the team's submission, including a pitch (imagine having only a minute to convince someone to buy your game), a summary of the demographics describing the target audience, main selling points, any competitive or inspirational game titles, total estimated playtime developed, performance metrics on the playback platform, and a one page SWOT analysis table listing its primary

Strenghts, **W**eaknesses, **O**pportunities and **T**hreats.
The summary and **SWOT** should be submitted on one double-sided, 8.5"x11" sheet of paper using single-spaced text and a 12pt font.

g. Completed concept artwork and/or storyboard used to develop their submission. Shrink to fit if needed and submit in 2–4 pages, on double-sided, 8.5"x11" paper (2 sheets max).
h. Examples of the highest quality and complexity of computer programming code developed for submission. If visual programming was used, screen captures of visual programming diagrams are acceptable. Examples should be submitted in 2–4 pages, on double sided, 8.5"x11" paper.
i. A flat, softsided binding or folder with a pocket for 8.5"x11" items (2.f–h). Dividers are optional.
***Note*:** All written documents must be handed in at contest orientation meeting (2.c–i).
j. A four- to five-minute, 1080p digital video is required to be prepared and tested in advance, and turned in on a USB drive at the contest orientation meeting.
The digital video should be tested on WIN and/or MAC computers and viewable on movie players included with those operating systems. The video should contain the following content and/or features:
    1. Contestants should introduce themselves by name only and quickly describe their role on the team in the development of the interactive application or video game submission.
    2. One team member 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, list and show notable user interfaces (opening screen, closing screen, cut scenes, etc.)
    3. Example of the best gameplay. Demonstrate and describe any significant game mechanics, game objects, level artwork, backgrounds and sound. (Think of this as a trailer to get viewers to buy your game.)

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 updates.skillsusa.org.

Scope of the Contest

The contest is a two- to four-person team event that tests technical knowledge and production skills, including creative problem solving, artistic design and technical programming.

Knowledge Performance

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

Skill Performance

Teams must produce an original prototype or sample of an interactive multimedia application or video game with at least one level and 10 minutes of interactive content. It must be created during the school year immediately preceding the contest deadline. Their production should include the sample or prototype itself and other submissions described in Section 2 above. Résumés should include the skills gained from the experience developing the contest submission, the amount of time 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 prepared digital video submission on a USB drive where required
2. If an industry briefing or contest debriefing is offered, attendance is higly recommended but not required.
3. Later at the designated set-up time, each team will assemble and test its 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 all team members.
6. The contest timeframe will depend on the total number of entries in the contest, not to exceed two eight-hour days.
7. The technical committee reserves the right to videotape contest-related activities.
8. The technical committee will be responsible for developing the evaluation tools by which to measure objectively 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

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 percents
- 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.

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 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.