

# 12TH PROVINCIAL SKILLS COMPETITION

## 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR



**87**

### **3D CHARACTER COMPUTER ANIMATION**

**Scope document**

**Secondary Level – Team of 2**

**Friday, April 3rd – College of the North Atlantic, St. John's, NL**

***Note : Each registered school may enter one team of 2***

**Duration of Contest: 5.0 hours – 1 day**

#### **SAFETY REQUIREMENTS:**

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

#### **PURPOSE OF THE CHALLENGE**

To produce a coherent movie, students must demonstrate the capacity to captivate the audience with a good story. The purpose of the challenge is to evaluate each team's ability, skill and knowledge of 3-D animation as they prepare for employment in the animation field. This challenge deals with the creation and animation of characters and models using a 3-D animation software. There are no limitations as to the nature or complexity of the characters. A good animated character is one that creates empathy.

#### **PROPOSED EVENT TIMES**

**8:00 AM – 8:30 AM** - Registration for the 2008 competition in the lobby of the CNA

**8:30 AM – 9:00 AM** - Orientation to the competition and provision of the animation "Theme"

**9:00 AM – 9:30 AM** - Storyboarding and Model Sheets – No access to computers. Storyboards must be handed in to the Provincial Technical Committee member by 9:45 AM.

**9:30 AM – 12:00 AM** – Production time

**12:00 AM – 12:30 PM** – Lunch

**12:30 PM – 2:00 PM** – Production Time

**2:00 PM** - Completed, rendered animation must be provided to technical committee.

- There will be a 30-minute mandatory lunch break.
- We will strive to provide competitors the same amount of time to complete their animation.
- Time is a limiting factor. Competitors are required to budget their time effectively to complete the animation.

#### **SKILLS AND KNOWLEDGE TO BE TESTED**

By scripting and storyboarding the competitor puts forth their idea on paper and then further develops the project by creating and animating, and assembling all the pieces of their movie for presentation within the given time period. Competitors can use pencil or electronic tools to create the necessary graphics needed to produce a movie. This represents the animation process. The competition will focus on the participants' ability to *tell a story using a 3-D animation software*.

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### 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.. The “Form” and “Theme” of the animation to be prepared by competitors will be revealed on the morning of the competition.

### 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 30 minutes of competition students will be allowed access to the computer workstations.
3. Storyboards and model sheets will be collected after the 45 minute period. The final product will be compared to the storyboards. Storyboards will be returned to each team after they have been copied by the NTC. 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 must demonstrate their knowledge of the 12 principles of animation in their project.
6. Nowhere within the presentation should the name of the students, their school or community appear.
7. 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.
8. 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.
9. The length (playing time in seconds) will be determined by the theme. This will be around 30 seconds.
10. The teams will work independently. Instructors and/or observers will give no assistance and are not allowed in the competition area.
11. Judging will immediately follow the competition, and will be approximately 10 minutes /team in duration. Teams will prepare a presentation to the judges, which will cover storyboard and character design and the planning and execution process. The schedule of the presentation and evaluation will be approximately as follows:
  - 1 minute setup of poster board
  - 3 minutes - Presentation of products (storyboard, model sheets, and animation)
  - 1 minute - View animation
  - 1 minute - Questions from judges (then competitors leave room.)
  - 3 minutes - Judges' evaluation

### EQUIPMENT, TOOLS, SUPPLIES

#### **EQUIPMENT PROVIDED BY THE PROVINCIAL TECHNICAL COMMITTEE (PTC):**

Hardware – Pentium IV (2+ Ghz) compatible computer fitted with SVGA 17-19inch monitor and optical mouse w/wheel, Video: 128 MB RAM OpenGL video card. System memory: 1 GB RAM. Windows XP Pro.

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Printer. HP LaserJet , Colour Inkjet

Storyboard templates sheets can be downloaded from the Skills Newfoundland and Labrador website. (or see below)

### SOFTWARE :

#### **PROVIDED BY PTC / CNA**

3D Animation Software: Maya, 3D Studio Max,

2D Graphic Software: Adobe Photoshop.

Viewing software: Quicktime Pro, and MS Media Player.

#### **PROVIDED BY COMPETITOR**

Any other software, e.g. Lightwave, Softimage. (See Notes 1, 2, and 3 below)

No external support programs or plug-ins (except those found in the final shipped version of the software) may be used.

Image input devices (Digital Camera)

### OTHER MATERIALS:

In addition, the following equipment may be brought to the competition by competitors:

- Pencils, erasers, fine-tip markers of any colour.
- Standard storyboard and model sheets (see below).
- Poster board and push pins for presentation
- Tablet – should be provided to PTC for installation early in the morning of the competition.
- Headphones and microphones for recording/auditing sounds associated with the animation.
- A portable USB storage device (empty) in case file transfer between teammates is required.

### IMPORTANT NOTES:

1. If competitors decide to bring their own software **they must also bring their own computer hardware**. This is due to the uncertain nature of installing software, particularly on networked computers with restrictive software programs.
2. **If competitors bring their own computer hardware to the competition** the PTC reserves the right to scan its hard drive(s) for plug-ins or animation files which would **unfairly** benefit the competitor. The disadvantage of this arrangement may be that these private computers are not networked, so file transfer and sharing between the members of a competitor team may require the use of portable storage devices, such as USB drives, which PTC members will view to ensure they are empty of any other files.
3. Teams ARE REQUIRED to contact the Provincial Technical Committee (PTC) chair, at the latest, by **March 1, 2009** to advise if the team plans to bring their own computer software/hardware.
4. If students choose to listen to music throughout the competition, all music CDs brought into the competition area must be commercially recorded and produced.

Personally recorded data CDs and mp3 players are not allowed at the competition for this purpose.

### RELATED 3D SOFTWARE RESOURCE WEBSITES:

3D MAX [HTTP://WWW.DISCREET.COM/EDUCATION/](http://www.discreet.com/education/)

MAYA [HTTP://WWW.ALIAS.COM/ENG/INDEX.SHTML](http://www.alias.com/eng/index.shtml)

CINEMA 4D [HTTP://WWW.MAXON.NET/](http://www.maxon.net/)

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LIGHTWAVE [HTTP://WWW.NEWTEK.COM](http://www.newtek.com)  
SOFTIMAGE [HTTP://WWW.SOFTIMAGE.COM](http://www.softimage.com)  
ANIMATOR ( FREE ) [HTTP://WWW.ANIM8TOR.COM](http://www.anim8tor.com)

### RELATED ANIMATION BASICS RESOURCE WEBSITES

[www.freetoon.com](http://www.freetoon.com)

[HTTP://WWW.COMET-CARTOONS.COM/TOONS/3DDOCS/CHARANIM/](http://www.comet-cartoons.com/toons/3ddocs/charanim/)

[HTTP://WWW.SIGGRAPH.ORG/EDUCATION/MATERIALS/HYPERGRAPH/ANIMATION/CHARACTER ANIMATION/PRINCIPLES/PRIN TRAD ANIM.HTM](http://www.siggraph.org/education/materials/hypergraph/animation/character_animation/principles/prin_trad_anim.htm)

### JUDGING CRITERIA:

#### POINT BREAKDOWN / 1000 TOTAL

To qualify for a medal, competitors **MUST** achieve a minimum of 600 pts. Judges will individually view and assess final animations. Tabulation sheets will be given to the members of the PTC for verification of scores. In the event of a tied score, judges will be asked to confer and come to a consensus on winners and base their decision on the film that shows the most *effective application of animation principles*. Judges should direct any questions in relation to scoring exclusively to members of the PTC.

#### Storytelling /250

Storyline illustrates the theme provided in a creative and original manner.

Clarity of message (storyboard demonstrates all elements to be communicated visually to the audience)

Layout: effective relationship between the camera and the character.

Final presentation illustrates storyline planned and outlined in storyboards.

#### 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.

Unity of style amongst the character, environment and props.

#### Animation /250

Effective application of animation principles such as: Timing, Ease in – Ease out, Follow through and Overlap, Anticipation – Action - Reaction, Exaggeration, etc.

### PROVINCIAL TECHNICAL COMMITTEE :

Clarence Button, Chair <a href="mailto:clarencebutton@esdnl.ca">clarencebutton@esdnl.ca</a>	Kevin Andrews, Member <a href="mailto:kevinandrews@esdnl.ca">kevinandrews@esdnl.ca</a>
Jason Aue, Member <a href="mailto:jasonaue@esdnl.ca">jasonaue@esdnl.ca</a>	Christina Cox, Member <a href="mailto:christinacox@esdnl.ca">christinacox@esdnl.ca</a>

**Competition Rules and Evaluation**


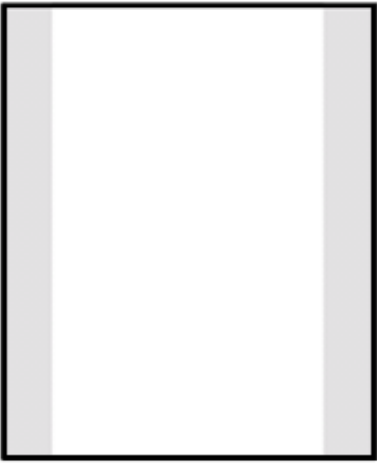
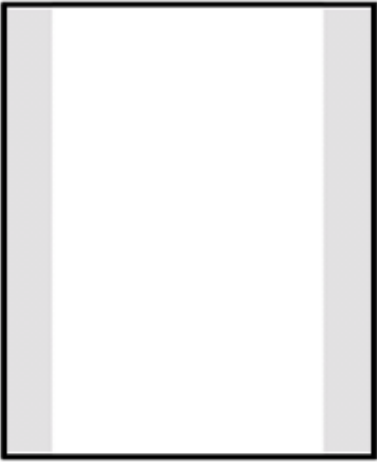
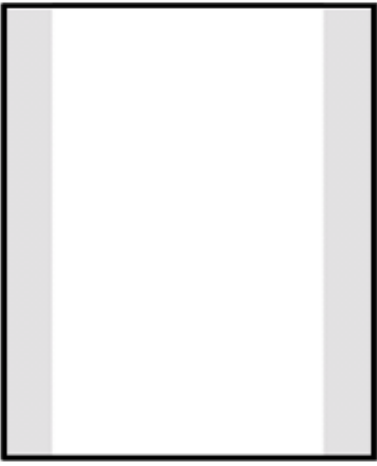
A team consists of two people. Animations created must address the theme as given. Teams must work independently. Only software reference manuals may be used as resource materials. Final storyboards and project files must be submitted and remain with Skills Canada.

**Contest Theme: -----To be announced on April 3<sup>rd</sup>, 2009-----**

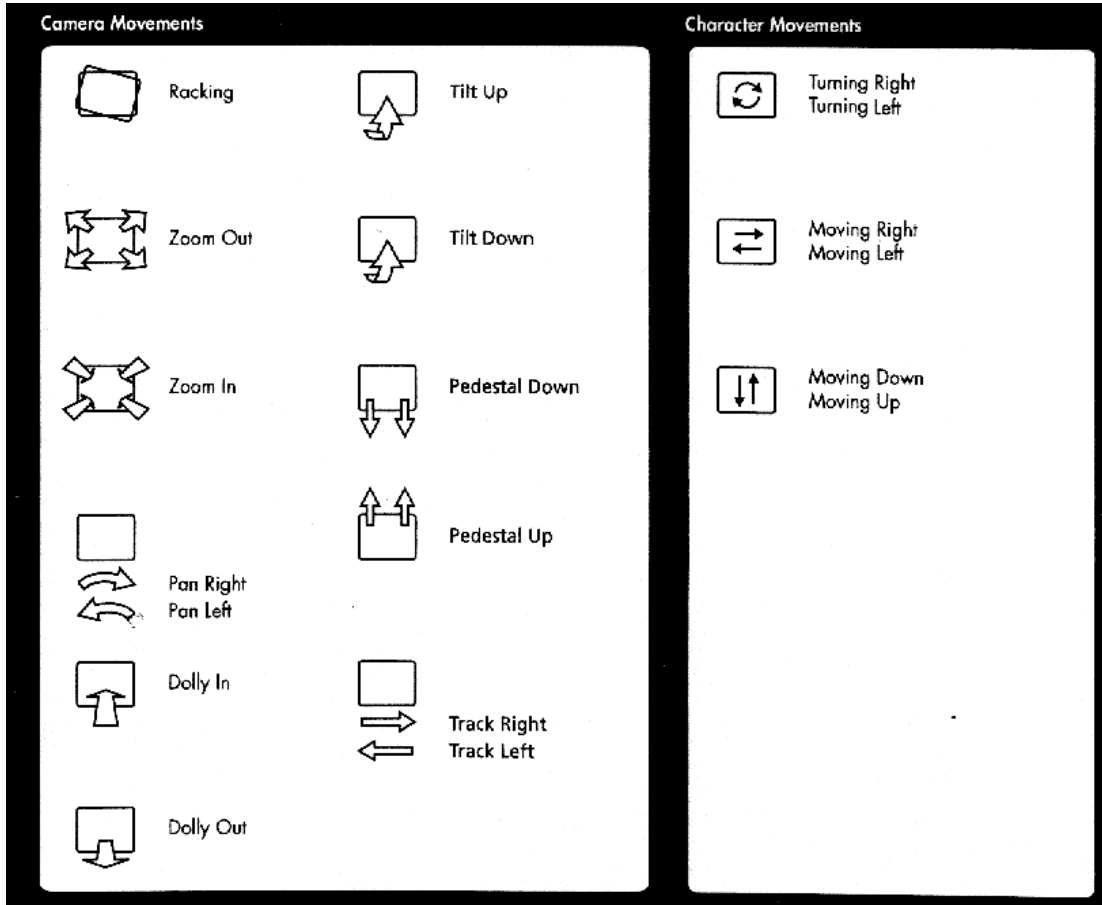
<b>Story Telling 250 Marks:</b>					
Clarity of message (storyboard demonstrates all elements to be communicated visually to the audience)	1__	2__	3__	4__	5__
Storyboard uses industry standard symbols and terminology as provided in the legend.	1__	2__	3__	4__	5__
Final presentation illustrates storyline planned and outlined in the storyboard.	1__	2__	3__	4__	5__
Methods chosen (ex. Camera shots, effects) and outlined on the storyboard compliment the storyline.	1__	2__	3__	4__	5__
Storyline illustrates the theme provided in a creative and original manner.	1__	2__	3__	4__	5__
<b>Story Telling Total</b>					
<b>Character Design 250 Marks:</b>					
Quality of individual Models (structure, proportions and appeal)	1__	2__	3__	4__	5__
Contrast between each character helps to emphasize personality traits in the main character.	1__	2__	3__	4__	5__
Each character's look and style is relevant to the story.	1__	2__	3__	4__	5__
Model sheet reflects front side (profile), ¾ and back views of the character.	1__	2__	3__	4__	5__
<b>Character Design Total</b>					
<b>Aesthetics 250 Marks:</b>					
Effective use of colour	1__	2__	3__	4__	5__
Effective use of texture	1__	2__	3__	4__	5__
Effective use of Lighting to create atmosphere and continuity within the scenes.	1__	2__	3__	4__	5__
Unity of style amongst the character, environment and props.	1__	2__	3__	4__	5__
<b>Aesthetics Total</b>					
<b>Animation 250 Marks:</b>					
Timing of the story: obvious beginning and ending	1__	2__	3__	4__	5__
Effective use of specific actions: gravity, anticipation, exaggeration, secondary action.	1__	2__	3__	4__	5__
Staging: relationship between the camera and the character	1__	2__	3__	4__	5__
Acting: expression, effective posing, ability to provoke empathy and emotion in the audience.	1__	2__	3__	4__	5__
<b>Animation Total</b>					
<b>TOTAL SCORE</b>					

APPENDICES: STORYBOARD SAMPLE



TEAM <input type="text"/> WRITTEN BY : <input type="text"/> TITLE : <input type="text"/>			ACTION	SOUND	NOTES	page
		ACTION	SOUND	NOTES		
		ACTION	SOUND	NOTES		

## STORYBOARD SYMBOLS



**MODEL SHEETS**

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

## 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 arc.

## 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>

**CONCEPT DEVELOPMENT STORY BOARD**

**PAGE #** \_\_\_\_\_

Team Number	Scene Title	Team Number	Scene Title
Scene #		Scene #	
Activity Description :		Activity Description :	