Michael Rigal
Competency 002

EDTC 6343
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Competency 002

The master technology teacher knows and applies basic strategies and techniques for using graphics and animation

B.

Demonstrates knowledge of basic concepts related to computer animations (e.g., storyboarding, timeline, color depth, layers, animation GIFs, frames, keyframes, tweening, object behaviors).

Animation

Animation: the illusion of change when still images (frames) are changed in a sequence

Frame: one still image from a sequence of changing images

Frame rate: the amount (frequency) of frames within an animation

   -Rate is commonly measured in frames per second (fps)

   -Digital animation will function smoothly between 12 to 15 fps. Anything slower the human eye will see each frame.

Key frame: noting a key change in position, color, size, or shape

Tween: short for "in-between", and is the process of adding sequential frames of animation between key frames

Storyboard: A sketch of sequences. It's recommended to have one before producing animation

Timeline: used to order the sequence of animation within a program

Layer: A "layer" refers to differing levels on which you can place your drawings and objects. Layers can be stacked above and below each other. Top layers will obscure bottom layers, just as when stacking things in real life.

Onion skinning: Overlapping layers at the same time to see several frames at once

   http://grant.robinson.name/projects/onionskin/app/

Color depth: the number of bits per pixel used to represent color of a single pixel in an image (displayed on a computer screen.)

Types of animated files include:

- .gif
- .swf (Flash)

C.

Knows techniques for editing, manipulating and changing sounds that have been captured from a variety of sources (e.g., audio CD, tape, microphone).

Audio File Formats

http://www.fileinfo.com/filetypes/audio

Audio file format: is a file format for storing digital audio data on a computer system.

Common audio file extensions include: **.WAV, .AIF, .MP3, and .MID**.

File Type	Name	Description
.WAV	WAVE Audio File	Stereo format which is the standard format used for CD audio
.AIF	Audio Interchange File	Stereo format which is the standard format used for CD audio
.MP3	Moving Picture Experts Group	Commonly used to store music files and audiobooks on a hard drive; may provide near-CD quality sound. Roughly 1/10 the size of a .WAV or .AIF file
.MID	Musical Instrument Digital Interface (MIDI)	Musical Instrument Digital Interface (.midi) is commonly used for computer keyboards and other computer-based musical tools.

Uncompressed audio is audio without any compression applied to it. This includes audio recorded in WAV form.

Lossless audio compression is where audio is compressed without losing any information or degrading the quality at all.

Lossy audio compression attempts to apply to discard as much 'irrelevant' data as possible from the original audio, thereby producing a file much smaller than the original that sounds almost identical. This results in a much smaller filesize then lossless or uncompressed audio.

Basic Audio-editing: http://www.jiscdigitalmedia.ac.uk/guide/basic-audio-editing

Sound editing can be done by transferring (imputing) audio files from a source to a sound editing software
You can:
- Copy and paste parts of a track to rearrange the composition.
- Delete unwanted tracks or parts of a track.
- Mix tracks together by adjusting volume levels of tracks individually.
- Adjust tempo - Higher tempo speeds up track, lower tempo slows down track

- Use fade handles to fade audio in at the beginning or out at the end of an audio component
- Use Normalize to even the audio track volume;
- Use Amplify to increase the overall audio track volume;
- Use Mute to mute some unwanted part of your audio track

Sound Effects: Can be used to alter sound
Such as:
- Pitch change: to give the track a higher or lower pitch.
- Noise reduction or removal: this reduces or removes hissing and other unwanted background noise.

D.

Uses appropriate digital editing tools and design principles to import and edit images from a variety of sources (e.g., encyclopedias, database, image libraries).

Elements of Design

Element: particular entity used for designing

Point: a single position (X and Y coordinate)

Line: Two dimensional length starting from one point and finishing at another point

Shape/Form: a visually perceived area created either by an enclosed outline or color.

Volume: the appearance of height, width, and depth of form

Space: the concept of three dimensional or two dimensional areas

Pattern: repetition of elements

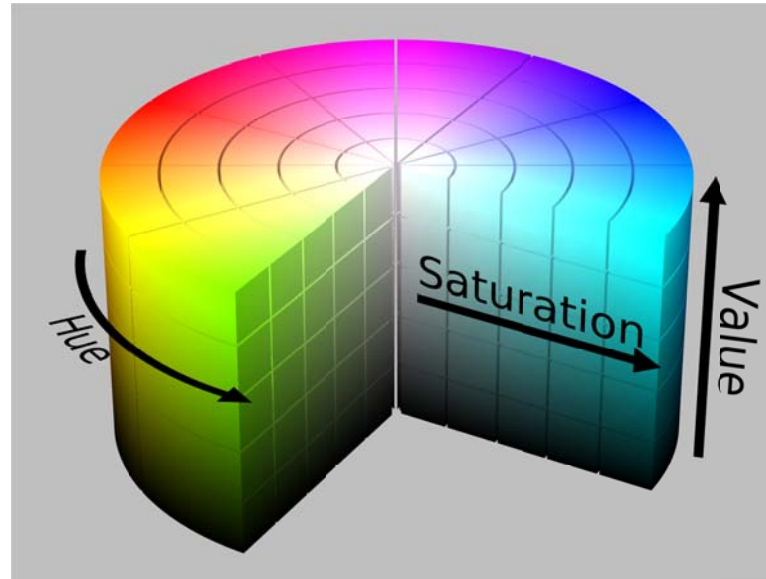**Texture:** giving a surface an appeal for touch

Value: the lightness or darkness of an object regardless of color

Color: defining a particular hue, saturation and value. Color can help convey mood.

> **Hue:** a particular color type e.g. Red blue, green
>
> **Saturation:** intensity (pureness) of a color
>
> **Value:** the lightness or darkness of color

Hue   Saturation   Value

	Digital Light	Printing	Painting
Primary Colors	RGB RED | GREEN | BLUE	CMYK CYAN | MAGENTA | YELLOW | BLACK	RBY RED | BLUE | YELLOW
Secondary Colors	CMY CYAN | MAGENTA | YELLOW	RGB RED | GREEN | BLUE	OGP ORANGE | GREEN | PURPLE

Color Depth: the number of bits used to represent color of a single pixel in an image

Complementary: color direct opposite to each other in color wheel

Analogous: colors next to each other in the color wheel

Principles of Design

Principles: designing guidelines using elements

Balance: is the equal distribution of visual weight

    (Two basic approaches)

    Symmetrical: even distribution for left and right of the center

    Asymmetrical: unequal distribution of objects

Harmony: elements are balanced and complement each other

Unity: elements are related and work together

Rhythm: a movement in which some elements recurs regularly

Movement: path determined by the element(s) direction or of change in position

Emphasis/Focal Point: creating attention to a certain area. (Create a point of attention)

Variety: variation of elements to create visual interest. Use of different styles to create designs

Scale/Proportion: Proportion: is the relationship of size, quantity, or ratio of a picture of text compared to other elements. If something is given a bigger size or color - it will give important than the rest of the picture

E.

Knows how to define the design attributes and requirements of products created for a variety of purposes (e.g., posters, stationery, brochures, slide shows, Web pages, multimedia presentations).

Basics for desktop publishing

http://desktoppub.about.com/od/desktoppublishing/u/Basics_and_Beyond.htm

Basics for webpage design

http://webdesign.about.com/od/webdesignbasics/u/webdesignbasics.htm

Guidelines for multimedia presentations

http://www.sun-associates.com/wbsd/handouts/multimedia/whatmake.pdf