

# 7TH ANNUAL INTERMEDIATE SKILLS CHALLENGE

## 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR



### 2D and 3D CHARACTER COMPUTER ANIMATION

#### Scope document

Intermediate School Level – Team of 2

Saturday, January 30, 2010

Mount Pearl Intermediate School, Mount Pearl, NL

**DURATION OF COMPETITION:** 5 hours – 1 day : Start time is 8:30 AM

#### **SAFETY REQUIREMENTS:**

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

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

The goal of this competition is to produce an animation movie using a 2D or 3D animation software package. The most important part of this competition is to tell a story using character animation as the medium. Competitors must demonstrate the capacity to capture the interest and imagination of the audience with a good story. The focus of the competition is the character – not the background. There are no limitations as to the nature, simplicity or complexity of the characters. A good animated character is one that creates empathy and is believable. Technical skills will form a minor element of the competition grading. This competition is designed to evaluate each team's creativity, imagination, skill and knowledge of 2D and/or 3D animation and ability to use this medium. This year's Intermediate School Challenge includes the opportunity to use many different software options. The only stipulation is that the judges must be able to open and view the animation file at the end of the competition and consequently, the animation must be saved in a file readable by common video players.

- There will be a 30-minute long mandatory lunch break for all competitors.
- Competitors will each be given the same amount of time to complete their animation.

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

By scripting and storyboarding creative animators frame their ideas in a story sequence on paper. This is where the animation sinks or swims! Is there a story or message? Is it clearly and cleverly portrayed. Next, competitors create the pieces of the animation, most importantly the characters, but also an appropriate background and finally assemble all the pieces into the animation movie for presentation. 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 2D or 3D Animation Software.

## 7TH ANNUAL INTERMEDIATE SKILLS CHALLENGE

### 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

#### COMPETITION EXPECTATIONS:

- Analyze the “Theme” provided at the competition on which the animation will be based.
- Brainstorm to develop a creative story around the “Theme”, including plot, characters, and setting.
- Following the theme provided, draw a storyboard and character model sheets on paper, which set out the content and sequence of the proposed animation.
- Storyboards and model sheets will be collected after the one hour period. These storyboards illustrate the story and will be compared with the final animation to judged consistency. **When the teachers review the storyboards and model sheets and hand them back, teams are NOT permitted to make changes.**
- Competitors should note that model sheets **MUST** include front, profile (side),  $\frac{3}{4}$ , and back views of the main character(s).
- For the first 45 minutes of the competition, competitors will NOT be allowed access to the computer workstations to which they are assigned, to encourage thoughtful development of the story to be animated. Following that period, competitors may start animating using the computers.
- Nowhere within the final animation should the names of the competitors, their school or community appear.
- There must be an obvious beginning and end to the animation. This could be through the use of the first frame being black or text frames.
- The length (playing time in seconds), will be determined by the “Theme” however the recommended playing time of the animation is between 15 and 30 seconds.
- This competition is a team effort. Teams will be provided with two workstations at the competition.
- The teams will work independently. Instructors and/or observers will give no assistance and are not allowed in the competition area. The invigilating technical committee members are the only persons permitted in the competition area.
- The duration of the competition must be no more than five (5) hours, not including a mandatory lunch break.

#### EQUIPMENT, TOOLS, SUPPLIES, CLOTHING - **Attention Competitors:**

##### BRINGING YOUR OWN COMPUTERS:

This is the surest method that you will encounter no difficulties with equipment in the competition. If you choose this option, there are two strict requirements and some recommendations.

##### Requirement 1.

When you bring the computer to the competition, we will search and examine it for files which may contain content useful for the animation and we will delete them, if found. Consequently, if there are graphics or other files which may be useful for the competition, we suggest that you move them to a CD for later retrieval on your computer.

## 7TH ANNUAL INTERMEDIATE SKILLS CHALLENGE

### 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

#### Requirement 2.

Your computer must have a mechanism for saving and exporting a potentially large animation file for transfer. This would be a CD burner, a DVD burner or a USB storage key.

#### Recommendation 1.

##### Hardware

Pentium IV (2+ GHz) compatible computer, with  
SVGA (minimum) 19 inch monitor  
Optical mouse w/wheel  
Video: 128 MB RAM OpenGL video card  
1 GB RAM (minimum)  
OS: Windows XP Pro or later

##### 3D Software options (*only 3-D Studio Max will be provided at the competition*):

Maya  
3D Studio Max  
Lightwave  
Softimage.

##### 2D Software options: (*only Photoshop and Macromedia Flash will be provided*)

Adobe Photoshop CS4 /Flash <http://www.adobe.com>  
ToonBoom <http://www.toonboom.com>  
CTP <http://www.cratersoftware.com>  
Dogwaffle project <http://www.thebest3d.com/dogwaffle/free/>  
Pivot <http://www.pivotlog.net/>

##### Viewing / judging software will be:

Quicktime Pro  
MS Media Player 10.  
Real-time video player

**N.B.** Competitors will need to convert their finished animation to one of these standard viewing reader formats.

##### Eligible image input devices (please note sources below):

Digital Camera (supplied by competitor if required)  
Scanner (supplied by PTC)  
Printer (supplied by PTC)

##### NOTICE:

- i. No external support programs or plug-ins (other than those found in the final shipped version of the software) may be used.
- ii. Additional storyboard templates sheets can be downloaded from the Skills Newfoundland and Labrador website [www.skillscanada-nfld.com](http://www.skillscanada-nfld.com)

##### IMPORTANT NOTES:

Teams are required to contact the Technical chair by **November 13<sup>th</sup> 2009** to inform the Provincial Technical Committee (PTC) which software applications they will be using. The committee will make all efforts to advise the competitors before the start of the event.

## 7TH ANNUAL INTERMEDIATE SKILLS CHALLENGE

### 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

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 permitted in the competition area.

#### RELATED 3D SOFTWARE - RESOURCE WEBSITES:

3D MAX <http://www.discreet.com/education/>  
MAYA <http://www.alias.com/eng/index.html>  
CINEMA 4D <http://www.maxon.net/>  
LIGHTWAVE <http://www.newtek.com>  
SOFTIMAGE <http://www.softimage.com>  
ANIMATOR (free) <http://www.anim8tor.com>

#### RELATED ANIMATION BASICS - RESOURCE WEBSITES

[www.freetoon.com](http://www.freetoon.com)  
[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 500 pts (50%).
- Judges will interview each team, in turn, based on their team number.
- Competitors will be asked to introduce their story and illustrate it with the storyboard.
- The judges and competitors will then view their animation and ask questions or request clarifications or rationale, if appropriate.
- The competitors will then leave and the judges will assess the final work.
- PTC members verify the scores on the animation tabulation sheets
- In the event of a tie, judges will be asked to confer and come to a consensus on winners and base their decision on the animation which shows the most **effective application of animation principles**.
- Judges should direct any questions on their evaluation protocol, only 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.

## 7TH ANNUAL INTERMEDIATE SKILLS CHALLENGE

### 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

#### **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.

**TOTAL POSSIBLE SCORE: 1000 points**

**N.B. 3D animations will be judged separately from 2D animations, *but judges will use the same evaluation criteria for both categories***

#### **PROVINCIAL TECHNICAL COMMITTEE:**

Clarence E. Button (Technical Chairperson)

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Christina Cox

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Kevin Andrews

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## 7<sup>th</sup> ANNUAL INTERMEDIATE SKILLS COMPETITION (ISC)

### 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

#### 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 November 28<sup>th</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, 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 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>					

7<sup>th</sup> ANNUAL INTERMEDIATE SKILLS COMPETITION (ISC)  
2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

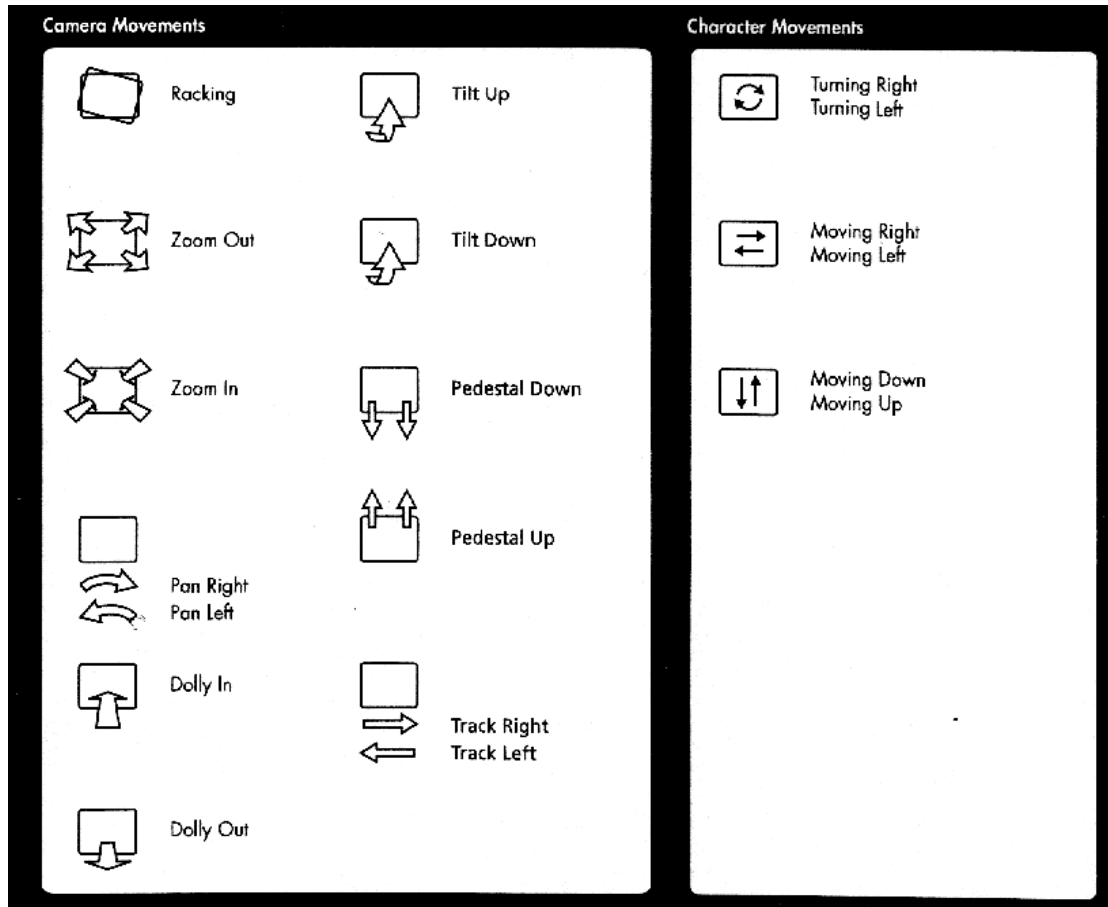
**APPENDICES: STORYBOARD SAMPLE**



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

7<sup>th</sup> ANNUAL INTERMEDIATE SKILLS COMPETITION (ISC)  
2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

**STORYBOARD SYMBOLS**



7<sup>th</sup> ANNUAL INTERMEDIATE SKILLS COMPETITION (ISC)

2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

**MODEL SHEETS**

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

## 7<sup>th</sup> ANNUAL INTERMEDIATE SKILLS COMPETITION (ISC)

### 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

## 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 more 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.

## 7<sup>th</sup> ANNUAL INTERMEDIATE SKILLS COMPETITION (ISC)

### 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

#### 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.

## 7<sup>th</sup> ANNUAL INTERMEDIATE SKILLS COMPETITION (ISC)

### 2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR

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>

**7<sup>th</sup> ANNUAL INTERMEDIATE SKILLS COMPETITION (ISC)**  
**2009 SKILLS CANADA NEWFOUNDLAND AND LABRADOR**

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**CONCEPT DEVELOPMENT STORY BOARD**      **PAGE #** \_\_\_\_\_

Team Name :	
Scene #	Scene #
Activity Description :	Activity Description :

Scene #	Scene #
Activity Description :	Activity Description :