



17TH ONTARIO TECHNOLOGICAL SKILLS COMPETITION

3D CHARACTER COMPUTER ANIMATION (TEAM) - SECONDARY LEVEL

CHAIR: Anne Martin, anne.martin@tcdsb.org

**** Gold medal winners will advance to the Canadian Skills Competition.**

PURPOSE OF CONTEST:

To evaluate each team's ability, skill and knowledge of animation as they prepare for employment in the animation field. Character Animation deals with the creation and animation of characters and models used in storytelling. They may take the shape of any object in response to the project provided. The structure of the project will be provided to the competitors at the orientation session on the evening prior to the competition. The details of the project will be provided immediately prior to the competition. **The “main characters” should be the focus of the production.** There are no limitations as to the nature or complexity of the characters. A good animated character is one that creates empathy. **Upon completion of the animation, teams will present their storyboard, model sheets and animation to the judges in a structured presentation.**

PROPOSED EVENT TIMES

7:00 AM – 7:30 AM - Registration

7:30 AM – 8:00 AM - Orientation

8:00 AM – 8:10 AM - Project details provided

8:00 AM – 9:00 AM - Storyboarding and Model Sheets – No access to computers.

9:00 AM – 3:30 PM – Storyboards will be worked on modelling can start. Storyboards must be handed in by 10:30 AM

4:00 AM – 5:30 PM – Judging

There will be a 30-minutes mandatory lunch break.

SKILLS AND KNOWLEDGE TO BE TESTED

Given a project, participants will be challenged to detail and plan the development of a completed story. The competition will focus on the participants' ability to tell a story. By scripting and storyboarding the competitors outline their idea on paper. Competitors will then bring their story to life by creating, animating and compositing the scenes outlined in their storyboard. This represents the animation process.

SAFETY REQUIREMENTS:

Competitors are required to follow all industry safety standards during the competition.

PROJECT

In order to reflect the process used in the animation industry, the project will be structured in duration and required form. The project will have a specified form, for example, an animation for gaming, movie trailers, shorts, instruction, advertising, business, re-enactments, or simulations etc.

COMPETITION EXPECTATIONS:

1. Produce a storyboard and character model sheets on paper that sets out their proposed animation following the project provided.
2. After the first hour of competition students will be allowed access to the computer workstations.
3. Storyboards and model sheets will be collected after the four hour period. The final product will be compared to the storyboards. Storyboards will be returned to each team after they have been copied by the technical committee. Upon return of the sheets, no modifications will be permitted.
4. Competitors should note that model sheets **MUST** include front, profile (side), $\frac{3}{4}$, and back views of the character.
5. Competitors are expected to create convincing environments (Colour, texture, and lighting) and supporting models.
6. Competitors must demonstrate their knowledge of the 12 principles of animation in their project.
7. Default lighting **CANNOT** be used. Teams are expected to create moods using lighting techniques.
8. Nowhere within the presentation should the name of the students, or their school appear.
9. At least one object in a 3D movie has to have an original mapped surface. Competitors will indicate on their storyboard which object is mapped.
10. There must be an obvious beginning and end to the presentation. This could be through the use of the first frame being black or titling.
11. A limited library of music and sound effects will be provided for use. Competitors will also be able to record their own sounds using a microphone. No other recorded sounds will be permitted.
12. The teams will work independently. Instructors and/or observers will give no assistance and are not allowed in the competition area.

13. Teams will prepare a presentation to the judges. The presentation will cover storyboard and character design and the planning and execution process. The schedule of the presentation will be approximately as follows:
- 1 minute setup of poster board
 - 3 minutes - Presentation of products (storyboard, model sheets, and animation)
 - View animation
 - Questions from judges
 - Judges' evaluation

EQUIPMENT, TOOLS, SUPPLIES, CLOTHING

Equipment Supplied by the Committee:

- 1 Workstation/Team
- Hardware Requirements – Pentium IV (2+ GHz) compatible computer fitted with SVGA 19 inch monitor and optical mouse w/wheel, Video: 128 MB RAM OpenGL video cards. System memory: 1 GB RAM.
- Operating System - Windows XP Professional
- Software: 3ds Max 8, and Maya 7. Compositing software will be Adobe Premiere Pro 1.5, Adobe After Effects 6.5, Macromedia Flash MX. Graphic Software Adobe Photoshop CS. Viewing software will be Quicktime Pro, and MS Media Player 10. Codec included: DivX. Audio editing software: Audacity (freeware)
- No external support programs, plug-ins, or documentation (other than those found in the final shipped version of the software) may be used.
- Image input devices (scanner and digital camera) provided for all to access and share.
- Colour printer.
- Standard storyboard and model sheets (see below)
- Corkboard and push pins for presentation

Equipment supplied by the Competitor:

Teams **ARE REQUIRED** to contact the technical chair by **April 2, 2006** to advise the Committee what software they will be using **if it is not listed above**. If the committee is not contacted prior to May 10, 2006, the committee will make all efforts to have the software available to the competitors before the start of the event. Due to the nature of installing software, competitors should be prepared to use the software provided by the committee if installing their desired software is unsuccessful.

- If students choose to listen to music throughout the competition, all CDs brought into the competition area must be commercially produced. Data CDs, portable storage devices, and mp3 players are not allowed.
- Headphones and microphones
- Storyboard and model sheet (if desired)
- Pencils and erasers.

CLOTHING REQUIREMENTS:

Casual business attire: **NO** school name, logo, or province name on any visible attire.

JOB INTERVIEW COMPONENT:

To assist competitors in fully preparing for their eventual job searches and to become valued employees, there will be a **5 minute** job interview worth 5% of the competitor's overall mark incorporated into this contest. It is expected that the competitors arrive prepared **WITH A RÉSUMÉ** and be ready for interview questions related to the technical career path their contest reflects. Feedback from the interview will be given to competitors in order to help them prepare for real-life job interviews.

JUDGING CRITERIA:

POINT BREAKDOWN / 1000 TOTAL

The final animations from each team will be viewed and assessed individually by the judges. Tabulation sheets will be given to the members of the technical committee for verification of scores. In the event of a tie judges will be asked to confer and come to a consensus on winners. Judges should direct any questions to members of the technical committee only. To qualify for a medal, competitors **MUST** achieve a minimum of 60%.

Storytelling /250

- Clarity of message (storyboard demonstrates all elements to be communicated visually to the audience)
- Storyboard uses industry standard symbols and terminology as provided in the legend.
- Final presentation illustrates storyline planned and outlined in storyboards.
- Methods chosen (ex. Camera shots, effects) and outlined on the storyboard complement the storyline.
- Storyline illustrates the project provided in a creative and original manner.

Character design /250

- Model sheet reflects front, side, $\frac{3}{4}$, and back views of the character.
- Quality of individual Models (structure, proportions and appeal)
- Contrast between each character helps to emphasize personality traits in the main character.
- Each character's look and style is relevant to the story.

Aesthetics /250

- Effective use of colours.
- Effective use of texture, including an original mapped texture
- Effective use of sound
- Effective use of lighting to create atmosphere and assist in establishing continuity within the scenes
- Unity of style amongst the character, environment and props

Animation /250

- Timing of the story: obvious beginning and ending
- Effective use of specific actions: gravity, anticipation, exaggeration, secondary action.
- Staging: relationship between the camera and the character
- Acting: expression, effective posing, ability to provoke empathy and emotion in the audience.

**COMMITTEE
MEMBERS:**

Anne Martin
Daniel Goulet

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Competition Rules and Evaluation

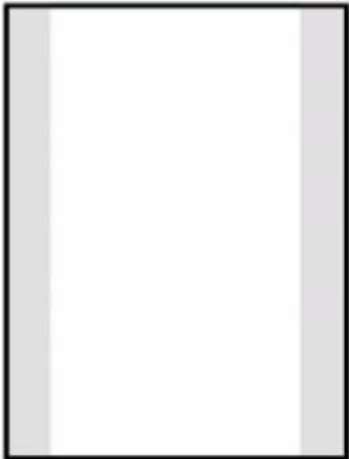
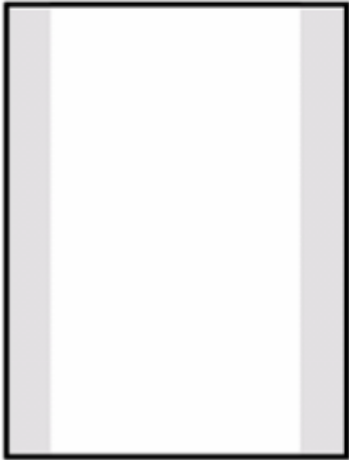
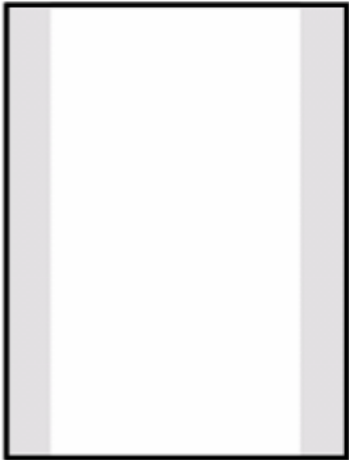
A team consists of two people. Animations created must address the project as given. Teams must work independently. Final storyboards and project files must be submitted and remain with Skills Canada.

Contest Project: -----To be announced at contest-----

APPENDICES















STORYBOARD SAMPLE



TEAM	WRITTEN BY :	TITLE :									
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STORYBOARD SYMBOLS

Camera Movements		Character Movements	
	Rocking		Tilt Up
	Zoom Out		Tilt Down
	Zoom In		Pedestal Down
	Pan Right Pan Left		Pedestal Up
	Dolly In		Track Right Track Left
	Dolly Out		
			Turning Right Turning Left
			Moving Right Moving Left
			Moving Down Moving Up

MODEL SHEETS

<p>Perspective (3/4 Front)</p>	<p>Front</p>
<p>Side</p>	<p>Back</p>

12 PRINCIPLES OF ANIMATION

THE 12 BASIC PRINCIPLES OF ANIMATION Paraphrased from the "Illusion Of Life" by Frank Thomas & Ollie Johnston.(pp.47-69) Look these up and read the original version for a complete understanding.

1. SQUASH AND STRETCH

This action gives the illusion of weight and volume to a character as it moves. Also squash and stretch is useful in animating dialogue and doing facial expressions. How extreme the use of squash and stretch is, depends on what is required in animating the scene. Usually it's broader in a short style of picture and subtler in a feature. It is used in all forms of character animation from a bouncing ball to the body weight of a person walking. This is the most important element you will be required to master and will be used often.

2. ANTICIPATION

This movement prepares the audience for a major action the character is about to perform, such as, starting to run, jump or change expression. A dancer does not just leap off the floor. A backwards motion occurs before the forward action is executed. The backward motion is the anticipation. A comic effect can be done by not using anticipation after a series of gags that used anticipation. Almost all real action has major or minor anticipation such as a pitcher's wind-up or a golfers' back swing. Feature animation is often less broad than short animation unless a scene requires it to develop a characters personality.

3. STAGING

A pose or action should clearly communicate to the audience the attitude, mood, reaction or idea of the character as it relates to the story and continuity of the story line. The effective use of long, medium, or close up shots, as well as camera angles also helps in telling the story. There is a limited amount of time in a film, so each sequence, scene and frame of film must relate to the overall story. Do not confuse the audience with too many actions at once. Use one action clearly stated to get the idea across, unless you are animating a scene that is to depict clutter and confusion. Staging directs the audience's attention to the story or idea being told. Care must be taken in background design so it isn't obscuring the animation or competing with it due to excess detail behind the animation. Background and animation should work together as a pictorial unit in a scene.

4. STRAIGHT AHEAD AND POSE TO POSE ANIMATION

Straight ahead animation starts at the first drawing and works drawing to drawing to the end of a scene. You can lose size, volume, and proportions with this method, but it does have spontaneity and freshness. Fast, wild action scenes are done this way. Pose to Pose is more planned out and charted with key drawings done at intervals throughout the scene. Size, volumes, and proportions are controlled better this way, as is the action. The lead animator will turn charting and keys over to his assistant. An assistant can be better used with this method so that the animator doesn't have to draw every drawing in a scene. An animator can do more scenes this way and concentrate on the planning of the animation. Many scenes use a bit of both methods of animation.

5. FOLLOW THROUGH AND OVERLAPPING ACTION

When the main body of the character stops all other parts continue to catch up to the main mass of the character, such as arms, long hair, clothing, coat tails or a dress, floppy ears or a long tail (these follow the path of action). Nothing stops all at once. This is follow through. Overlapping action is when the character changes direction while his clothes or hair continues forward. The character is going in a new direction, to be followed, a number of frames later, by his clothes in

the new direction. "DRAG," in animation, for example, would be when Goofy starts to run, but his head, ears, upper body, and clothes do not keep up with his legs. In features, this type of action is done more subtly. Example: When Snow White starts to dance, her dress does not begin to move with her immediately but catches up a few frames later. Long hair and animal tail will also be handled in the same manner. Timing becomes critical to the effectiveness of drag and the overlapping action.

6. SLOW-OUT AND SLOW-IN

As action starts, we have more drawings near the starting pose, one or two in the middle, and more drawings near the next pose. Fewer drawings make the action faster and more drawings make the action slower. Slow-ins and slow-outs soften the action, making it more life-like. For a gag action, we may omit some slow-out or slow-ins for shock appeal or the surprise element. This will give more snap to the scene.

7. ARCS

All actions, with few exceptions (such as the animation of a mechanical device), follow an arc or slightly circular path. This is especially true of the human figure and the action of animals. Arcs give animation a more natural action and better flow. Think of natural movements in the terms of a pendulum swinging. All arm movement, head turns and even eye movements are executed on an arcs.

8. SECONDARY ACTION

This action adds to and enriches the main action and adds more dimension to the character animation, supplementing and/or re-enforcing the main action. Example: A character is angrily walking toward another character. The walk is forceful, aggressive, and forward leaning. The leg action is just short of a stomping walk. The secondary action is a few strong gestures of the arms working with the walk. Also, the possibility of dialogue being delivered at the same time with tilts and turns of the head to accentuate the walk and dialogue, but not so much as to distract from the walk action. All of these actions should work together in support of one another. Think of the walk as the primary action and arm swings, head bounce and all other actions of the body as secondary or supporting action.

9. TIMING

Expertise in timing comes best with experience and personal experimentation, using the trial and error method in refining technique. The basics are: more drawings between poses slow and smooth the action. Fewer drawings make the action faster and crisper. A variety of slow and fast timing within a scene adds texture and interest to the movement. Most animation is done on twos (one drawing photographed on two frames of film) or on ones (one drawing photographed on each frame of film). Twos are used most of the time, and ones are used during camera moves such as trucks, pans and occasionally for subtle and quick dialogue animation. Also, there is timing in the acting of a character to establish mood, emotion, and reaction to another character or to a situation. Studying movement of actors and performers on stage and in films is useful when animating human or animal characters. This frame by frame examination of film footage will aid you in understanding timing for animation. This is a great way to learn from the others.

10. EXAGGERATION

Exaggeration is not extreme distortion of a drawing or extremely broad, violent action all the time. It's like a caricature of facial features, expressions, poses, attitudes and actions. Action

traced from live action film can be accurate, but stiff and mechanical. In feature animation, a character must move more broadly to look natural. The same is true of facial expressions, but the action should not be as broad as in a short cartoon style. Exaggeration in a walk or an eye movement or even a head turn will give your film more appeal. Use good taste and common sense to keep from becoming too theatrical and excessively animated

11. SOLID DRAWING

The basic principles of drawing form, weight, volume solidity and the illusion of three dimension apply to animation as it does to academic drawing. The way you draw cartoons, you draw in the classical sense, using pencil sketches and drawings for reproduction of life. You transform these into color and movement giving the characters the illusion of three-and four-dimensional life. Three dimensional is movement in space. The fourth dimension is movement in time.

12. APPEAL

A live performer has charisma. An animated character has appeal. Appealing animation does not mean just being cute and cuddly. All characters have to have appeal whether they are heroic, villainous, comic or cute. Appeal, as you will use it, includes an easy to read design, clear drawing, and personality development that will capture and involve the audience's interest. Early cartoons were basically a series of gags strung together on a main theme. Over the years, the artists have learned that to produce a feature there was a need for story continuity, character development and a higher quality of artwork throughout the entire production. Like all forms of story telling, the feature has to appeal to the mind as well as to the eye.

Reference:

<http://www.animationtoolworks.com/library/article9.html>