

# BAA Animation 12

**District Name:** Coquitlam

**District Number:** SD #43

**Developed by:** Gordon Foulkes, Aryn Gunn, Mike Schoenhals, Graham Scott, Dennis Wong.

**Date Developed:** December 2004

**School Name:** Port Moody Secondary, Terry Fox, Gleneagle, Dr. Charles Best

**Principal's Name:** Karen Jensen, Dan Derpak, Dave Matheson, Brian Fichter

**Board/Authority Approval Date:** February 22, 2005

**Board/Authority Signature:**

**Course Name:** Animation

**Grade Level of Course:** 12

**Number of Course Credits:** 4

**Number of Hours of Instruction:** 120 hours

**Prerequisite(s):** None. A visual arts and technology would be beneficial.

**Special Training, Facilities or Equipment Required:** May include cameras, computers, light tables, 2D/3D software, and editing software. Teacher offering this course should have a background knowledge of art and design, experience in 2D and/or 3D animation, some experience in multimedia would be beneficial.

## **Course Synopsis:**

The students will perceive, respond, create and communicate using the visual medium of animation. This program is designed to develop students' creative, artistic, and technical skills in the areas of drawing, design, character animation and storytelling. Students that have completed this course will have a general knowledge of the field of animation and understand the differences between genres and how they are created. Students will design and create their own animation, in one or more formats, classical, claymation or 3D, applying what they have learned about visual story-telling through movement. Part of the course will also be dedicated to career exploration in animation.

**Rationale:**

In the last decade, animation has become a growth industry in Vancouver. The success of animated television series and major film productions has created an increasing demand for skilled animation artists. Consumer demand for high quality animation and visuals has also fuelled the growth of the computer animation and special effects industries. Visual artists with excellent character animation skills and a solid understanding of computer animation technology are in demand world-wide.

Student interest in the field of animation as a career choice and personal interest as a means of artistic expression is on the rise. Many local colleges now offer post-secondary degrees, diplomas, and certificates in animation and several are expecting students to have a portfolio and/or a demo reel as a prerequisite. Coquitlam district has offered locally developed animation courses for the past several years and students are expecting to continue studies in this field in the future.

**Organizational Structure:**

| <b>Unit/Topic</b>  | <b>Title</b>                                       | <b>Time</b> |
|--------------------|----------------------------------------------------|-------------|
| Unit 1             | Introduction to Animation – Contextual Exploration | 20 hours    |
| Unit 2             | Character Design                                   | 20 hours    |
| Unit 3             | Principles and Concepts of Animation               | 40 hours    |
| Unit 4             | Processes of Animation                             | 40 hours    |
| <b>Total Hours</b> |                                                    | 120 hours   |

## **Unit 1: Introduction to Animation – Contextual Exploration**

**Time: 20 hours**

### *Overview:*

In this unit students will explore the historical, cultural, social, and personal contexts of animation. Various technologies used to generate animation will be explored. Students will gain an awareness of animation as a viable career path as they explore a genre of their own interest. Students will research the educational and career options leading to a career in animation as well as the expectations of potential employers in the field.

### **Curriculum Organizer - Image-Development and Design Strategies**

*It is expected that the student will:*

- develop a graphical timeline ordering to a particular type of animation

### **Curriculum Organizer - Contexts (Personal, Social, Cultural, and Historical)**

*It is expected that the student will:*

- identify the intended audience for different types of animations
- identify and explore different styles of animation
- identify alternative forms of animation
- summarize the historical timeline of animation
- analyze the various post-secondary programs for suitability for individual career paths
- assess career paths in animation in comparison to other related careers
- identify the career opportunities for and roles of persons employed in the animation industry and determine the educational prerequisites
- describe the non-traditional work environment of the field
- demonstrate an understanding of the skills and training needed to pursue animation careers

### **Curriculum Organizer - Materials, Technologies, and Processes**

*It is expected that the student will:*

- describe the evolution of specific media technologies used to make animation
- understands the use appropriate vocabulary when discussing the materials, technologies and processes of animation

## **Unit 2: Character and Layout Design**

**Time: 20 Hours**

### *Overview:*

This unit explores the dynamics of character design as it pertains to the many genres, styles and techniques of animation.

### **Curriculum Organizer - Image-Development and Design Strategies**

*It is expected that the student will:*

- develop their knowledge of all three perspective styles
- demonstrate a thorough knowledge of compositional models utilized in both 2-D and/or 3-D animation shorts
- demonstrate an understanding of the purpose of compositional strategies
- select the *illusion of space* strategies that best suit their specific needs

### **Curriculum Organizer - Contexts (Personal, Social, Cultural, and Historical)**

*It is expected that the student will:*

- analyze character styles for colour schemes and textures
- create layouts for a specific purpose

### **Curriculum Organizer - Visual Elements and Principles of Art and Design**

*It is expected that the student will:*

- develop characters that reflect proper Appeal and Solid Drawing skills
- demonstrate the use of appropriate Elements and Principles of Design in the creation of scene layouts

### **Curriculum Organizer - Materials, Technologies, and Processes**

*It is expected that the student will:*

- demonstrate the use of various textures and colour schemes in developing their own characters

### **Unit 3: Principles and Elements of Animation**

**Time: 40 Hours**

#### *Overview:*

Walt Disney first developed the principles of animation as a method of teaching junior animators the trade of classical animation. Over the years the principles of changed to accommodate new methods of animating (EG: 3 dimensional computer animation).

#### **Curriculum Organizer - Image-Development and Design Strategies**

*It is expected that the student will:*

- analyze motion to determine and create realistic keyframed animation
- demonstrate an understanding of the timing techniques used to convey realistic animated motion
- demonstrate proficiency in creating mood and atmosphere

#### **Curriculum Organizer - Contexts (Personal, Social, Cultural, and Historical)**

*It is expected that the student will:*

- develop their own animation style by examining the work of other animators

#### **Curriculum Organizer - Visual Elements and Principles of Art and Design**

*It is expected that the student will:*

- demonstrate the use of light, sound, movement, camera and scene composition (staging)
- identify principles of animation in animated film
- demonstrate the correct use of timing for dramatic effect
- demonstrate proficiency with the Principles of Animation as they apply to character motion
- demonstrate the use of the proper attributes of movement in the creation of an animation
- develop animate objects using keyframes and motion path techniques

## **Unit 4: Process of Animation**

**Time: 40 Hours**

*Overview:* In this unit students will explore and put to use strategies of animation creation from idea creation to final product. Students will become familiar with the technology and techniques they will use in the project and explore the potential of various themes and topics.

### **Curriculum Organizer - Image-Development and Design Strategies**

*It is expected that the student will:*

- select organizational strategies best suited for each application
- create an animated short of a style of their own choice

### **Curriculum Organizer - Contexts (Personal, Social, Cultural, and Historical)**

*It is expected that the student will:*

- demonstrate an understanding of the various animated shorts and evaluate them for editing choices
- develop treatments and scripts for a particular audience

### **Curriculum Organizer - Visual Elements and Principles of Art and Design**

*It is expected that the student will:*

- analyze professional storyboards for staging and camera techniques

### **Curriculum Organizer - Materials, Technologies, and Processes**

*It is expected that the student will:*

- evaluate tools for appropriate use in animation
- identify, describe, evaluate and use a variety of processes, tools, and techniques available for various animation forms
- demonstrate the safe use and care for all equipment and tools
- demonstrate a proficiency in the process of animation
- develop export formats for animation files appropriate to the final product
- create a final animated short that involves editing skills
- demonstrate proficiency in the creative process from idea to finished product

**Instructional Component:**

- Direct instruction
- Indirect instruction
- Interactive instruction
- Independent instruction
- Modelling
- Practical creativity
- Brainstorming
- Cooperative learning opportunities
- Media presentations
- Internet research
- Analysis of commercial animation
- Analysis of classroom animation
- Guest speakers

**Assessment Component:**

- Effective formative assessment via:
  - Clearly articulated and understood learning intentions and success criteria
  - Questions posed by students, peers and teachers to move learning forward
    - Discussions and dialogue
  - Feedback that is timely, clear and involves a plan
  - Students are resources for themselves and others – peer and self-assessment
  - Student ownership

Formative assessment used to adapt learning experiences and inquiry plans on an on-going basis to meet specific learning goals.

Development, awareness and action, based upon metacognition intended to lead to learner independence and self-coaching.

**Summative Assessment:**

Summative assessments will be determined as students demonstrate proficiency/mastery toward particular learning outcomes. Summative assessments and final grades will reflect the following:

- Students will work collaboratively with the teacher to determine summative achievement on assignments and letter grades based upon dialogue, and evidence of learning
- Behaviour and work habits will NOT be included when determining letter grades
- Marks will not be deducted for late work
- Extra credit and bonus marks will not be awarded
- Plagiarizing will not result in reduced marks/grades –the student will be required to demonstrate their learning authentically
- Attendance will not be considered toward letter grade
- Only individual learning demonstrated –no group marks – will be used to determine grades
- Letter grades will reflect learning towards the learning outcomes articulated above
- Letter grades will be based upon criteria provided/agreed upon toward the learning outcomes
- Letter grades will be determined in relation to the learning outcomes – not in comparison to the achievement of other students

- Poor work will not be assessed towards grades – students will only be assessed on quality work
- Professional judgment and evidence will be used to determine final letter grade in consultation with the student
- Zeros will not be assigned to missed assignments – all required assignments must be completed
- Formative or practice towards learning outcomes will not be included in final grade assessment
- Most recent evidence toward learning outcomes will be used to assign letter grades – learning is not averaged over time

## **Learning Resources:**

### ***Print Material***

- The Encyclopedia of Animation Techniques
- The Illusion of Life: Disney Animation
- Animation Magazine
- 3D Graphics & Animation: From Starting Up to Standing Out
- Warner Bros: Animation Art
- How to Animate Film Cartoons
- The Animation Book
- The Art of Storyboarding
- The Animator's Workbook: Step by Step Techniques
- How To Draw Animation
- How To Draw Comic Book Heroes and Villains
- Animation Magazine
- Drawing the Head and the Figure
- The Comic Book of Bad Guys and Gals

### ***Video***

- Computer Careers for Artists
- Animation: Education and the Industry in British Columbia
- Starting from Scratch: Through the Lens Series
- Computer Careers for Artists
- Animation: Education and the Industry in British Columbia
- Video in Focus



## Additional Information:

### 12 PRINCIPLES OF ANIMATION

#### 1. Squash and Stretch

This technique involves expanding and contracting the object(s) when they are in flight or are hitting a surface. For example: a ball bouncing on a surface.

#### 2. Anticipation

Setup for the main action. It cues the audience to what is going to happen next. For instance: a character winding up before a sprint.

#### 3. Staging

Staging is the clear presentation of an idea. What is the appropriate camera angle, character pose, screen direction and composition for the scene?

#### 4. Straight Ahead Action and Pose to Pose

Pose to Pose is a drawing technique in which the artist draws the first and the last image of the action and then goes back and does the in-betweens.

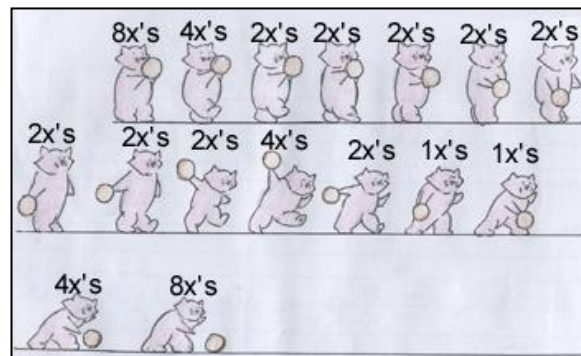
#### 5. Follow Through and Overlapping Action

Follow through is an extension of the main action. For instance, the continuation of a golf swing after the ball contact (primary action). Follow through is also evident by a secondary appendage (tail, hair, long ears) falls a little behind and continues further than the main character movement. Overlapping action dictates that not all character body parts will start and end its movement on the same frame. Such non-overlapping motions tend to look robotic. In the example at the right, the girl's hair moves a little behind the pace of her head and goes beyond the point at which her head stopped.



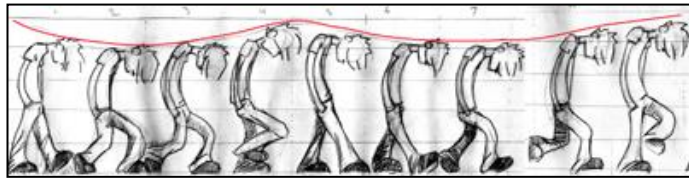
#### 6. Slow In and Slow Out

Organic actions accelerate and decelerate into and out of an action. In this example, the pig's movement rate is slow at the beginning and end (8 frames or 8x's) and fast when he releases the ball (1x's).



#### 7. Arcs

Arcs are used to define the natural trajectory of an object. For instance, the character at the right follows an arc as he stoops his head down and up throughout the walk cycle.



#### 8. Secondary Action

Any action that is second to the primary action is considered a secondary action. For instance: a character walking (primary action) may swing his/her arms back and forth (secondary action).

#### 9. Timing

Varying speed of motion can indicate different types and strengths of forces. Timing demonstrates different attitudes. Turning one's head very quickly implies a different motivation from doing so slowly. Fast walks can imply determination. Slow walks can imply depression.

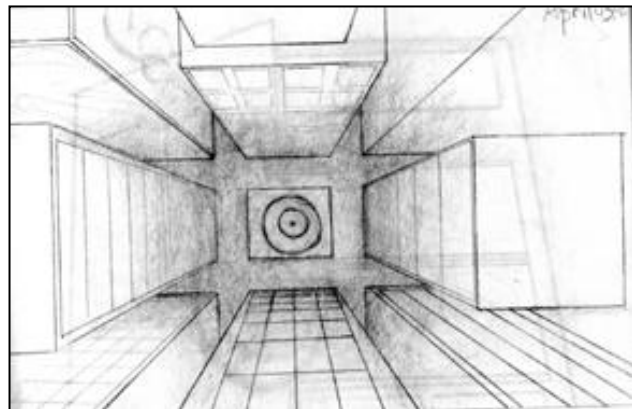
#### 10. Exaggeration

An image-development strategy used to over-emphasize a portion or aspect of an image. The thumbnail to the right demonstrates a good exaggerated pose.



#### 11. Solid Drawing

Each individual frame or drawing in an animation should be a work of art on its own. Also, it's important to stay "on-model," that is, each image of a character is consistent with the previous image. Characters and backgrounds should reflect weight, depth, and balance. The example to the right demonstrates good use of perspective creating the illusion of depth in the image.



#### 12. Appeal



The artistic concepts of composition, character design, color, camera angle, as well as all of the elements and principles of art apply to animation. Appeal involves the proper application of the general aesthetics in art and film. The images below demonstrate proper consideration of principles of design.



## GLOSSARY

This glossary is meant to help the reader understand the vocabulary associated with this document. It is not a complete list of terms relating to animation.

|                                       |                                                                                                                                            |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b><i>3 Dimensional Animation</i></b> | Animated movement that includes width, height, and depth and is accomplished through computer applications.                                |
| <b>Animation</b>                      | The technique of sequencing slightly altered images over time to give a sense of movement.                                                 |
| <b>Classical Animation</b>            | A series of drawings arranged to be photographed and shown in rapid succession as a motion picture.                                        |
| <b>Claymation</b>                     | An animation technique using pliable clay figures whose positions are manipulated incrementally before each exposure.                      |
| <b>Cutout Animation</b>               | A form of animation that involves using cutout drawings and then moving the cutouts in each frame to mimic motion.                         |
| <b>Cycles</b>                         | Many character actions are repetitive and can be reused over and over. For instance: a character walk and run cycle.                       |
| <b>Demo Reel</b>                      | A collection of animated shorts for the purpose of displaying the animator's work.                                                         |
| <b>Expression</b>                     | To make characters life-like and display emotion the animator uses facial gestures and body language to denote how a character is feeling. |
| <b>Flip-book</b>                      | A series of related images put into sequence and manually flipped to simulate movement.                                                    |
| <b>Forms of animation</b>             | There are four main types of animation: cutout, classical, claymation and 3 dimensional.                                                   |
| <b>In-between</b>                     | A drawing that is usually exactly between two extremes, or key drawings.                                                                   |
| <b>Keyframe</b>                       | A key drawing for the character's movement. After the keyframe is created, the artist may                                                  |

go back and complete the in-betweens.

**Lighting**

An effect that depicts how dark or light the set and characters are as well as where shadows will appear.

**Metamorphosis**

An image-development strategy used to change an image from one form to another.

**Movement**

A principle of art and design concerned with creating a distinctive structure that shows a feeling of action or a series of actions and guides a viewer's eye through a work of art.

**Path**

A trajectory an object follows.

**Perspective**

A method of drawing on a flat surface (which is two-dimensional) to give the illusion of depth or the third dimension.

**Phenokistoscope**

Probably the oldest device to actually produce motion pictures, developed in 1832 by Joseph Plateau.

**Portfolio**

An artist's resume that includes examples of his/her work.

**Primary Action**

The main motion of the character.

**Proportion**

The size relationship between the parts of an image and the whole.

**Rotation**

Character body parts can revolve around an axis. For instance: a character's head will turn on its axis.

**Storyboard**

A visual planning device, sketching out a sequence of frames for a comic strip, film, video, or multimedia presentation.

**Thaumatrope**

Invented in the 1820s, the thaumatrope uses persistence of vision to create the illusion of motion. Two images are placed on a card back to back and then twirled using a piece of string attached to each end to create the motion.

**Zoetrope**

An early tool that converted a sequence of still pictures to a moving sequence.