SPRING GROVE AREA SCHOOL DISTRICT

PLANNED COURSE OVERVIEW

Course Title: Computer Animation 1	**Length of Course:** 15 cycles
Grade Level(s): 10-12	**Periods Per Cycle:** 6
Units of Credit: .5	**Length of Period:** 43 minutes
Classification: Elective	**Total Instructional Time:** 64.5 hours

Course Description

This course is designed to give students an experience with animation in both 2-D and 3-D. A study into the history of animation will be explored. The students will learn the various jobs of computer animators along with getting basic experience of the programs. This class is designed to do simple animation projects to last approximately 10-30 seconds in length. Adobe Photoshop and Blender will be the primary programs with the option of incorporating new programs that become available and suit the current need of the class.

Instructional Strategies, Learning Practices, Activities, and Experiences

Critical Thinking	Guided Practice	Class Discussion
Best Practices Strategies	Flexible Groups	Posted Objectives and Agenda
Bell Ringers	Teacher Demonstration	Listening Examples

Assessments

In-class Projects and Lessons

Materials/Resources

Variety of Art Books	Animated Shorts	Computers/Internet

Adopted: 8/17/05

Revised: 6/20/11; 5/21/18

Animation	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Modeling Textures Materials Domain Selecting Hot Keys Modifiers Physics Rendering What is animation? What is the history of animation? What types of animation can you create?	The students will demonstrate knowledge needed to produce an animation. The students will demonstrate knowledge needed to model objects. The students will demonstrate knowledge needed to use modifiers. The students will demonstrate knowledge needed to use physics. The students will demonstrate knowledge needed to apply textures and materials. Vocabulary: Animation, timeline, cell, flat, transition, tween, dynamics, render, model, layer, opacity, background painting, bone, cartoon, depth of field, field, frame rate, key frame, listener, index of refraction (IOR), pixel, raster, roto-scoping, separation, squash and, stretch, stop-motion animation, vector, 2-D animation, 3-D animation Standards: 3.6.12.B ~ Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding. 3.7.12.C ~ Evaluate computer operations and concepts as to their effectiveness to solve specific problems.

Video Productions	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Plan and develop video productions Introduction digital video Setup a video project and capture video Design and develop video presentations What is video? What are the elements of video production? What is editing? What is Pre-Production? What is production? What is Post-Production?	The students will apply and analyze advanced information techniques to produce a complex image that effectively conveys a message (e.g., desktop publishing, audio and/or video production). The students will analyze and evaluate a message designed and produced using still, motion and animated communication techniques. The students will assess and apply multiple input and output devices to solve specific problems. The students will evaluate the effectiveness of software to produce an output and demonstrate the process design and apply multimedia techniques. The students will analyze, select, and apply the appropriate software to solve complex problems. Vocabulary: Above the line, Alpha Channel (AC), accent light, acetate base, acetone, acoustics, action cutting, Analog to digital converter (ADC), Automated dialogue replacement (ADR), address track, aerial shot, aliasing, ambient light, ambient noise, amplitude, distortion angle of view, anti-aliasing, aperture, arc, assemble, atmosphere, audible spectrum, background, backing track, backlight, balanced, beat, bed, beef, bit, blocking, boom, camera angle, center track, cinex strip, click, track, compression, control track, crossfade, crossover, cueing, cyan, decoder, dead spot, digital, dissolve, distortion, drop-in, drop frame, drop-out, dub, echo, fade, filter, flat, flicker, float, flood, format, frame, frame rate, freeze frame, gigabyte, incoming scene, key light, key numbers, kick, kiss, lamp, level, light value, looping, master, magenta, masking, matching, microphone, Musical Instrument Digital Interface (MIDI), mix, multichannel, multitrack, negative, noise, offline, online, opacity, out-take, pan, play, playback, rough cut, score, sensitivity, sight line, signal, sound, effect, soundtrack, tie in, timing, trailer, video, widescreen, zoom Standards: 3.6.12.B ~ Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding. 3.7.12.C ~ Evaluate computer operations and concepts as to their effectiveness to solve specific problems.

Photo Manipulation	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Manipulate photos Create selections Use layering techniques Develop spot channels and filters Design a painting What is photo manipulation? What is the process of image editing? What is a selection? What is resolution? What is compression? What file types should be used for print? What file types should be used for images on the internet? What is Red, Green, Blue (RGB)? What is Cyan, Magenta, Yellow, Black (CMYK)? What programs can be used? What is image size?	The students will demonstrate knowledge needed to manipulate photos. The students will demonstrate knowledge needed to create selections. The students will demonstrate knowledge needed to use layering techniques. The students will demonstrate knowledge needed to develop spot channels and filters. The students will demonstrate knowledge needed to design a digital painting. Vocabulary: Air brush, alpha channel, anchor point, anti-aliasing, background color, black, blur, brush, brushes palette, burn tool, cache, channels, clone, CMYK, copy, crop, curves, cut, diameter, dither, dodge, dots per inch (DPI), duplicate, Encapsulated PostScript (EPS), extract, eyedropper, fade, feather, file, flattening, font, foreground color, ghosting, Graphic interchange format (GIF), gigabyte, gradient, grayscale, guide, hand tool, handle, history palette, image, import, J Kerning, kilobyte, lasso tool, layer, line screen, line tool, magic wand tool, magnetic pen tool, menu bar, mode, moiré, move tool, navigate, noise, opacity, opaque, options bar, original, overlay, paint bucket, palette, pantone colors, paste, patch tool, path selection, Portable Document Format (PDF), pen tool, pencil tool, perspective, pixel, rasterize, resolution, reverse, rotate, scale, selective color, selection, slice tool, smudge tool, spot color, swatches palette, Tagged Image Format Files (TIFF), transparency, type tool, unsharpened mask, vector, workspace, yellow, zoom tool Standards: 3.6.12.B ~ Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving, and decoding. 3.7.12.C ~ Evaluate computer operations and concepts as to their effectiveness to solve specific problems.

Animation History	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
Early approaches to motion in art shadow play The Magic Lantern Animation before film Earliest animation on film Traditional animation Animation techniques Firsts in animation	The students will demonstrate knowledge of the different periods of animation history. The students will view many aspects of animations and the transition from hand drawn to computer animations. Vocabulary: cells, in-betweens, backdrops, technicolor, Computer-generated imagery (CGI), stop motion, cinematograph, zoopraxiscope, praxinoscope, flip book, zoetrope, phénakisticope, thaumatrope, prelude Standards: 9.2.12.A ~ Explain the historical, cultural, and social context of an individual work in the arts. 9.2.12.B ~ Relate works in the arts chronologically to historical events (e.g., 10,000 B.C. to present). 9.2.12.C ~ Relate works in the arts to varying styles and genre and to the periods in which they were created (e.g., Bronze Age, Ming Dynasty, Renaissance, Classical, Modern, Post-Modern, Contemporary, Futuristic, others). 9.2.12.D ~ Analyze a work of art from its historical and cultural perspective. 9.2.12.E ~ Analyze how historical events and culture impact forms, techniques, and purposes of works in the arts (e.g., Gilbert and Sullivan operettas). 9.2.12.F ~ Know and apply appropriate vocabulary used between social studies and the arts and humanities. 9.2.12.G ~ Relate works in the arts to geographic regions: Africa, Asia, Australia, Central America, Europe, North America, and South America. 9.2.12.H ~ Identify, describe, and analyze the work of Pennsylvania Artists in dance, music, theatre, and visual arts. 9.2.12.I ~ Identify, explain, and analyze philosophical beliefs as they relate to works in the arts (e.g., classical architecture, rock music, Native American dance, contemporary American musical theatre). 9.2.12.J ~ Identify, explain, and analyze historical and cultural differences as they relate to works in the arts (e.g., plays by Shakespeare, works by Michelangelo, ethnic dance and music). 9.2.12.K ~ Identify, explain, and analyze traditions as they relate to works in the arts (e.g., storytelling – plays, oral histories- poetry, work songs- blue grass). 9.2.12.L ~ Identify, explain, and analyze common themes, forms, and techniques from works in the arts (e.g., Copland and Graham's Appalachian Spring and Millet's The Gleaners).