

Content Test Review for Texas Teachers

Everything in this review is what I gathered from the Texas Teachers study guide.

Domain 1

- ISTE Standards

- Learner

- Set goals that can be learn by technology
 - Continue to learn about tech through local and global groups within your field
 - Educate yourself with the newest tech in your field.

- Leader

- Improve your AP and Principals about your vision for your class/programs
 - Advocate for the newest tech you need for the class
 - Be a role model for co-workers with learning new tech

- Citizen

- Make chances for your students to learn how to people themselves on the internet
 - Create a culture that embraces learning with tech
 - Be a mentor for students with how to use tech ethically
 - Show best practice for data privacy with tech

- Collaborator

- Make time to create learning opportunities for your co-workers with tech
 - Learn with your students about new tech

- Use tools that are online to create a real-world example about the tech you are using/teaching about
- Show how tech can be used to learn within the classroom
- Designer
 - Use tech for learning within the classroom and with activities
 - Create activities with tech
 - Create learning environments with the tech
- Facilitator
 - Create a culture that wants to learn
 - Manage the use of the tech within the classroom
 - Create a process of using the tech to help further learning
 - Create a culture that students can express themselves
- Analyst
 - Create ways to learn using tech
 - Use tech for assessments
 - Use the tech to gather data for assessments and be able to tell your bosses

- Introduction to SAMR Model

- Focus on the intersection of Technology and Pedagogy
 - created by Dr. Ruben R. Puentedura
 - 4 different layers, first 2 are enhancing while the other two are focusing on transforming
 - Substitution
 - instead of writing a essay with pen and pencil, they are using a laptop or tablet for the essay

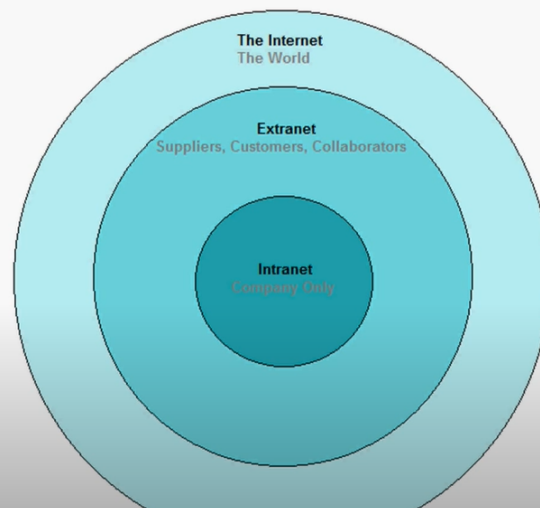
- Augmentation
 - Instead of writing an essay on a tablet or laptop, it is on google docs and enable people to make comments on what they are writing
- Modification
 - instead of a google docs, it is now a blog post that allows the student to research, let people make comment and share it with an audience
- Redefinition
 - With the blog post, other people within they community is working with the student about the blog post, attending conferences...etc.

- Internet 101

- URL
 - Uniform Resource Locator
 - reference to a web resource that specifies its location on a computer network and a mechanism for retrieving it.
- Internet
 - a global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardized communication protocols.
- WAN
 - Wide Area Network
 - router connect to the internet
- LAN
 - Local Area Network
 - connecting to your router
- Intranet

- a local or restricted communications network, especially a private network created using World Wide Web software.
- only accessible to certain people within the organization
- not owned by anyone
- Extranet
 - an intranet that can be partially accessed by authorized outside users
 - example
 - a company that is providing access to outside suppliers and contractors
 - a hospital that is providing a booking system to doctors so they can make appointments for their patients
 - a local office of education that is providing budget and personnel information to the schools in its district

Difference between internet, Intranet, and Extranet.



- ARPANET
 - JCR Licklider had the idea of the internet and Bob Taylor implemented the idea
 - IMP was created to carry data from one computer to another
 - was created by the US

- advanced research project agency
- host-to-host connection
- use Packet Switching (created by Paul Byron and Donald Davis)
 - if a system goes off online, then the data will still move across other computers
- NSFNET
 - program of coordinated, evolving projects sponsored by the National Science Foundation from 1985 to 1995 to promote advanced research and education networking in the United States
- Packets
 - Text, audio and video sent across the internet
- Email
 - invented by Ray Tomlinson
 - development a way to send mail over APRANET
- PBL Explained
 - PBL
 - Project based learning
 - Learning how to figure out real-life problems within a classroom setting
 - critical thinking, collaborating and communication
- Essential Elements of PBL
 - KEY KNOWLEDGE, UNDERSTANDING, AND SUCCESS SKILLS
 - The project is focused on teaching students key knowledge and understanding derived from standards, and success skills including critical thinking/problem solving, collaboration, and self-management.
 - CHALLENGING PROBLEM OR QUESTION

- The project is based on a meaningful problem to solve or a question to answer, at the appropriate level of challenge for students, which is operationalized by an open-ended, engaging driving question.
- SUSTAINED INQUIRY
 - The project involves an active, in-depth process over time, in which students generate questions, find and use resources, ask further questions, and develop their own answers.
- AUTHENTICITY
 - The project has a real-world context, uses real-world processes, tools, and quality standards, makes a real impact, and/or is connected to students' own concerns, interests, and identities.
- STUDENT VOICE & CHOICE
 - The project allows students to make some choices about the products they create, how they work, and how they use their time, guided by the teacher and depending on their age and PBL experience.
- REFLECTION
 - The project provides opportunities for students to reflect on what and how they are learning, and on the project's design and implementation.
- CRITIQUE & REVISION
 - The project includes processes for students to give and receive feedback on their work, in order to revise their ideas and products or conduct further inquiry
- PUBLIC PRODUCT
 - The project requires students to demonstrate what they learn by creating a product that is presented or offered to people beyond the classroom.
- Differentiating Instruction with Technology & Technology and Differentiated Instruction
 - This mostly talks about how you can meet the students need with tech. Like how can I use the tech to teach the class. DI means different instruction. Which means, using different teaching methods to reach all of the students. You can use different assessments with tech to see what concepts did the student understand and what they didnt. Evidence back this claim by talking about how much the school has improve by adding tech to their teaching routine.

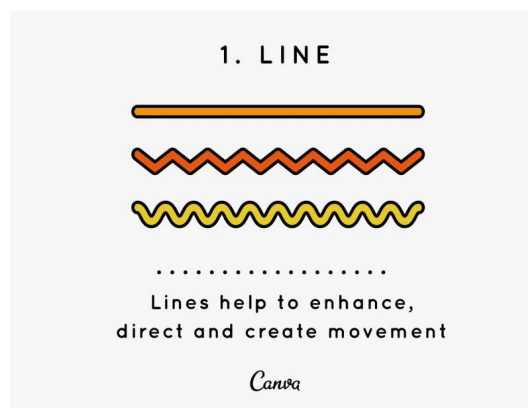
- Helpful videos for Domain 1

- <https://youtu.be/chDw8M4WI8o> (ISTE Standards for Teachers)
- <https://youtu.be/SC5ARwUkVQg> (What is the SAMR Model and what does it look like in schools?)
- <https://youtu.be/O31TcSo3Unk> (Internet 101 | National Geographic)
- https://youtu.be/tRtcrT_DVZk (Internet, Intranet and Extranet)
- <https://youtu.be/L4bJIGuQX40> (The Arpanet | the first internet)
- <https://youtu.be/h8K49dD52WA> (History of the internet)
- <https://youtu.be/LMCZvGesRz8> (Project Based Learning: Explained)

Domain 2

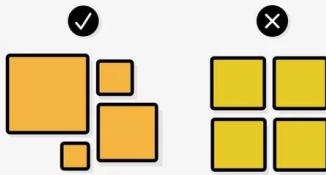
- Design Elements and Principles

- Line



- Scale

2. SCALE

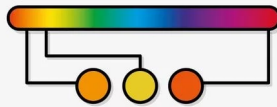


.....
Scale creates emphasis,
drama and aids hierarchy

Canva

- Colour

3. COLOUR

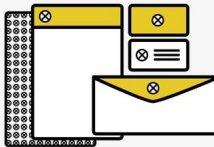


.....
A strong colour palette
makes for a strong design

Canva

- Repetition

4. REPETITION

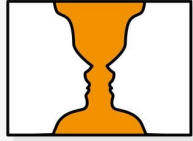


.....
Repetition helps to tie
individual elements together

Canva

- Negative Space

5. NEGATIVE SPACE

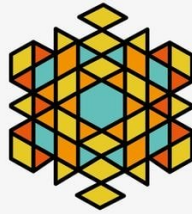


.....
Negative space is the
'space in between'

Canva

- Symmetry

6. SYMMETRY



.....
Symmetry is attractive,
and creates a sense of harmony

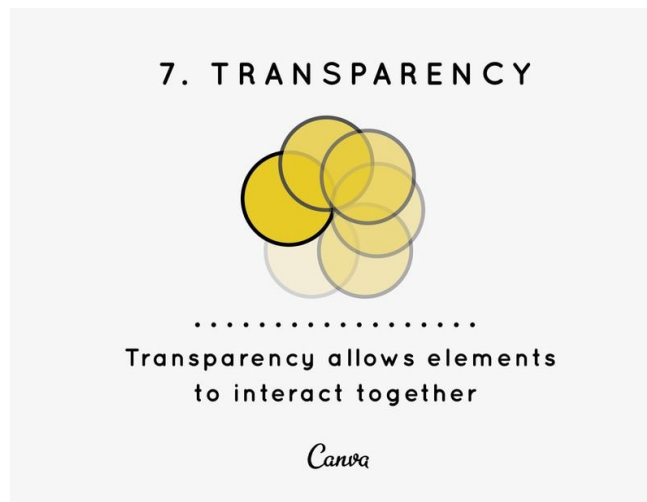
Canva

- examples



■

- Transparency



- Texture



- Balance

9. BALANCE

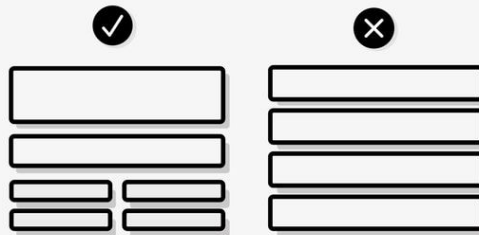


Balance ensures no one element overpowers the others

Canva

- Hierarchy

10. HIERARCHY



Hierarchy helps signal the importance of each element

Canva

- Contrast

11. CONTRAST



.....
Contrast creates emphasis via
light vs. dark, thick vs. thin etc.

Canva

- Framing

12. FRAMING

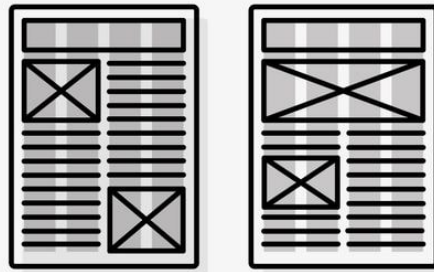


.....
Framing helps to highlight,
crop or decorate elements

Canva

- Grid

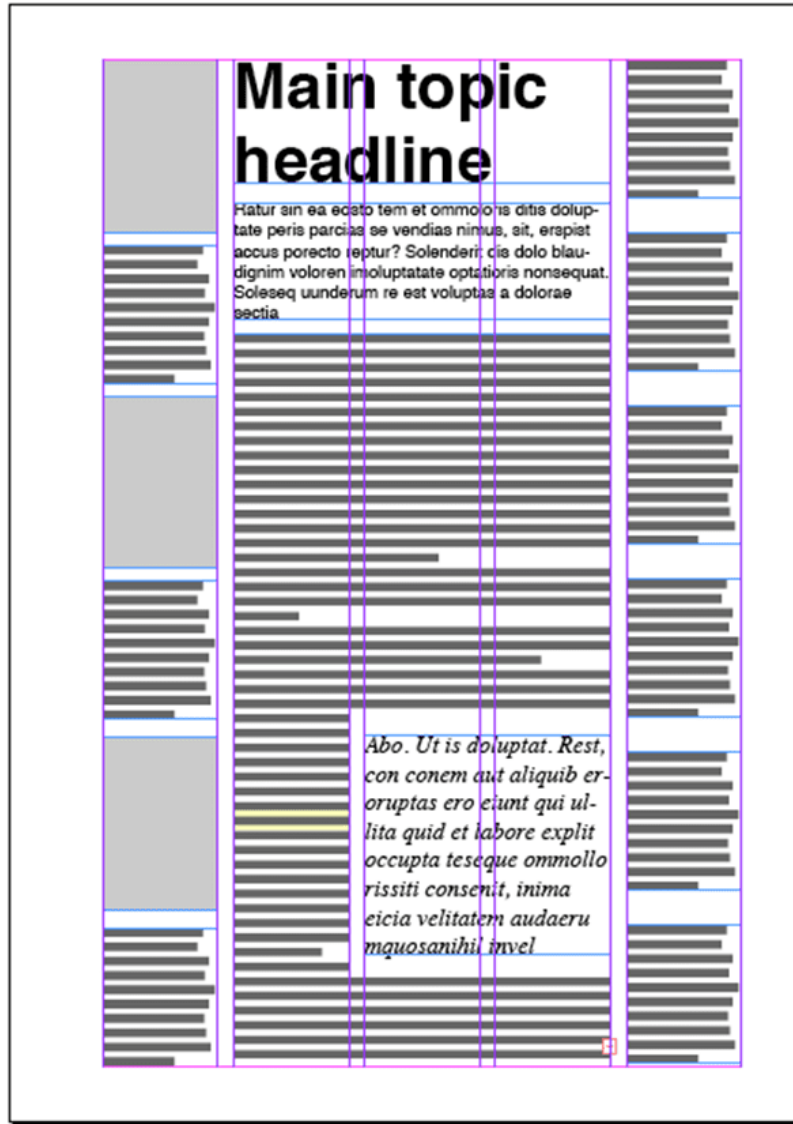
13. GRID



.....
Grids help to align
and arrange elements

Canva

-
- example



- Randomness

14. RANDOMNESS

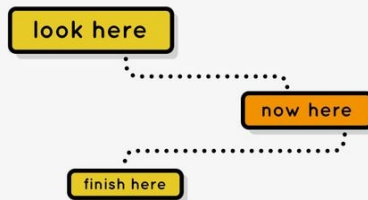


.....
Create stylistic disorder
that has purpose and intent

Canva

- Direction

15. DIRECTION



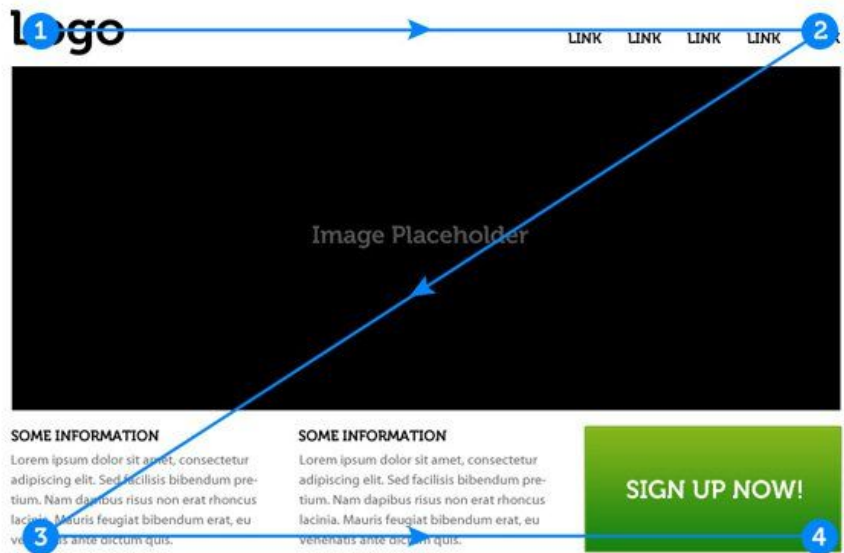
.....
Direction gives your
viewers' eyes a path to follow

Canva

- example



www.useit.com



- Rules

16. RULES

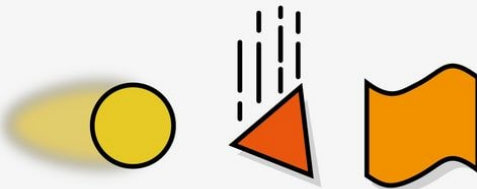


.....
Learn the design rules and
break them the right way

Canva

- - Understand what the rules about design are to bend them in your own style
- Movement

17. MOVEMENT

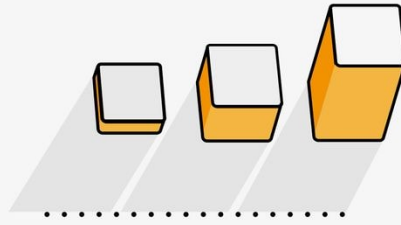


.....
Create movement via blurring,
motion lines or wave effects

Canva

- - Depth

18. DEPTH



Create depth and dimension via texture, shadow, 3D effects etc.

Canva

- Typography

19. TYPOGRAPHY

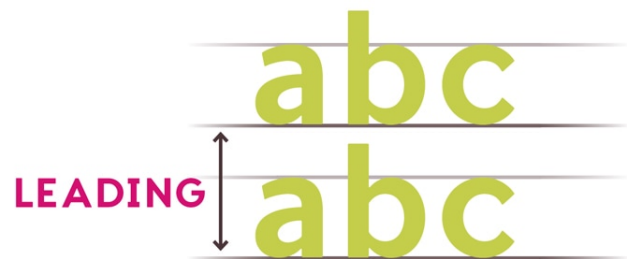


Match your typography choices to your design's tone/concept

Canva

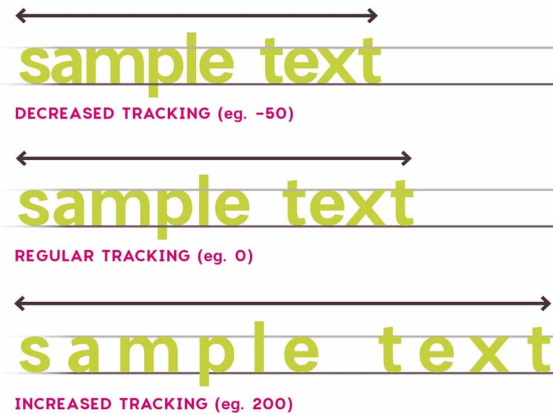
- Serif Font Vs Sans Serif Font
 - Serif Font
 - easier to read in printed works
 - have trailing edges at the end of their letters and symbols
 - Times new romans is serif font
 - Sans Serif Font
 - easier to read digital

- dont have small trailing edges at the end of their letters and symbols
- better for children learning to read since the letters are easy to recognise
- Display fonts
 - typeface that is intended for use at large sizes for headings, rather than for extended passages of body text.
 - Script, BlackLetter, All-caps are examples of display fonts
 - best use for small amount of text like titles and headers and more graphic heavy design
- Kerning
 - amount of space between two letters (or other characters: Numbers, punctuation, etc.) and the process of adjusting that space to avoid awkward-looking gaps between your letters and improve legibility
 - better explain as which is used to adjust spacing between individual letters
 - better used for reading
- Leading/Line Spacing
 - space between lines of text
 - example



- - use to help reading better (increase line spacing) and fit more word on paper (decrease line spacing)
- Tracking/Character Spacing

- overall space between characters
 - example



-
- Can make your text seem bigger without increasing font size
- Hierarchy
 - system for organizing type that establishes an order of importance within the data, allowing the reader to easily find what they are looking for and navigate the content
 - using header, body, text
 - example

The Temptations & The Four Tops <i>Wednesday, June 26, 2013</i> 8:00 pm When The Temptations took the stage over 40 years ago their stunning harmonies and tight choreography combined with excellent leads created a legend. The Temptations made musical history with their string of fabulous pop and funk hits in the sixties and seventies, and they managed to weather a steady stream of changes in personnel and consumer tastes to be able to continue the history.	Steve Martin and the Steep Canyon Rangers <i>Sunday, July 28, 2013</i> 7:30 pm Steve Martin and the Steep Canyon Rangers, featuring Edie Brickell will perform songs from their album <i>Love Has Come for You</i> as well as songs from <i>Rare Bird Alert</i> and other new tunes. The new collaboration, <i>Love Has Come for You</i>, is set for release on April 23 on Rounder Records.	The Avett Brothers <i>Friday, August 16, 2013,</i> 8:00 PM The Avett Brothers will perform their smash hit <i>I and Love and You</i> along with the rest of their latest album. In the wake of the album's release, the Avett Brothers made the rounds on late-night TV, including appearances on the Late Show with David Letterman, The Late Late Show with Craig Ferguson, and Late Night with Jimmy Fallon.
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- Pixar in a Box

- Pre-Production

- Story and Art

- Storyboard

- graphic layout that sequences illustrations and images with the purpose of visually telling a story

- Shot

- titled with scene and shot number including what type of shot is it (close-up, POV, wide shot, full shot..etc)

- panel

- shot aspect ratio (16:9, 4:3, 1.85:1)

- List of different aspect ratio

- 4:3 or 1.33:1 is Widescreen HDTV

- 16:9 is standard size for HDTV and Computer Monitors/ Telephones

- 1.85:1 is for US cinema

- 2.39:1 is the Widescreen Video

- 2.76:1 (70mm) is for IMAX screens

- 1.37:1 (Academy ratio) use throughout the silent film era

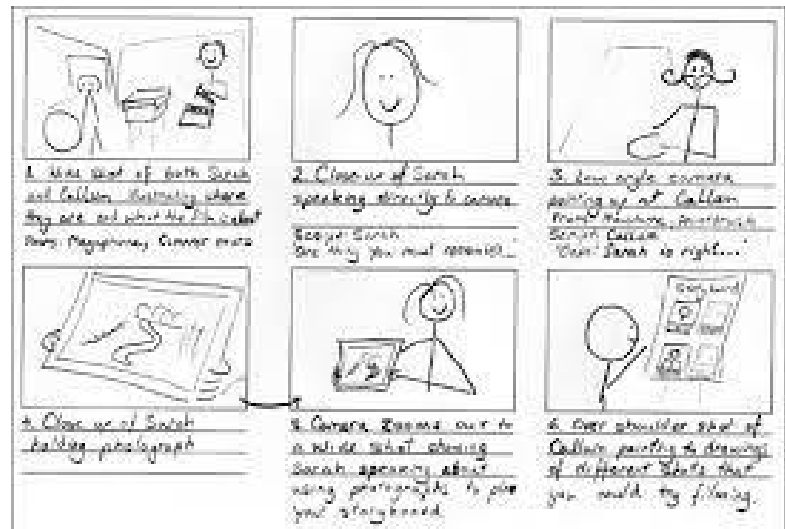
- 2.59:1 to 2.65:1 (Cinerama) is for TV's in the early 1950's

- 2.35:1 to 2.66:1 (cinemascope) is for cinema back in 1953

- sequence

- a scene in the film (the drawing)

- description
 - add detail to the scheme and instructions for how the camera operator should capture shots
- arrows
 - directioning the camera movement (pan, in, out, etc)
- Example of storyboard



- - Art Style
 - Production
 - Editorial
 - Time it out
 - Add music
 - Dialogue
 - Sound effects
 - Pipeline
 - Tech challenges
 - Rigging
 - Getting the character to move

- Animation
 - Bring them to life
 - Simulation
 - Animation with hair
 - Lighting
 - Rendering
 - Surfaces
- Post-Production
 - Wrap it up
- Type of Camera Shots
 - Zoom
 - impression of moving closer or further away from the subject
 - Pan
 - camera is moved horizontally from one side to another on a central axis
 - Tilt
 - camera is kept in a stationary position and focuses on upwards & downwards movements
 - Dolly
 - entire camera is mounted on a track and is moved towards or away from a subject
 - Truck
 - moving the entire camera along a fixed point, but motion goes from side to side, rather than in and out
 - Pedestal

- moving the camera upwards or downwards in relation to a subject
- Full shot
 - entire body shot of subject head to toe
- Medium shot
 - showing subject from the knees up
- Close shot
 - showing subject head/face as they take up majority of the frame that allows reactions and emotions to dictate the scene
- Extreme close shot
 - showing only one specific detail such as the subject eyes, mouth can be seen
- Up shot
 - shot is taken below the eye-level of the subject
- Downshot
 - taken from above the eye level of the subject
- Over the shoulder shot
 - shot is taken behind the shoulder of another subject. Good for conversations
- Two shot
 - two subjects together within the same frame
- POV shot
 - an angle that shows what a character is looking at
- Choker
 - subject face is shown from the eyebrows to below the mouth

● 12 Basic Principles of Animation

- Slow in/Slow out

- Timing of an object or figure at the beginning or end of a sequence
 - EX. Starting the animation slow-regular speed- then slow again.
- Anticipation
 - Preparing the audience for the coming action
 - ex. a leaping dancer travel downward before she leaps upward, and a golfer swing the club backward before swinging it forward.
- Squash and stretch
 - Not to change the object's volume as you change its shape
 - Ex. Ball bouncing on the ground
- Arcs
 - Objects tend to move along an arc
 - Throwing a ball
- Straight ahead
 - Drawing out frames, one by one
- Pose to Pose
 - Drawing the "key" pose first then filling in the frames between
 - Tweening
 - In between frames
 - Key frames
 - drawing or shot that defines the starting and ending points of any smooth transition
- Staging
 - act of directing the audience's attention to the important actions and events in your animation
- Exaggeration

- Make it look more realistic by thinking it through
- Follow Through/Overlapping Action (Drag)
 - Follow through
 - Refers to the way an object and its parts continue to move at the end of an action
 - Overlapping action
 - one action doesn't have to stop before the next action
- Secondary Action
 - enhancing the main action
 - ex. Walking down the street with arms waving front to back
- Timing
 - the speed with which your objects move.
- Solid Drawing
 - Correctly conveying weight, form and movement in drawings. Making sure they feel like they are in 3-D space
- Appeal
 - should be pleasing to look at. Should have some charismatic aspect to like about them.
- Foundations of Typography
 - Baseline
 - Line the letter “sit” on
 - X Height
 - height of the lowercase letter
 - Extenders
 - Ascenders line and descenders line

- Ascender
 - extend higher than x height
- Descenders
 - extend lower than the baseline
- example



- Body width
 - How wide the letter is
- Mean line
 - height of most of the lowercase characters within a typeface
- Cap height
 - height of a capital letter
- Bowls/Counters
 - All rounded letters (like B and D)
- Open counter
 - a semi close letter like m or n
- Stem
 - Vertical Stroke (ex. K, L)
- Arm
 - strokes that extend from the stem
- Cross stroke

- crosses over a stem (like a t or f or H)
- Leg
 - portion of a letter that extends downwards (like a K or R)
- ear
 - small stroke that extends outwards (lowercase g)
- shoulder
 - stroke that curves downwards and to the right of the lowercase h, m and n
- tail
 - decorative curved descender of a capital Q, R, and K
- Spine
 - main curved stroke inside the upper and lower case S
- Bar
 - horizontal stroke in letters like A, H, e, and F
- terminal
 - letter don't have a serif
- Counter
 - enclosed space in letters like O, B, D
- Spur
 - small projection that veers off the main stroke on many capital G
- Link
 - a stroke connecting the bowl and loop of a two story, lowercase g
- Loop
 - is an enclosed counter connected to a letter, most specifically the double-story g

- Animation Basics

- Timing and spacing
 - Timing
 - Speed divided by tempo
 - Spacing
 - More frames=slower animation
 - Less frames = faster animation

- Bitmap

- use for photo editing over vector maps
- Bitmap graphics (raster graphics)
 - a type of digital image that uses tiny rectangular pixels, or picture elements, arranged in a grid formation to represent an image
 - Raster(Bitmap) Vs Vector
 - Raster images paints each pixel
 - Vector images are mathematical calculations from one point to another that form lines and shapes

- Cel

- clear piece of plastic on which the animator's finished drawings are painted
- Cel-shading (toon shading)
 - cel-shading is a non-photo-realistic rendering which is used to make 3D computer graphics appear flat
 - This involves using less shading color instead of the shade gradient, or tints and shades, used in most design techniques for video games

- What is Hue

- the actual color

- What is Saturation

- How much color

- What is Lightness

- brightness of color

- Pixilation

- stop-motion technique in which life-size props or live-actors are photographed frame-by-frame
- Old time animation technique that was popular during the silent area.
- Can create this at home by using a stop motion camera app and taking pictures 12 frames per second

- Zoetrope

- early animation device that spins drawings in a revolving drum to create the illusion of motion
- Multiple models on the single plan spinning in a circle

- Bleed

- design elements will extend to the very edge of the card with no white border. The card will need to be printed on a larger size and then trimmed down

- Script Typeface

- based upon handwriting and offer very fluid letterforms. Two basic classifications: formal and cursive.

- Microsoft favorite coding language

- C#

- Turnarounds in Animation

- Important step in character design to know what your character look like from every angle
- 8 point turnarounds
 - great for asymmetrical
- 6 point turnarounds
 - great for symmetrical characters

- Geometric

- sans-serif typefaces building on geometric shapes like near-perfect circles and squares
- mostly tech brands use geometric fonts to represent minimalism, simplicity and cleanliness

- Rubrics

- Holistic

- consists of a single scale with all criteria to be included in the evaluation being considered together
- based on an overall judgment of the student work

Scale	Criteria
4	• At least 4 accurate facts are displayed in the infographic • Selection, color, shape, size, and arrangement of graphics contribute meaning to the overall message • All 4 facts have sources identified on the infographic
3	• At least 3 accurate facts are displayed in the infographic • Selection, color, shape, size, and arrangement are eye catching and contribute meaning to the overall message • 3 facts have sources identified on the infographic
2	• At least 2 accurate facts are displayed in the infographic • Selection, color, shape, size, and arrangement of graphics are present but do not contribute to the meaning • 2 facts have sources identified on the infographic
1	• At least 1 accurate fact is displayed in the infographic • Selection, color, shape, size, and arrangement of graphics are detracting or misleading • 1 fact or 0 facts have a source identified on the infographic

○ Analytic

- resembles a grid with the criteria for a student product listed in the leftmost column and with levels of performance listed across the top row often using numbers and/or descriptive tags.

Analytic Rubric

Category	(Exemplary) 4	(Good) 3	(Marginal) 2	(Unacceptable) 1
Quality of information	Information clearly relates to the main topic and adds new concepts, information. It includes several supporting details and/or examples. Consistently establishes source documentation for ideas.	Information clearly relates to the main topic. It provides at least 1 supporting detail or example. Occasionally provides documentation.	Information clearly relates to the main topic. No details and/or examples are given. Provides documentation when requested.	Information has little or nothing to do with the main topic or simply restates the main concept. It does not advance the discussion. Does not provide documentation for sources.
Critical Thinking	Enhances the critical thinking process consistently through reflection and questioning of self and others; is a quality response that advances thoughts forward; adds to the discussion/ is a critical response.	Some critical thinking and reflection is demonstrated in discussion by the writer/ponderer.	Responds to questions but does not engage in premise reflection.	Does not respond to questions posed by the facilitator.
Collaboration	Encourages and facilitates interaction among members of the online community. Reflects and discusses own practices. Encourages colleagues to evaluate their teaching.	Responds to other members of the online community. Reflects on own practices.	Limited interactions or responses to other members of the online community.	Responds to the discussion facilitator only. No interaction with peers.
Professional Language	Professional vocabulary and writing style are used consistently throughout the discussion.	Professional vocabulary and writing style are used frequently throughout the discussion.	Professional vocabulary and writing style are used occasionally throughout the discussion.	Professional vocabulary and writing style are not used.
Timeliness	One thread and two responses posted within time frame.	One thread and one response on time. One response late.	Thread or two responses late.	Thread and responses late.

○ Single-Point

- identify one achievement level for a set of criteria

Assignment: _____ Class: _____
 Name: _____

Rubric

Improvement Needed	Expectations	Advanced Skills	Grade
	Format: You followed the format for this assignment correctly. You used paragraphs correctly.		
	Content: You provided clear and relevant examples or supporting details. Facts were supported. You summarized information well.		
	Organization: You organized your essay clearly, in a way appropriate to the assignment. You wrote all in sentences, with correct punctuation. Paragraphs were used correctly. Signal words were used to organize information.		
	Grammar: You used a variety of sentence structures. Verb tenses were used correctly, including passive and conditional tenses. You used a wide range of connecting words and intensifiers. Your meaning is clear.		
	Vocabulary: You used appropriate vocabulary for the topic. You used adjectives and adverbs for accurate descriptions. You spelled most words correctly. Your meaning is clear.		
Final Grade:			

Overall Comments: _____

- **Fractal Art**

- form of algorithmic art created by calculating fractal objects and representing the calculation results as still images, animations, and media

- **Additive colors vs Subtractive colors**

- additive colors
 - Color vision in humans
 - RGB
- Subtractive colors
 - created by completely or partially absorbing (or subtracting) some light wavelengths and reflecting others.
 - CMYK

- **Color scheme**

- Complementary
 - 2 colors that are opposite of each other on the color wheel

- Triadic
 - 3 colors that are equally spaced around the color wheel
 - three colors that are placed equidistant from each other on the color wheel, forming a triangle as seen below. Triadic color schemes can include three primary, secondary, or tertiary colors. Common triadic palettes consist of blue, red, and yellow or violet, green, and orange.
- Analogous
 - 3 colors that are side-by-side on the color wheel
 - group of three colors that border each other within the color wheel.
 - Analogous = close related
- Monochromatic Color Scheme
 - single color, often using variations of that hue by incorporating tints, tones, and shades.
 - Regular color wheel with white tint
- Complementary Color Scheme
 - opposite sides of the color wheel; one color is usually a primary color and the other a secondary color.
- Principle of emphasis
 - catches the viewer's attention by making one stand out or be dominant in contrast to other areas
- Principle of Balance
 - looks at the visual weight of objects, colors, textures and space
- Principle of Variety
 - uses several elements of design to hold the viewer's attention
- Principle of Unity
 - creates a feeling of harmony between all parts of the work of art
- Style sheets
 - a type of template file consisting of font and layout settings to give a standardized look to certain documents.

- Golden Ratio
 - 1:1.618
 - It is the ratio of a line segment cut into two pieces of different lengths such that the ratio of the whole segment to that of the longer segment is equal to the ratio of the longer segment to the shorter segment.
- Colors associated with foreground objects
 - Red and Yellow
- List of Old Style Serifs Font
 - Centaur
- List of Transitional Serifs Font
 - Times New Romans
- Scripts Fonts
 - Best used for handwriting and invitations and logos
- Collate
 - single-sided, numbered packets
- Recording level for audio
 - 0db is the max level you every want to go to
 - Audio level that you want to always use is between -10db to -20db
 - NEVER GO ABOVE 0db
- DAC (Digital-to-Analog Converter)
 - converts digital data and transforms it into an analog audio signal
- RTDNA Coded of Ethics
 - Truth and accuracy above all
 - independence and transparency
 - accountability for consequences
- Helpful videos for Domain 2
 - (<https://youtu.be/uDqjldl4bF4>) 12 Basic Principles of Animation
 - (<https://youtu.be/sByzHoiYFX0>) Beginning Graphic Design Typography

- (<https://youtu.be/NrBF-ebM4uE>) Typography: Anatomy of a Letter
- (<https://youtu.be/YOQ0aspln9c>) HOW TO MAKE BORDERLANDS style and characterx
- (https://youtu.be/40_creug7c) Zoetropes create 3D illusions using light
- (<https://youtu.be/4LFF3sujim8>) What is Fractal Art Is / Beautiful Math Art
- (<https://youtu.be/5Z417hM-RAA>) Additive and Subtractive Color with Ray Diagrams

Domain 3

- Video Production Basics

- Rule of thumb for writing scripts
 - One page = one min on screen
- Pre Production
 - Producer, Director, Line Producer and UPM
 - Plan out what to do during production during pre-production
 - Crew Preparation
 - gather who is going to help you create the film (production side)
 - Cast Selection
 - Who is going to act in the movie
 - Concept
 - What is the movie?
 - Research
 - Look over the concept about the movie, make sure it is accurate
 - What size do you want in the movie?
 - 4:3 (SD) or 16:9 (720,1280 or 1080,1920) (HD)
 - Scripting
 - All of the dialogue is created and finished for the movie
 - Storyboarding

- Make a scene-by-scene visual of what the movie is going to look like
 - Not helpful for casting
 - Production
 - Shot the movie
 - Post Production
 - Edits
 - First edit
 - Send for a review
 - Second edit
 - Make changes based on feedback
 - Picture lock
 - Sound mix & color correction
 - RTM
- Roles within Film
 - Above the line & Below the line
 - Above the line
 - individuals who guide and influence the creative direction, process, and voice of a given narrative in a film and related expenditures. These roles include but are not limited to the screenwriter, producer, director, and actors.
 - Below the line
 - any production costs that are not "above the line." This can include film crew salary, publicity, music rights, and cutting together a trailer.
 - Producer
 - selecting the script, picking the director and cast, raising the money
 - cheer on the film from beginning to end
 - Hires the director

- Is the boss
- Executive Producer
 - TV: Show creator
 - Film : Over shaping of the story and script
 - secure funding and organize marketing strategies to ensure that the project will be popular, because the executive producer is ultimately held responsible for the success or failure of the project
- Assistant Producer
 - Given by the producer as a person that deserves a key role within the film or TV
- Screenwriter
 - Create the script
 - Story Credit
 - How the story was created
 - Screenplay Credit
 - How the story is being shot
 - Written By
 - the writer wrote both story and screenplay
- Director
 - responsible for all artistic and dramatic aspects
 - can bring writers to write the script
 - can only have 1 director at a time
 - can create a second unit (For production like 2nd team 1st AD, 2nd team 2nd AD..etc)
- Line Producer

- responsible for every line of budget
- responsible for hiring crew members
- UPM (Unit Production Manager & Production Manager)
 - oversees day to day operations
 - Time card
 - production sheets
 - approving call sheets
 - can hire a POC (Production Office Coordinator)
- Production Office Coordinator (POC)
 - coordinates production staff
 - can have an APOC (Assistant of Production Office Coordinator)
 - Will have Office PA (Office Production Assistants)
 - answer phones
 - make copies
 - do runs
 - anything needed to keep the production office busy.
- Transportation Office Supervisor
 - in charge of moving the team and equipment from one location to another
- Storyboard Artist (If animated, they are called Anamatics/Previz)
 - Make story boards during pre-production to know what the movie is
- Casting Director
 - finding talent to fill acting roles
 - will hold auditions
- Location manager/Location Scout

- find location and sound stages for the production producers
- make sure the film have all of the proper permits
- 1st Assistant Director (1ST AD)
 - in charge of running the set
 - Call the role
 - call out series of specific cues for each take to ensure that all cast and crew on set are aware of exactly what is going on
 - Ex. "Quiet on set", "Roll sound", "Roll Camera"
 - NOT ASSISTANT TO THE DIRECTOR
 - works on scheduling production/how to schedule a script
 - In production, 1st AD is in charge of day to day operations and running the floor
- 2nd Assistant Director (2nd AD)
 - help 1st AD and directs Background Actors
- Set PA (Set PProduction Assistant)
- Director of Photography (DP)
 - Craft the look of the film while working with the Director
 - may or may not operate the camera
 - Can assign more than 1 team of camera operators, 1st AC, 2nd AC
 - If he is not, there will be a title called Camera Operator for the person that is doing it
- 1st Assistant Camera (1st AC)
 - help Director of Production and Director of Photography
 - pulls focus
- 2nd Assistant Camera (2nd AC)

- film clappers, calls scene number and fill out the camera reports
- Film Loader
 - load raw negative film correctly
- Digital Imaging Technician (DIT)
 - all footage is downloaded from the camera's memory and safely backed up usually in triplicate
- Steam Camera
 - operates a steadicam
- Motion Control Tech
 - motion controlled dolly system
- On set photographer
 - behind the scenes
- Continuity Photographer
 - set or costume looks the same over a period of days
- On set videographer
 - documenting the behind the scenes
- Production Sound Mixer
 - recording all the location sound in the production
- Boom operators
 - in control of the microphone boom
- Utility Sound Technicians
 - run cables and make sure everything is operating correctly
- Gaffer/Lighting Designer
 - head of lighting department

- work with the director of photography
- Best Boy Electric
 - day to day management and hiring of the lighting crew
 - in charge of ordering, inventory and using the lighting equipment
- Lighting Technicians
 - set up and operate the lights
- GRIP department
 - non-electrical components of lighting set-ups
 - example
 - Stands, flags, rigging and camera moving equipment
 - Head of GRIP
 - Key grip
 - Best Boy Grip
 - day to day management of grip team
 - Dolly GRips
 - operating the camera dolly
- Art department
 - PProduction DEsigner
 - works with the director & director of photography to figure out the look of the production from sets to costumes to props
 - Art Director
 - oversees artists and craftspeople like set designers, graphic artists, illustrators who work on what the flim look like and its marketing
 - Construction

- Construction Coordinator
 - build and manage all the sets that are needed
- Head Carpenter
 - leads carpenters and laborers and custom props to be made for the film
 - in charge of breaking it down
- Sets
 - Set Decorator
 - Buyers
 - buy things for the set
 - Leadsman/Swing Gang
 - oversees a set dressing crew
 - place all of things you see in a set on the screen
 - Greensman
 - part of placing the plants in the film
- Properties
 - items that the actors interact with that are not part of the scene
 - Prop master
 - oversees props
 - weapons master
 - oversees guns, swords for set and for filming
- Costume
 - Costume Designer
 - oversees all costumes within the movie
 - Costume Supervisor

- day to day management of costume, overseeing the costumers, buyers and renters of costume
- Hair and Makeup
 - key makeup artist
 - key hair artist
 - both will work on the lead actors
 - oversees the assistant
- Special effects
 - Special Effects supervisor
 - Gang Boss (Construction Foreman)
 - pyrotechnicians
 - sculptors
 - model builders
 - miniature technicians
- Continuity Supervisor/ Script Supervisor
 - make sure that things that need to look the same everyday, looks the same everyday (costume , hair, makeup) over a long shoot
- Craft & Catering
 - Craft Services/Crafty
 - snacks available throughout shooting
 - Catering
 - scheduled sit down meals
 - ALWAYS FEED YOUR CAST AND CREW!
- Post Production
 - Post Production Supervisor

- Editor
- Assistant Editors
 - logging and organizing the footage with the help of camera reports by the 2nd AC
- Sound
 - Supervising Sound Designer
 - Dialogue Editor
 - cleaning up the house dialogue tracks
 - ADR editor
 - replacing dialogue that was recorded on set with dialogue recorded in a studio
 - Sound FX
 - recorded outside of the studio like gunshots, cars and vehicles, monsters, and surreal sounds.
 - Foley Artists
 - who create sound effects for the film like footsteps, hand to hand combat. This is mostly sounds that goes with the in sync with the film
 - Music Supervisors
 - works with composer, orchestra contractor, musicians, recording engineers
 - sound mixers
 - bring everything together
- Visual effects
 - can look like a production crew chain of command
 - Visual Effects producer

- working with the director and DP in deciding how it is going to be done
- Creative Director
 - controls creative decisions
- Visual effects supervisor
 - organizes and coordinates a team of digital artists, painters, animators, programmers, riggers, rotoscope artists and composers
- Colorist
 - working with the directors and maybe the DP
 - color correct the entire movie
- Rough Cut and Answer Print
 - Rough Cut is edited film before assembly
 - Answer Print is when the picture and sound are blended together on the same print stock
- Graphics File Formats
 - Dithering
 - process of reducing many colors to 256 or fewer
 - pixels of two colors are juxtaposed to create the illusion that a third color is present
 - Save images as JPEG or PNG formation to keep the color and size correct
 - GIF
 - GIF Graphics
 - only limited to 256 colors
 - lossless compression scheme to keep file sizes a a minimum without compromising quality
 - GIF File compression
 - squeezes out inefficiencies in data storage without losing data or distorting the image

- best used when saving logos and diagrams
 - LZW compression
- Interlaced Gif
 - download one line of pixels at a time from top to bottom, and browser display each line of the image as it gradually builds on the screen
 - stored in a format that allows browsers that support this feature to build a low-resolution version of the gif while the file is downloading.
 - Fuzzy to sharp animated effect while downloading
 - best use for larger GIF images as 200 x 100 pixels or greater
- Transparent Gif
 - pick colors from the color lookup table of the GIF to be transparent
 - can produce disappointing results when the image contains anti-aliasing
 - not good for printing
- Anti-Aliasing
 - technique for minimizing the distortion artifacts known as aliasing when representing a high-resolution image at a lower resolution
 - basically saying makes the pixels look circle instead of square when put together
- JPEG
 - Joint Photographic Experts Group (JPEG)
 - full color images that dedicate at least 24 bits of memory to each pixel, resulting in images that can incorporate 16.8 million colors
 - used a lot with photographers, artists, graphic designers. medical imaging, specialist, art historians.
 - save a lot of storage space
 - use a sophisticated mathematical technique called a discrete cosine transformation to produce a sliding scale of graphics compressions

- SAVE YOUR ORIGINAL UNCOMPRESSED IMAGES
- lossy compression
 - method which eliminates the data which is not noticeable
 - produce a close match of the data after decompression
- Struggle with sharp edges and curves
- PNG
 - portable Network Graphics
 - file size is typically larger
 - designed specifically for use on web pages
 - support for sophisticated image transparency, better interlacing and automatic corrections for display monitor gamma.
 - can hold short text descriptions
 - best use with line art, text and logos
- BMP
 - used to be popularity back in the day due to how easy and simple it was
- TIFF
 - Tagged Image File Format
 - support compress and uncompress files along with many different color options
 - popular with photographs and printers
- SVG
 - Scalable vector graphics
 - resize while keeping the same quality
- Raw file/negative film

- popular use with photography because it gives them more customizability on what to do

- Video File Formats

- Codec

- the order used to layout the data of an audio or video file to use it for playback, editing or changing
- program to decompress and compress video files

- Containers/Wrappers

- holds audio, video and metadata together in a single file along with additional information
 - have extension to files like .mov, .avi or .mp3
- meta data
 - holds bitrate, resolution, subtitles, device and time of creation

- Every video application has a proper codec and container

- HLS

- HTTP Live Streaming
 - able to switch to different bitrates depending on the network connectivity.
 - example
 - On low connection to the internet = 480p
 - on high connection to the internet = 1080p
- Adaptive Bitrate Segmentation
 - ABR
 - Have multiple of bitrates

- Common containers

- .swf

- Shockwave File/Small web format
 - An SWF file is an animation that may contain text, vector and raster graphics, and interactive content written in ActionScript.
- .mp2
 - audio file
 - most now use .mp3 instead
- .mp3
 - popular world wide
 - saves space without noticeable quality loss
- .mp4
 - paired with H.264 and H.265
 - Can store video and audio and subtitles and still images
- .mov
 - developed by apple
 - output H.264 video
- QT
 - quicktime
 - accepted by apple
- .avi
 - microsoft developed and released this
 - old codec
- .asf
 - microsoft container
 - include Digital Rights Management
- AVCHD
 - Advanced Video Coding

- developed by Sony and Panasonic as an HD recording format
 - utilized by consumer camcorders
 - support compressed or uncompressed audio and use H.264 video codec
 - file based video format
 - meant to be stored and played back on storage devices like flash drives and SD cards
 - support SD and HD
 - include menu navigation and slideshows with audio
- MXF
 - standard for file exchange of compressed video
- CinemaDNG
 - developed by Adobe
 - designed to be a standardized image sequence format for feature film work
 - support uncompressed and compressed image files
 - support HD, 2K and 4K files
- ACES
 - color management and image file interchange system
 - only global archiving standard for digital video
- Common Codecs
 - H.264 (MPEG-4)
 - uses lossy compression and commonly use today
 - most supported video codec
 - better bitrate than H.263
 - many camcorders and DSLR record in H.264
 - use very low and very high bitrate
 - often contain .mp4 and .mov containers

- h.265 (MPEG-H, HEVC)
 - High Efficiency Video Coding
 - Good for high resolutions and live streaming
 - half the bitrate of H.264
 - better compression than h.264
- ProRes
 - developed by Apple
 - used as acquisition formats by makers of cameras and recorders
- DNxHD
 - designed to work with AVID's lossy intermediate codec
- XAVC and XAVC-S
 - developed by SONY and use H.264 compression for recording HD and 4K video to cameras
 - use MXF container
- AVC-Intra
 - developed by Panasonic
 - use intra-frame compression
 - supported by most professional post software and use MXF container
- Flash
 - most popular option for encoding online video
 - used for games and animation
- .WMV (Windows Media Video)
 - developed by windows
 - first to stream video
- MPEG-2
 - standard for DVDs and used for Cable TV

- use for HDV videotape and web video
- MJPEG (Motion JPEG)
 - use in the past for web video and some post work
 - based on JPEG compression used for still images
- JPEG 2000
 - allow for very high quality image sequences,
 - compression use for DCP (Digital Cinema)
- MPEG-Dash
 - dynamic adaptive streaming over HTTP
 - open source
 - international standard
- Redcode
 - supported natively by most professional post software
- VP9
 - developed by google
 - royalty-free and open source coding
- Common containers
 - audio
 - .mp3
 - popular world wide
 - saves space without noticeable quality loss
 - AAC
 - advanced Audio Coding
 - widely supported
 - better than MP3

- AC-3
 - Dolby Digital Audio Codec 3
 - 5.1 surround sound
 - aiff
 - Audio Interchange File Format
 - Developed by Apple
 - Un compressed music file
- Audio Codecs
 - WAV
 - default industry audio standard
- Copyrights Overview
 - What is copyright?
 - right of authors to control these of their work for a limited period of time
 - A copyrighted work must be an original work of authorship which is fixed in a tangible medium of expression.
 - Where did copyright law originate?
 - Copyright law originated with the United States Constitution
 - The Copyright Office of the Library of Congress is responsible for overseeing the administrative functions of the copyright law.
 - Congress enacts copyright laws.
 - The Federal courts interpret and enforce the copyright law.
 - Why is copyright law important?
 - Copyright law has a dual role. It provides exclusive rights to authors in order to protect their work for a limited period of time but it was also established to promote creativity and learning.

- When does a work become copyrighted?
 - A work becomes copyrighted when it is fixed* in a tangible medium of expression. After March 1, 1989 works no longer require a copyright notice (© or the word copyright, the author's name and the year of publication). Copyright registration is also no longer required. However, it is wise to affix a copyright notice to works so that the owner of the copyright can be easily identified.
- What can be copyrighted?
 - Literary, musical and dramatic works.
 - Pantomimes and choreographic works.
 - Pictorial, graphic and sculptural works.
 - Sound recordings.
 - Motion pictures and other AV works.
 - Computer programs.
 - Compilations of works and derivative works.
 - Architectural works.
- What cannot be copyrighted?
 - Ideas, procedures, methods, systems, and processes are not copyrightable.
 - Titles, names, short phrases, and slogans are not copyrightable.
 - Facts, news, and research are not copyrightable.
 - Works in the public domain are not copyrightable.
 - Works that are not fixed in a tangible medium of expression.
- How long does copyright last?
 - Works created on or after January 1, 1978 are protected for a term of the life of the author plus 70 years. If it is a corporate author then the protection is for the

shorter of 95 years from publication* or 120 years from creation*. Works created and published prior to 1978 may be protected for different lengths of time.

- What is the public domain?

- The public domain consists of all works that never had copyright protection and works that no longer have copyright protection. The public domain also includes most works created by the United States government. All works in the public domain are free for the public to use. Works published in the United States prior to 1924 are in the public domain.

- Creative Commons

- Creative Commons is a nonprofit organization that helps overcome legal obstacles to the sharing of knowledge and creativity to address the world's pressing challenges.

- CC licenses

- CC BY

- you can reshare any media as long as you give credit to its author
- Credit must be given to the creator = BY

- CC BY-SA

- you can reshare any media as long as you give credit to its author and change it as long as you mention it.
- Credit must be given to the creator = BY
- adaptations must be shared under the same terms = SA

- CC BY-NC

- you can reshare any media as long as you give credit to its author but you can gain any money out of it.
- Credit must be given to the creator = BY
- only non commercial uses of the work are permitted= NC

- CC BY-NC-SA

- you can reshare any media as long as you give credit to its author and change it as long as you mention it but you are not allowed to gain any money out of it.
- Credit must be given to the creator = BY

- only non commercial uses of the work are permitted= NC
 - adaptations must be shared under the same terms = SA
- CC BY-ND
 - you can share any media as long as you give credit to its author and you have to share it as it is.
 - Credit must be given to the creator = BY
 - No derivatives or adaptations of the work are permitted = ND
- CC-NC-ND
 - you can reshare media as long as you give credit to the author and you can gain any money from it and cant make any changes to it.
 - Credit must be given to the creator = BY
 - only non commercial uses of the work are permitted= NC
 - No derivatives or adaptations of the work are permitted = ND
- CC0
 - you can do anything you want to the media.
- The licenses and CC0 cannot be revoked. This means once you apply a CC license to your material, anyone who receives it may rely on that license for as long as the material is protected by copyright, even if you later stop distributing it.
- How to apply a CC license or CC0 to your work
 - CC-licensing your work is simple. All you have to do is choose the CC license that suits your needs and then communicate this choice in a way that will be clear to people who come across your work. As part of this communication, you should include a link to the license you've chosen.
- Public Domain
 - CC0
 - Use this universal tool if you are a holder of copyright or database rights, and you wish to waive all your interests that may exist in your work worldwide. Because copyright laws differ around the world, you may use this tool even though you may

not have copyright in your jurisdiction, but want to be sure to eliminate any copyrights you may have in other jurisdictions.

- CC0 enables scientists, educators, artists and other creators and owners of copyright- or database-protected content to waive those interests in their works and thereby place them as completely as possible in the public domain, so that others may freely build upon, enhance and reuse the works for any purposes without restriction under copyright or database law.
- the problem
 - Dedicating works to the public domain is difficult if not impossible for those wanting to contribute their works for public use before applicable copyright or database protection terms expire. Few if any jurisdictions have a process for doing so easily and reliably. Laws vary from jurisdiction to jurisdiction as to what rights are automatically granted and how and when they expire or may be voluntarily relinquished. More challenging yet, many legal systems effectively prohibit any attempt by these owners to surrender rights automatically conferred by law, particularly moral rights, even when the author wishing to do so is well informed and resolute about doing so and contributing their work to the public domain.
- Using CC0
 - Unlike the Public Domain Mark, CC0 should not be used to mark works already free of known copyright and database restrictions and in the public domain throughout the world. However, it can be used to waive copyright and database rights to the extent you may have these rights in your work under the laws of at least one jurisdiction, even if your work is free of restrictions in others. Doing so clarifies the status of your work unambiguously worldwide and facilitates reuse. You should only apply CC0 to your own work, unless you have the necessary rights to apply CC0 to another person's work.
- the solution

- CC0 helps solve this problem by giving creators a way to waive all their copyright and related rights in their works to the fullest extent allowed by law. CC0 is a universal instrument that is not adapted to the laws of any particular legal jurisdiction, similar to many open source software licenses. And while no tool, not even CC0, can guarantee a complete relinquishment of all copyright and database rights in every jurisdiction, we believe it provides the best and most complete alternative for contributing a work to the public domain given the many complex and diverse copyright and database systems around the world.

- Public Domain Mark

- Use this tool if you have identified a work that is free of known copyright restrictions. Creative Commons does not recommend this tool for works that are restricted by copyright laws in one or more jurisdictions.
- The Public Domain Mark is recommended for works that are free of known copyright around the world. These will typically be very old works. It is not recommended for use with works that are in the public domain in some jurisdictions if they also known to be restricted by copyright in others.
- Our Public Domain Mark enables works that are no longer restricted by copyright to be marked as such in a standard and simple way, making them easily discoverable and available to others. Many cultural heritage institutions including museums, libraries and other curators are knowledgeable about the copyright status of paintings, books and manuscripts, photographs and other works in their collections, many of which are old and no longer under copyright. The Public Domain Mark operates as a tag or a label, allowing institutions like those as well as others with such knowledge to communicate that a work is no longer restricted by copyright and can be freely used by others. The mark can also be an important source of information, allowing others to verify a work's copyright status and learn more about the work.

- Attribution

- This license lets others distribute, remix, adapt, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most

accommodating of licenses offered. Recommended for maximum dissemination and use of licensed materials.

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 - This license lets others remix, adapt, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This license is often compared to “copyleft” free and open source software licenses. All new works based on yours will carry the same license, so any derivatives will also allow commercial use. This is the license used by Wikipedia, and is recommended for materials that would benefit from incorporating content from Wikipedia and similarly licensed projects.
- Attribution-NoDerivs
 - This license lets others reuse the work for any purpose, including commercially; however, it cannot be shared with others in adapted form, and credit must be provided to you.
- Attribution-NonCommercial
 - This license lets others remix, adapt, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don’t have to license their derivative works on the same terms.
- Attribution-NonCommercial-ShareAlike
 - This license lets others remix, adapt, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.
- Attribution-NonCommercial-NoDerivs
 - This license is the most restrictive of our six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can’t change them in any way or use them commercially.

- Radio frequency

- Am frequency
 - 535 kilohertz to 1.7 megahertz
- Short wave radio

- 5.9 megahertz to 26.1 megahertz
- Citizens Band (CB) radio
 - 26.96 megahertz to 27.41 megahertz
- TV stations
 - 54 to 88 megahertz (channel 2-6) & 174 to 220 megahertz (channel 7-13)
- FM frequency
 - 88 megahertz to 108 megahertz
- Audio Bitrate sizes
 - MP3
 - For radio type files , 64kps is good
 - For music recordings, 128kps is good
 - AAC
 - For radio type files, 32kps is good
- Audio CD rates
 - 44100 hz
- Crossfades
 - to edit the end and the beginning to ease the transition as the music cuts in and out
- Open Caption vs Closed Caption
 - Open captions
 - Subtitles that are permanently on the video
 - Closed captions
 - Subtitles that can be turn off and on for the video
- Defamation
 - anything that harms someone reputation
- Libel
 - providing false statements that damage a person reputation

- Web-based apps vs Naive apps

- Web apps are apps like email, online file Conversion
- Naive apps are mobile downloadable apps like 9GAG

- Digital Audio

- in which we store, recreate and manipulate audio information in a computer system
- 48 kHz is the standard for audio in video
- Sampling Rates
 - Audio CD's
 - Normal rate is 44,100 kHz (min) with a 20,000 khz (max) frequency
 - DVDs
 - 48,000 Hz (48 kHz)
 - Cassette
 - 32,000 Hz (32 kHz)
 - Telephone systems
 - 8,000 hz (8 kHz)
 - can also be used for sound effects or recording infrasound
- Audio sample rate
 - Sample rate
 - number of sample of audio carried per second measured in Hz or kHz (1 kHz = 1000 Hz)
 - the maximum audio frequency that can be reproduced
 - higher sample rate = higher audio file size
 - Bandwidth
 - difference between the highest and lowest frequencies carried in a audio stream
 - determines the range of frequencies captured in digital audio
- Nyquist rate

- capture and reconstruct the original sine wave's frequency with an audio sample rate at least twice its frequency
- Nyquist frequency
 - capture and recreate frequencies up to half the audio sample rate
- Aliasing
 - signal above the nyquist frequency is not recorded properly by audio-to digital converters (ADCs), becoming mirrored back across the Nyquist frequency and introducing artificial frequencies
- Audio bit depth
 - number of possible amplitude values we can record for each sample
- Dithering
 - a form of low-level noise that is intentionally added to digital audio file as it's rendered to a lower bit depth
- Audio Bitrate
 - Bitrate
 - If you are streaming, you need to keep the bitrate lower
 - if you are putting audio on physical formats, you can have higher bitrate
 - Human notice any audio problems below 90 Kbps
 - amount of data being transferred into audio
 - Higher bitrate = better audio quality
 - 3 types of audio files
 - uncompressed files = higher bitrate (.WAV,AIFF,PCM)
 - Large audio files
 - compressed lossy files = lower bitrate (.MP3,.AAC)
 - small audio files

- compressed lossless files = good amount of bitrate (.FLAC,.WMA,.ALAC)
 - medium audio files
- Audio CD bitrate
 - 1,411 Kbps
- MP3 bitrate
 - 96 Kbps - 320 Kbps
- Streaming services (Pandora, Spotify)
 - Pandora bitrate is 64 -192 Kbps
 - Spotify bitrate is 96 to 160 Kbps
- Universal Design
 - design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of age,size,ability or disability
 - The environment should be designed to meet the needs of all people who wish to use it. (like a classroom)
 - equitable use
 - design is useful and marketable to people with diverse abilities
 - flexibility in use
 - design accommodates a wide range of individual preferences and abilities
 - simple and intuitive use
 - design is easy to understand, regardless of user's experience, knowledge, language skills, or current concentration level
 - perceptible information
 - design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities
 - tolerance for error

- design minimizes hazards and adverse consequences of accidental or unintended actions
- low physical effort
 - design can be used efficiently and comfortably and with a minimum of fatigue
- size and space for approach and use
 - appropriate size and space is provided for approach, reach, manipulation and use regardless of user's body size, posture, or mobility

Helpful videos for Domain 3

- <https://youtu.be/CutWL8Al61E> (Who's Who in the Movie Credits)
- <https://youtu.be/ww12llmOJ38> (Image File Formats - JPEG, GIF, PNG)
- <https://youtu.be/WlIKXOrt3bk> (Audio File Formats - MPC, AAC, WAV, FLAC)
- <https://youtu.be/XvoW-bwleyY> (Video Formats, Codes and Containers)
- <https://youtu.be/ukFI-siTFtg> (What is copyright?)
- <https://youtu.be/kBG-RnZU2cQ> (How to use creative commons video on youtube without copyright claims)
- <https://youtu.be/ZbJmQSuNcQ4> (What does "Creative Commons" Mean?)
- <https://youtu.be/hqi0114mwtY> (What is What is Anti Aliasing (AA) as Fast as Possible)

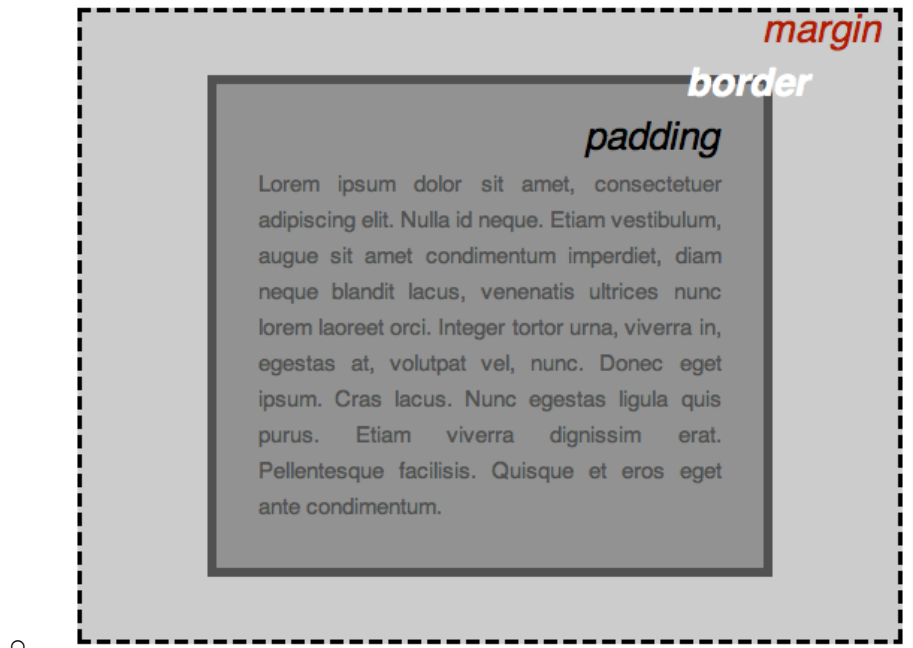
Domain 4

- Computer Programming
 - HTML
 - <!DOCTYPE> Declaration
 - <!DOCTYPE>
 - declaration represents the document type
 - Must appear once at the top of the page before any HTML tags
 - HTML5 declaration
 - <!DOCTYPE html>
 - <h1> defines the most important heading
 - <h6> defines the least important heading

- HTML Paragraphs
 - <p> tag
 - <p> open paragraph
 - </p> end paragraph
- HTML Links
 - <a> tag
 - <a> open link
 - closed link
 - href = link destination
- HTML Images
 - tag
 - src= source file
 - alt= alternative text
 - Text that is going to appear for the picture
 - width and height are provided as attributes
- CSS
 - language we use to style an HTML document
 - Cascading Style Sheets.
 - used to selectively style HTML elements
 - Ruleset
 - Selector
 - html element name at the start of the ruleset
 - Declaration
 - properties you want to style
 - example

- color : red
- Properties
 - you choose which properties you want to affect in the rule
- Property value
 - right of the property
 - chooses one out of many possible appearances for a given property
 - Color values in addition to red.
- each rule set must be wrapped in curly braces
- must use a colon (:) to separate the property from its value or values
- must use a semicolon (;) to separate each declaration from the next one.
- can select multiple elements and apply a single ruleset to all of them
- Different types of selectors
 - element selector (called a tag or type selector)
 - all html elements of the specified type
 - example
 - p or <p>
 - ID selector
 - element on the page with an specified ID (selection a section of whatever you put (for instance, a paragraph, sentence, word..etc..))
 - example
 - #my-id, < p id="my-id" or
 - Class selector
 - elements on the page with a specified class. multiple instances of the same class can appear on a page
 - example

- .my-class, (p class="my-class"> and
- Attribute selector
 - elements on the page with the specified attribute.
 - example
 - img[src] or not
- Pseudo-class
 - specified element but only when in the specified state (when the cursor hovers over a link)
 - example
 - a:hover selects <a>
- Can use a font-size and text-align, line-height and letter-spacing
- All about boxes
 - includes size, color and position
 - padding
 - space around the content
 - border
 - solid line that is just outside the padding
 - margin
 - the space around the outside of the border
 - example



-
- background-color
 - behind an element's content and padding
- color
 - the color of an element's content
- text-shadow
 - set a drop shadow on the text inside an element
- display
 - set the display mode of an element
- CSS comment
 - begin
 - `/*`
 - end
 - `*/`
- Java

- object oriented programming
- case-sensitive
- main page should always have “Main” in it
- System.out.println()
 - method to print a line of text
- Comments
 - //
- Java Multi-line comments
 - /* begin
 - */ end
- Variables
 - String
 - stores text
 - Int
 - stores whole numbers
 - Float
 - stores numbers with decimals
 - Char
 - stores single characters like “B” or “c”
 - boolean
 - stores true or false
- println()
 - display variables
- Add another variable
 - +

- All Java variables must be identified with unique names
 - unique names are identifiers
- data types
 - primitive data types
 - byte
 - 1 byte size
 - stores whole numbers from -128 to 127
 - short
 - 2 byte size
 - stores whole numbers from -32,768 to 32,767
 - int
 - 4 byte size
 - stores whole numbers from -2,147,483,648 to 2,147,483,647
 - long
 - 8 bytes size
 - Stores whole numbers from -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
 - float
 - 4 bytes size
 - Stores fractional numbers. Sufficient for storing 6 to 7 decimal digits
 - double

- 8 bytes
 - Stores fractional numbers. Sufficient for storing 15 decimal digits
- char
 - 2 bytes
 - Stores a single character/letter or ASCII values
- non primitive data types
 - called reference types because they refer to objects
 - string
 - arrays
 - classes
- Type Casting
 - widening
 - automatic
 - converting a smaller type to a larger type size
 - byte then short then char then int then long then float then double
 - narrowing
 - manual
 - converting a larger type to a smaller size type
 - double then float then long then int then char then short then byte
- Arithmetic operators
 - Addition
 - +

- subtraction

- -

- multiplication

- *

- division

- /

- modulus

- %

- increment

- ++

- increase the value of a variable by 1

- decrement

- --

- decrease the value of a variable by 1

- comparison operators

- equal to

- ==

- not equal

- !=

- greater than

- >

- less than

- <

- greater than or equal to
 - >=
 - less than or equal to
 - <=
- Logical operators
 - logical and
 - &&
 - returns true if both statements are true
 - logical or
 - ||
 - returns true if one of the statements is true
 - logical not
 - !
 - reverse the result, returns false if the result is true
- length
 - length of a string
- toUpperCase
 - Output upper case
- toLowerCase
 - make output lower case
- \ (backslash escape character)
 - turn special characters into string characters
- \'
 - single quote
- \"

- double quote
- \\
 - backlash
- \n
 - new line
- \r
 - carriage return
- \t
 - tab
- \b
 - backspace
- \f
 - form feed
- To declare an array
 - need square brackets []

- SQL
 - Structured Query Language
 - not case sensitive
 - select
 - extract data from a database
 - update
 - updates data in a database
 - delete
 - deletes data from a database
 - insert into
 - insert new data into a database

- create database
 - creates a new database
- alter database
 - modifies a database
- drop table
 - deletes a table
- create index
 - creates an index (search key)
- drop index
 - deletes an index
- operators in the where clause
 - =
 - equal
 - >
 - greater than
 - <
 - less than
 - >=
 - greater than or equal
 - <=
 - less than or equal
 - <> or !=
 - not equal
 - between
 - between a certain range
 - like

- search for a pattern
- IN
 - to specify multiple possible values for a column
- AND OR and NOT operators
 - and operators
 - displays a record if all conditions separated by and are TRUE
 - or operators
 - displays a record if any of the conditions separated by OR is TRUE
 - not operator
 - displays a record if the condition is NOT TRUE
- ORDER BY
 - used to sort the result-set in ascending or descending order
 - to use descending order
 - use DESC keyword
- insert into
 - used to insert new records in a table
- UPDATE
 - modify the existing records in a table
- delete
 - used to delete existing records in a table
- SELECT TOP clause
 - used to specify the number of records to return
- MIN and MAX
 - MIN
 - returns the smallest value of the selected column

- max
 - returns the largest value of the selected column
- COUNT AVG and SUM
 - count
 - returns the number of rows that matches a specified criterion
 - avg
 - returns the average value of a numeric column
 - sum
 - returns the total sum of numeric column
 - Like operator
 - in where clause to search for a specified pattern in a column
 - two wildcards are often used with the like operator
 - % represent zero, one or multiple characters
 - __ represents one, single character
 - wildcard characters
 - used to substitute one or more characters in a string.
 - Wildcard characters in MS Access
 - *
 - represent zero or mor characters
 - example
 - bl* finds bl, black, blue or blob
 - ?
 - represents a single character
 - example
 - h?t finds hot, hat and hit

- []

- represents any single character within the brackets

- examples

- h[oa]t finds hot and hat, but not hit

- !

- represents any character not in the brackets

- example

- h[!oa]t finds hit, but not hot and hat

- -

- represents a range of characters

- example

- c[a-b]t finds cat and cbt

- #

- represents any single numeric characters

- example

- 2#5 finds 2-5, 215, 225,235,245,255,265,275,285,295

- Wildcard characters in SQL Server

- %

- represents zero or more characters

- example

- bl% finds bl, black blue and blob

- `_`

- represents a single character
 - example
 - `h_t` finds hot, hat and hit

- `[]`

- represents any single character within the brackets
 - examples
 - `h[oa]t` finds hot and hat, but not hit

- `^`

- Represents any character not in the brackets
 - example
 - `h[^oa]t` finds hit, but not hot and hat

- `-`

- represents a range of characters
 - example
 - `c[a-b]t` finds cat and cbt

- SQL vs PHP

- PHP is used to create a program
- SQL talks to servers about accessing data
- You create a program using PHP and add SQL language inside of it to access the data that you need

- 3D Primer for Game Developers

- polycount

- the polycount of your model is the total number of triangular polygons it takes to draw your model in 3D space.
- Optimization
 - Silhouettes
 - outline of the model
 - Unseen Polygons
 - There are some scenarios where it will be impossible for the player to see certain parts or sides of a model, because of the way it is being used in the game
 - keep your polygons in quads and triangles
- Diffuse Map
 - flat colors for your object
- Normal Map
 - texture that is blue, pink and green and is used to give the illusion of greater detail on your model
 - also known as bump maps
- Specular Map
 - add shininess
 - usually black and white or grayscale
- Alpha Map
 - used to make parts of an object more transparent
- Top 10 Principles of Web Design
 - purpose
 - Good web design always caters to the needs of the user. Are your web visitors looking for information, entertainment, some type of interaction, or to transact with your business? Each page of your website needs to have a clear purpose,

and to fulfill a specific need for your website users in the most effective way possible.

- communication
 - People on the web tend to want information quickly, so it is important to communicate clearly, and make your information easy to read and digest. Some effective tactics to include in your web design include: organising information using headlines and sub headlines, using bullet points instead of long windy sentences, and cutting the waffle.
- typefaces
 - In general, Sans Serif fonts such as Arial and Verdana are easier to read online (Sans Serif fonts are contemporary looking fonts without decorative finishes). The ideal font size for reading easily online is 16px and stick to a maximum of 3 typefaces in a maximum of 3 point sizes to keep your design streamlined.
- colors
 - A well thought out colour palette can go a long way to enhance the user experience. Complementary colours create balance and harmony. Using contrasting colours for the text and background will make reading easier on the eye. Vibrant colours create emotion and should be used sparingly (e.g. for buttons and call to actions). Last but not least, white space/ negative space is very effective at giving your website a modern and uncluttered look.
- images
 - A picture can speak a thousand words, and choosing the right images for your website can help with brand positioning and connecting with your target audience. If you don't have high quality professional photos on hand, consider purchasing stock photos to lift the look of your website. Also consider using infographics, videos and graphics as these can be much more effective at communicating than even the most well written piece of text.
- navigation
 - Navigation is about how easy it is for people to take action and move around your website. Some tactics for effective navigation include a logical page hierarchy, using bread crumbs, designing clickable buttons, and following the 'three click rule' which means users will be able to find the information they are looking for within three clicks.
- grid based layouts

- Placing content randomly on your web page can end up with a haphazard appearance that is messy. Grid based layouts arrange content into sections, columns and boxes that line up and feel balanced, which leads to a better looking website design.
- F pattern design
 - Eye tracking studies have identified that people scan computer screens in an “F” pattern. Most of what people see is in the top and left of the screen and the right side of the screen is rarely seen. Rather than trying to force the viewer’s visual flow, effectively designed websites will work with a reader’s natural behaviour and display information in order of importance (left to right, and top to bottom).
- load time
 - Everybody hates a website that takes ages to load. Tips to make page load times more effective include optimising image sizes (size and scale), combining code into a central CSS or JavaScript file (this reduces HTTP requests) and minify HTML, CSS, JavaScript (compressed to speed up their load time).
 - Also, make sure you reduce the size of your GIF files (if you include them)
- mobile friendly
 - It is now commonplace to access websites from multiple devices with multiple screen sizes, so it is important to consider if your website is mobile friendly. If your website is not mobile friendly, you can either rebuild it in a responsive layout (this means your website will adjust to different screen widths) or you can build a dedicated mobile site (a separate website optimised specifically for mobile users).
- ASCII Code
 - ASCII
 - American Standard Code for INformation Interchange
 - best used for email, programming, text files and data conversions
 - Table of ASCII

ASCII TABLE

Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char
0	0	[NULL]	32	20	[SPACE]	64	40	@	96	60	`
1	1	[START OF HEADING]	33	21	!	65	41	A	97	61	a
2	2	[START OF TEXT]	34	22	"	66	42	B	98	62	b
3	3	[END OF TEXT]	35	23	#	67	43	C	99	63	c
4	4	[END OF TRANSMISSION]	36	24	\$	68	44	D	100	64	d
5	5	[ENQUIRY]	37	25	%	69	45	E	101	65	e
6	6	[ACKNOWLEDGE]	38	26	&	70	46	F	102	66	f
7	7	[BELL]	39	27	'	71	47	G	103	67	g
8	8	[BACKSPACE]	40	28	(	72	48	H	104	68	h
9	9	[HORIZONTAL TAB]	41	29	)	73	49	I	105	69	i
10	A	[LINE FEED]	42	2A	*	74	4A	J	106	6A	j
11	B	[VERTICAL TAB]	43	2B	+	75	4B	K	107	6B	k
12	C	[FORM FEED]	44	2C	,	76	4C	L	108	6C	l
13	D	[CARRIAGE RETURN]	45	2D	-	77	4D	M	109	6D	m
14	E	[SHIFT OUT]	46	2E	.	78	4E	N	110	6E	n
15	F	[SHIFT IN]	47	2F	/	79	4F	O	111	6F	o
16	10	[DATA LINK ESCAPE]	48	30	0	80	50	P	112	70	p
17	11	[DEVICE CONTROL 1]	49	31	1	81	51	Q	113	71	q
18	12	[DEVICE CONTROL 2]	50	32	2	82	52	R	114	72	r
19	13	[DEVICE CONTROL 3]	51	33	3	83	53	S	115	73	s
20	14	[DEVICE CONTROL 4]	52	34	4	84	54	T	116	74	t
21	15	[NEGATIVE ACKNOWLEDGE]	53	35	5	85	55	U	117	75	u
22	16	[SYNCHRONOUS IDLE]	54	36	6	86	56	V	118	76	v
23	17	[ENG OF TRANS. BLOCK]	55	37	7	87	57	W	119	77	w
24	18	[CANCEL]	56	38	8	88	58	X	120	78	x
25	19	[END OF MEDIUM]	57	39	9	89	59	Y	121	79	y
26	1A	[SUBSTITUTE]	58	3A	:	90	5A	Z	122	7A	z
27	1B	[ESCAPE]	59	3B	;	91	5B	[	123	7B	{
28	1C	[FILE SEPARATOR]	60	3C	<	92	5C	\	124	7C	
29	1D	[GROUP SEPARATOR]	61	3D	=	93	5D	]	125	7D	}
30	1E	[RECORD SEPARATOR]	62	3E	>	94	5E	^	126	7E	~
31	1F	[UNIT SEPARATOR]	63	3F	?	95	5F	_	127	7F	[DEL]

- Tips about TCP/IP

- TCP/IP

- invented by Vinton Cerf

- IP gets the packet(data packet) to the right computer, but UDP (User Datagram Protocol) gets the packet to the right program running on that computer

- CheckSum

- check the sum of the data to make sure that the right UDP is in the right port
 - only store 16 bits

- During connection oriented protocol

- computer send SYN message to receiving computer
 - receiving computer send SYN ACK (acknowledgement message) back to computer
 - computer send ACK RECEIVED to receiving computer
 - then data can be delivered

- Web Servers

- Cherokee

- open-source cross-platform web server that runs on Linux, BSD variants, Solaris, OS X and Windows.

- Lighttpd

- open-source web server optimized for speed-critical environments while remaining standards-compliant, secure and flexible

- both of still use today, mostly take up 70% of the market

- Apache

- open a line of communication when requesting info from server to client and client to server (one thread open and another one thread open = 2 threads open for visit a website)
 - provides a variety of multi-processing modules (MPMs) that handle clients' request
 - used a lot of power
 - can be dynamically change if needed
 - accepted by Windows, MacOS, Solaris and Linux

- Nginx

- only one line of communication is open during requesting and receiving info from server to client and client to server
 - use for high traffic websites (instagram, facebook,twitch,reddit)
 - acts as a web server and proxy
 - was designed to use an asynchronous, non-blocking, event driven connection handling algorithm
 - use as a connect port for each computer to ask whatever the client wants and avoid overloading the server.

- can use a small amount of power even with heavy loads

- ICANN and W3C

- Internet Corporation for Assigned Names and Numbers (ICANN)
 - coordinate the DNS to match domain names with correct IP address
 - is HUGE directory of DNS and IP address
 - started apart of the government
 - manages IP address and other protocol numbers
 - international, community-driven organization independent of the government
 - approves top-level-domain names
- World Wide Web Consortium (W3C)
 - developing protocols and guidelines that ensure the long-term growth of the web.
 - created in 1994
 - founded by Tim Berners-Lee

- Web Page validation

- Need HTML and CSS
 - Why? Future proof your website and make it accessible to visitors

- ECMA

- aims to develop standards and technical reports to facilitate and standardize the use of information communication technology and consumer electronics

- Gopher

- early version of a search engine (text-based search engine)
- is a communications protocol designed for distributing, searching, and retrieving documents in the Internet Protocol network.
- “go fer” information that is on other computers

- Telnet vs SSH

- teletype network
 - no encryption over telnet
 - terminal emulation program that is used to access remote server
 - able to run and close program, connect to routers and used to test ports
 - command line tool/ userface
- Secure shell
 - provides encryption during telnet
 - need a password and public key authentication during telnet

- UDP

- User Datagram Protocol
 - send and receiving data connection-less
 - does not guarantee data delivery
 - “fire and forget” protocol

- Circuit Switching vs Packet Switching

- Packet-switched networks
 - mode of data transmission in which a message is broken into a number of parts which are sent independently, over whatever route is optimum for each packet, and reassembled at the destination
 - send information at whatever speed that is needed at the time based on demand
 - move data in separate, small blocks (packets) based on the destination address in each packet
- circuit-switched
 - mode of data transmission that has a “dedicated” speed at which data is being transferred at REGARDLESS of the demanded.

- most used for phone calls
- dedicated point-to-point connections during calls.

- **Negative/White space vs Positive Space**

- positive space
 - the subject or areas of interest in an artwork, such as a person's face or figure in a portrait, the objects in a still life painting, or the trees in a landscape painting
- negative space/white space
 - space around and between the subject
 - type of negative/white space
 - macro
 - empty spaces between core design elements like columns, paragraphs and graphic elements
 - micro
 - spaces between smaller elements like letters or line spacing
 - active
 - negative space you made a real effort to include in order to create an emphasis or structure within your design. Maybe you use it to draw the reader's eye to a certain focal point or created flow within your design
 - passive
 - occurs naturally.
 - Kerning and leading are both examples of passive white space

- **SMART**

- Specific, Measurable, attainable, relevant, Time-bound

- **Unreliable narrator**

- unreliable narrator is an untrustworthy storyteller, most often used in narratives with a first-person point of view. The unreliable narrator is either deliberately deceptive or unintentionally misguided, forcing the reader to question their credibility as a storyteller.

- **.HTAccess**

- directory-level configuration file
 - most secure method of password protection
- Bandwidth for Internet surfing and sending an email
 - 1 to 6 Mbps
- SQL injection attack
 - designed to target data-driven applications by exploiting security vulnerabilities in the application's software
- Responsive Layout
 - Made up of several separate layouts that give the best results in a variety of resolutions
- Youtube
 - Max length youtube verify your video BEFORE you use your Google Account
 - 15 min
 - Max length AFTER verification
 - 12 hours
- Enriched Virtual Model
 - a course or subject in which students have required face-to-face learning sessions with their teacher of record and then are free to complete their remaining coursework remote from the face-to-face teacher.
- Static Content
 - any file that is stored in a server and is the same every time it is delivered to users
- Dynamic Content
 - changes based on factors specific to the user such as time of visit, location and device
- Helpful Videos for Domain 4
 - <https://youtu.be/AEaKrq3SpW8> (Talk about TCI/IP)
 - <https://youtu.be/nwDq4adJwzM> (Talk about early programming)
 - <https://youtu.be/RU1u-js7db8> (First Programming Languages)
 - <https://youtu.be/DuDz6B4cqVc> (Data Structures)
 - https://youtu.be/OvF_pnJ6zrY (How Do URLs work?)

- <https://youtu.be/tOj8MSElbfA> (FTP, SFTP and TFTP explained)
- https://youtu.be/PpsEqJV_A0 (What is TCP/IP?)
- <https://youtu.be/e6-TaH5bkjo> (DHCP explained)
- <https://youtu.be/mBL9Athx7ms> (What is PHP?)
- <https://youtu.be/H4l42nbYmrU> (ASCII Code and Binary)
- <https://youtu.be/6vbgZnQrpbU> (What is CSS)
- <https://youtu.be/gT0Lh1eYk78> (HTML,CSS,JavaScript Explained [in 4 minutes for beginners])
- <https://youtu.be/zB85kTs-sEw> (What is ASCII)
- <https://youtu.be/2lCR0FGLn2c> (Apache Web Server)
- <https://youtu.be/JKxIsVZXG7c> (NGINX Explained in 100 Seconds)
- <https://youtu.be/hdkQFWemgrw> (Historical protocols and gopher)
- <https://youtu.be/tZop-ziYkrU> (Telnet vs SSH Explained)
- <https://youtu.be/oUN-s6aFMTk> (Circuit Switching vs Packet Switching)

● Things not listed on the TT review class

- Bandwidth and bit rate
 - bandwidth
 - maximum rate of data transfer across a given path.
 - bit rate
 - the number of bits per second that can be transmitted along a digital network
- A component of ISTE's equitable access
 - Sufficient bandwidth to allow learning to occur anytime
 - reliable access to current and emerging technologies
 - teachers who understand how to use technology to both enhance learning
- Informative assessments
 - ongoing assessments, reviews, and observations in a classroom

○ Formative assessment

- modify teaching and learning activities to improve student attainment.
- examples
 - an exit slip
 - summarization
 - post cards
 - List 3 things a student did not understand
 - venn diagram
 - Hand in, pass out
 - write their answer on a paper, give it to teacher and gives it to other students to grade (no name on paper)
 - Visualize
 - quizzes
 - write it down
 - mini-whiteboards

○ 10 Rules for Best Practice for folder and file naming convention

- Avoid extra long folder names and complex hierarchical structures but use information-rich filenames instead
- Put sufficient elements in the structure for easy retrieval and identification but do not overdo it
- Use the underscore (_) as element delimiter. Do not use spaces or other characters such as: ! # \$ % & ' @ ^ ` ~ + , . ; =) (
- Use the hyphen (-) to delimit words within an element or capitalize the first letter of each word within an element
- Elements should be ordered from general to specific detail of importance as much as possible
- The order of importance rule holds true when elements include date and time stamps. Dates should be ordered: YEAR, MONTH, DAY. (e.g. YYYYMMDD,

YYYYMMDD, YYYYMM). Time should be ordered: HOUR, MINUTES, SECONDS (HHMMSS)

- Personal names within an element should have family name first followed by first names or initials
- Abbreviate the content of elements whenever possible
- An element for version control should start with V followed by at least 2 digits and should be placed as the last most element. To distinguish between working drafts (i.e. minor revisions) use Vx-01->Vx-99 range and for final draft (i.e. major version release) use V1-00-> V9-xx. (where x =0-9)
- Prefix the names of the pertinent sub-folders to the file name of files that are being shared via email or portable storage devices

○ Asynchronous vs Synchronous

- Asynchronous
 - take online courses on your own schedule
 - might be given a time frame--- usually one week window during which they need to connect at least once or twice
 - students are free to contribute whenever they choose
- Synchronous
 - require students and instructors to be online at the same time
 - lectures, discussions and presentations occur at a specific hour
 - all students must be online at that specific hour in order to participate

○ AUP Document

- Acceptable Use Policy
- set of rules applied by the owner, creator or administrator of a network, website, or service, that restrict the ways in which the network, website or system may be used and sets guidelines as to how it should be used.

- Pixel

- A single point in an image that is usually square in shape; the smallest addressable screen element; and the smallest unit of picture that can be controlled

- Magic Wand Tool in photoshop

- A Photoshop tool that selects portions of an image based on the color similarities of adjacent pixels through a single click

- Principles of Design

- Balance
 - distribution of the visual weight of objects, colors, texture, and space.
- Emphasis
 - the part of the design that catches the viewer's attention
- Movement
 - path the viewer's eye takes through the work of art, often to focal areas.
- Pattern
 - repeating of an object or symbol all over the work of art
- Repetition
 - works with pattern to make the work of art seem active
- Proportion
 - feeling of unity created when all parts (sizes, amounts, or number) relate well with each other
- Rhythm
 - created when one or more elements of design are used repeatedly to create a feeling of organized movement.
- Variety
 - use of several elements of design to hold the viewer's attention and to guide the viewer's eye through and around the work of art.

- Unity
 - feeling of harmony between all parts of the work of art, which creates a sense of completeness.

- Pantone

- A commonly used standardized system for matching colors

- Lorem Ipsum

- used by professional printers for centuries
 - placeholder text commonly used to demonstrate the visual form of a document or a typeface without relying on meaningful content.

- Drop Caps

- a letter at the beginning of a word, a chapter, or a paragraph that is larger than the rest of the text.
 - Two reasons on using Drop Caps
 - Decoration
 - In a book with hundreds of pages of gray rectangles of type, it's considerate to your reader to give her a bit of decoration once in a while, and drop caps are perfect for that.
 - Navigation
 - A secondary function of the drop cap is to let the reader know a new section of the book is beginning. When you see that large letter, it physically alerts you that something new is coming.

- Establish perspective in 3D Design

- vanishing point

- Raster vs Vector

- raster
 - created with pixel-based software or captured with a camera or scanner.
 - you paint an image and it's similar to dipping a brush in paint and painting. You can blend colors to soften the transition from one color to another.

- vector
 - math-defined shapes created with vector software and are not as common; used in CAD/engineering, 3D animation, and Graphic Design for processes that reproduce an image onto an object such as engraving, etching, cut stencils.
 - you draw the outline of shapes: and it's similar to creating an image with tiles of all different shapes and sizes. e.g. an eye shape, a nose shape, a lip shape. These shapes called objects display one single color each.
 - common used of vectors
 - Specialty printing: e.g. coffee mugs, frisbees, koozies
 - Signs and banners: cut, sandblasted, carved
 - Engraving
 - Etching
 - Metal stamping
 - Laser engraving or laser cutting
 - Decals, labels, stickers
 - Large format printing

○ Three-Point Lighting

- traditional method for illuminating a subject in a scene with light sources from three distinct positions.
- three types of lights
 - key light, fill light, and backlight

○ Required elements for a group to include in their storyboard before recording a project

- Framing Height, Camera Angle, Movement

○ Java vs Javascript

- Java
 - object oriented programming

- Javascript
 - object-oriented programming scripting language
- Highest Number of animation careers in 2017
 - California
- Bezier Curves
 - vector curves are defined mathematically and can be scaled without the "jaggies" inherent in enlarging bitmapped fonts or graphics
- Bitmap
 - Resolution dependent
- Rasterizing
 - Changing from vector graphic to a pixel graphic
- Rigging
 - process of creating a skeleton for a 3D model so that it can move
- Gutter
 - What is the name of the space that is placed between columns in a design to add breath or white space? Its width is usually two times the margin
- Audience
 - is the group of people your graphic design is going to be used to inform, persuade, educate or even entertain.
- Balance
 - refers to distributing the weight of elements in a design.
- Bitmap images
 - an object made of pixels or dots that are sometimes referred to as "raster files" or "painted images."
- Body type
 - is the printed type that makes up the text in a layout.

- Clipart

- artwork found in a book that could be clipped out and used in your publication. Today it is usually sold as electronic artwork files that can be placed into your publication.

- CMYK (Process color)

- printing four colors, cyan, magenta, yellow, and (key)black to create a full color image.

- Color

- is a powerful element in communicating symbolic meanings, emotions to attract the reader's attention. It is the visual sensation produced in the brain when the eye views various wavelengths of light.

- Color scheme

- a selection of colors you want to incorporate in your design to enhance its message.

- Color Triad

- any three colors that are the same distance apart on a color wheel that form a triangle.

- Column

- is a space in a publication that is mathematically defined to be a certain height and width where graphics and text are placed.

- Comprehensive layout

- is a full color layout that gives the customer a more detailed look at the finished product.

- Contrast

- used to keep the attention of the reader and to keep the reader's interest moving from one element to another. (see emphasis)

- Cropping

- to delete unwanted parts of an image so that the result is more useful

- Desktop Publishing

- using a computer and graphic design software to layout and design a publication.

- Digital Printing

- involves the output of an electronic computer file from the computer to the printer.

- Display type

- is the type that is used to capture the reader's attention and convey the main message.

- Double-sided printing

- refers to printing on both sides of the paper.

- Electrostatic Printing

- is a process that requires the use of static electricity to transfer the image from the plate to the substrate.

- Emphasis

- adds variation or interest to a design. (see contrast)

- Final

- a completed detail representation of the final product including all colors, images and text with proper margins and folds.

- Flexography Printing

- This form of relief printing that uses rubber plates.

- Font

- An assortment of one size and style of Type.

- Formal balance

- The placement of elements symmetrically so that the elements have equal weight on the page.

- Graphic Communications

- the act of communicating visually; the exchange of information in a visual form, using printed words, drawings, photographs or a combination of these.

- Gravure Printing

- This printing process uses an etched cylinder to transfer ink to a substrate.

- Gutter

- is the space placed between columns in a design to add breath or white space. Its width is usually two times the margin.

- Halftone

- it is an image that is comprised of dots.

- Harmony

- is when the elements work together to achieve a pleasing and flowing design.

- Illustration

- are the elements in a layout that include the ornamentation, photographs, and artwork.

- Informal balance

- is achieved when the value, size, and location of unequal elements on a page are changed.

- Landscape

- is a horizontal format on a computer screen, page or printed product.

- Legal

- an industry term that refers to a piece of substrate that is 11 inches by 14 inches.

- Letter

- an industry term that refers to a piece of substrate that is 8 _ x 11 inches in size, also referred to A size paper by the American National Standard Institute.

- Letterpress

- a form of printing in which ink is applied to the raised surface of the type. Then the type and substrate (paper) are pressed together leaving the image on the substrate.

- Line

- connects points to form a visual image.

- **Margin**
 - imprinted space around the edge of the printed material.
- **Mass**
 - the amount of space between or around objects.
- **Visual Communications**
 - refers to any communication that does not involve speech. i.e. Writing, sign language, Morse code, body language.
- **Offset Lithography**
 - a form of printing in which the image is transferred to a rubber blanket, and from the rubber blanket to paper.
- **Orientation**
 - is the direction of the substrates width and height.
- **Page layout**
 - is the placement of design items within the page.
- **Panel layout**
 - is the placement of design items within the panel or column.
- **Pantone Matching System**
 - a universal color matching system that is based on ink colors used in the printing industry, also known as PMS colors.
- **Photograph**
 - Continuous tone image that could be either black and white or full color.
- **Portrait**
 - Upright or vertical format on a computer screen, page or printed product.
- **Primary colors**
 - these are the basic colors that are combined to create all other colors as described in the theory of light. They are red, green and blue.

○ Printing

- a process involving the use of specialized machines (printing presses) to transfer an image from an image carrier to a substrate, usually paper. Most often, printing involves making duplicates in large quantities.

○ Proportion

- The relationship between each element's size and shape.

○ Relief Printing

- is a type of printing in which the type is raised above the surface of the carrier.

○ Rhythm

- is visual movement and repetition that guides the reader.

○ Rough-layout

- is a redrawn version of the thumbnail layout that closely resembles the final product.

○ Scaling

- increasing or decreasing the size of a graphic without altering its proportions.

○ Screen Printing

- a process in which ink is transferred through small openings in a screen that is created by a stencil. The ink only flows through the open image areas of the screen onto the substrate that is being printed.

○ Secondary colors

- are produced by mixing pairs of primary colors. They are orange, green and violet.

○ Shape

- Objects that have dimension (height and weight).created by a basic structure of lines. The three basic shapes are square, circle, and triangle.

○ Single-sided printing

- refers to printing only on one side of a substrate.

- Spot color

- is a technique in which the dot size is varied to produce different shades. This creates the illusion of multiple color printing.

- Tabloid

- an industry term that refers to a piece of substrate that is 11 inches by 17 inches, also referred to B size paper by the American National Standard Institute.

- Tertiary colors

- are produced by mixing a primary and secondary colors. They are yellow-green, blue-green, red-orange, red-violet, yellow orange, and blue violet.

- Texture

- Providing surface variation by spacing and changing the direction of lines, which can create a sense of feeling visually.

- Thumbnail

- is a series of simple and rapidly drawn designs for a layout.

- Unity

- When all elements in a design are consistent and look as though they belong together.

- Value

- refers to the light or darkness of a color.

- Vector images

- are made up of lines and curves defined by mathematical objects. Vectors describe an image according to its geometric characteristics and can be filled with color. These images may be created with the use of a computer and may be changed in size without losing detail.

- Visual Communications

- refers to using visual images or graphic images to help convey an idea or thought.

- Visual Design
 - refers to the application of proper methods to produce a product that is both artistic and functional. This technique is very important in order to communicate the message effectively.
- White space
 - Area of a document that does not contain images or type. Also called negative space.
- Wysiwyg
 - acronym for “What you see is what you get” referring to the relationship of the printed piece versus the look on the electronic monitor of the computer
- Hexadecimal
 - six-digit number used in HTML, CSS, SCG and other computing applications to represent colors
- Roles of Video Production
 - Producer
 - The producer is the initial contact for the project. They talk with the client to arrange the high-level goals and expectations. It’s their responsibility to assemble the production team. The director typically comes first. From there, they put together the necessary crew members. The producer usually stays involved throughout the project lifecycle: pre-production, production and post-production.
 - Director
 - The director is typically the most involved person on and off set. They assist with assembling the right crew to get the job done. They make adjustments to the script to keep the video on budget and on time. They oversee all parts of the production. Questions get funneled up to them. And, when dealing with talent, the director should be the only one directing them. They oversee technical details as well, such as camera position, use of lighting and anything that effects the final product.
 - First Assistant Director (1st AD)

- The 1st AD is mainly responsible for scheduling on set. He wrangles talent, keeps the crew on time, and assists the director and producer. In some cases, the 1st AD also checks off the shot list, assuring lines are read as intended and the correct props are in the proper place.
- Director of Photography (DP)/Cinematographer
 - A DP and cinematographer are usually the same. Some insist that the cinematographer title only gets used when the DP is also the camera operator. Either way, the DP is in charge of the lighting as well as the camera. In some cases they work along side the lighting director. At 522, we tend to let the DP and lighting director work side by side to achieve the desired results. The DP is responsible for getting the exact look the director envisions. He's in charge of assembling the proper equipment to get the job done. This includes camera, rigs, lenses, filters, lights etc.
- Digital Imaging Technician (DIT)
 - A DIT is trained with the specific camera that is on set. They know how to manipulate color profiles to help execute the specific look needed. Often a DIT manages the media – and are also responsible for backing up cards. For most of our shoots, the DP/cinematographer serve as the DIT.
- Camera Operator
 - The camera operator operates the camera. Pretty straight forward, right? After choices have been made on color profile, exposure, and gear, the DP directs the operator with the specific framing and movements are needed.
- First Assistant Camera (1st AC)
 - The 1st AC is primarily responsible for pulling focus. On a typical 522 Production, the 1st AC may also be the camera operator. Along with pulling focus, our 1st AC is responsible for having batteries charged, media ready and even holding on to the camera between takes to give the DP or camera operator a break.

Now, let's look at the grip and electrical department.

- Lighting Director (LD)
 - For us, the LD (or sometimes gaffer) is responsible for coordinating the necessary lights needed in order to carry out the look of the film decided by the director and DP. He works directly with the director and DP to make sure the lights achieve the correct look. The LD uses a key grip, gaffers and even

production assistants to place lights and rig anything needed to complete the look.

- Gaffer

- A gaffer is the head electrician – the person on set responsible for executing the lighting plan for a production. They work closely with the Lighting Director and/or Director of Photography to make sure that the light hitting the subject or dressing the set is optimized.

- Key Grip

- The key grip rigs whatever is needed to get the lights in the proper place. They also set up flags, diffusion, etc. They also need to be aware of the scene's blocking to make sure the gear doesn't get in the way.

- Audio Technician

- On our shoots, the audio technician deals directly with the director and DP. They record audio as well as monitor and adjust levels. They often use a PA to help rig the audio.

- Set Designer

- A set designer is in charge of designing and creating the set for your production. They address all of the foreground and background elements, paying particular attention to ensure that the environment that the subject appears in matches the right look and feel of the video.

- Production Assistant

- Where most everyone starts out. The PA is more or less the assistant to everyone on set. They might grab gear, get lunch, take notes or do whatever else needs to be done. In some instances the PA may have the chance to help with the camera or lighting department. Although they are at the bottom of the food chain, a good PA is a must to keep things on schedule and maintain steam throughout the day.

- Codec

- an electronic circuit or software that compresses or decompresses digital video

- WAV

- audio file format is uncompressed and primarily used on PCs.

- Lead space

- impression of a person in the video is going to run into the edge of your camera frame

- Framing

- Extreme Wide Shot

- traditionally used as an establishing shot at the beginning of a video

- Very Wide Shot

- The VWS is much closer to the subject. He is (just) visible here, but the emphasis is still on placing him in his environment

- Wide shot

- In the WS, the subject takes up the full frame. In this case, the boy's feet are almost at the bottom of frame, and his head is almost at the top. Obviously the subject doesn't take up the whole width of the frame, since this is as close as we can get without losing any part of him. The small amount of room above and below the subject can be thought of as safety room — you don't want to be cutting the top of the head off. It would also look uncomfortable if the feet and head were exactly at the top and bottom of frame.

- MidShot

- The MS shows some part of the subject in more detail, whilst still showing enough for the audience to feel as if they were looking at the whole subject. In fact, this is an approximation of how you would see a person "in the flesh" if you were having a casual conversation. You wouldn't be paying any attention to their lower body, so that part of the picture is unnecessary.

- Medium Close Up

- Half way between a MS and a CU. This shot shows the face more clearly, without getting uncomfortably close.

- Close up

- In the CU, a certain feature or part of the subject takes up the whole frame. A close up of a person usually means a close up of their face.

- Extreme Close up

- The ECU gets right in and shows extreme detail. For people, the ECU is used to convey emotion

- Cutaway

- A cutaway is a shot that's usually of something other than the current action. It could be a different subject (e.g. these children), a CU of a different part of the subject (e.g. a CU of the subject's hands), or just about anything else. The CA is used as a "buffer" between shots (to help the editing process), or to add interest/information.



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- Script Formatting

- 1. THE SLUGLINE

- Each introduction of a scene appears on a single line (called the slugline) which contains the location information and time of day. Almost all sluglines begin with INT. (interior) or EXT. (exterior). There are very few exceptions except when either repeatedly cutting back to a scene or moving through locations within the principle location.
- For example: INT. BAR - NIGHT
 - If you have already introduced the BAR as a location you can simply use "BACK TO BAR" as a subsequent slugline. Or if you have introduced a HOUSE as a location and are writing a sequence in which a character moves through each room, you can use BEDROOM or LOUNGE as the slugline in order to maintain the flow of the sequence. SUPER can also be used to denote superimposed information, such as: SUPER: "Three years later" INTERCUT BETWEEN can be used as a slugline for a phone conversation after the location of each party is established with prior sluglines. INTERCUT: can also be used to achieve the same effect but as a TRANSITION. If in doubt, always begin sluglines with INT. or EXT. and end with DAY or NIGHT, unless a special time of day is dramatically essential, i.e. two lovers watching the sun rise: EXT. BEACH - SUNRISE.

- 2. THE SHOT

- A shot must not be confused with a slugline even though it appears in capital letters in a similar format. A shot focuses the reader's attention on something specific within the scene, such as a person or object.
- For example:
 - ANGLE ON JACK, C.U. ON GUN or JACK'S POV. Sometimes screenwriters use a shot to draw attention to something, then follow this with a little description and then write BACK TO SCENE and continue the main scene action.

○ 3. THE ACTION ELEMENT

- This appears immediately after your slugline, is preceded by one blank line and runs from left to right margin, spanning the full width of the text on the page. The Action sets the scene, describes the setting, and allows you to introduce your characters and set the stage for your story. Action is written in real time. Write cleanly and crisply what the audience sees on the screen. Only create atmosphere through "flowery" description if that atmosphere is essential to your scene, otherwise it is redundant and slows the script down. For example: If you're writing a horror and are introducing a haunted house, it is necessary to set the tone and so a few sentences of description adds to the reading experience. It also allows the reader to get a "real time" sensation as if watching the movie on screen. But if two characters are in the middle of a heated debate, keep action description to an absolute minimum in order to maintain the flow of the conversation and scene. When writing action, the best thing to do is to imagine you are having a conversation with someone over a coffee and recounting an interesting story. This way you only explain the key points that move the story along and do not focus on the irrelevant aspects. Try to write in small paragraphs, no more than four or five lines per paragraph, then double-spacing to the next paragraph. In fact, by isolating action and images in their own paragraphs, the writer suggests visual emphasis in the story; subliminally contributing to the visual direction. Capitalize a character name on introduction only and give them a specific age and gender. This information is critical for not only comprehension of the story, but casting and budgeting as well. Capitalize all major sound effects, avoid describing clothing or hairstyles, unless it's crucial to the story and do not write action in parentheses after a character name, i.e. GEORGE (lighting a cigarette). Also, try to avoid using the word "camera." Use "we" instead. For example: instead of "The camera follows..." use "We follow..."

○ 4. CHARACTER NAME

- This appears in caps, tabbed toward the center of the page and is followed by dialogue. A character name can be an actual name (JACK) or description (FAT MAN) or an occupation (DOCTOR). Sometimes, you might have COP #1 and then COP #2 speaking. It is okay to identify the speaking parts like this, but actors will like you more if you personalize their part with a name. Try to be consistent. Don't call a character JOE here and MR. JONES there.

○ 5. DIALOGUE

- This appears tabbed between the left margin (where sluglines and action are) and the character name margin. Writing good dialogue is an art in itself and sometimes novices tend to over-write it, making scenes slow, chatty and "play-like." Remember, people don't talk as formally as they write but on the other hand, keep slang and vernacular to a minimum and don't write out accents or regional dialects. Your dialogue should reflect the personality of each character and give an insight into them. Try to personalize dialogue from one character to the next (but don't over do it) so that the reader can distinguish between the key players in your story. Make it sound real and conversational, so that the audience feels like a fly on the wall, and try where possible to subtly express inner feelings or conflicts rather than using dialogue that's too "on the nose". People rarely say exactly what they mean. There is always subtext. Even when people are being candid, there's still subtext. Indicate the truth and let the audience fill in the gaps or read between the lines. This is far more interesting than being told outright what to think. For instance, in the Hollywood movie Jerry Maguire, Tom Cruise's character says "You complete me" rather than "I love you" to Dorothy and this was set-up earlier through an encounter with a young couple in love who used sign language. The key is to make the audience think where possible rather than handing everything to them on a plate, and this means being clever with your dialogue which sometimes may not even be necessary if the same sentiment or message can be expressed visually.

○ 6. PARENTHETICAL

- Parentheticals (or "wrylies") appear left indented (not centered) within brackets beneath the character name and are used to express an attitude for the actor who is speaking.. i.e. upset, crying, laughing, irritated, angry etc. Parentheticals should be short, to the point, descriptive, and only used when absolutely necessary.

○ 7. THE TRANSITION ELEMENT

- Scene transitions such as CUT TO: and DISSOLVE TO: are optional and when used should be right-indented (but not flush right) and preceded by one blank line and followed by two blank lines. When breaking pages, the scene transition must remain with the shot just completed. In other words, it is never permissible to start a new page with a CUT TO: or a DISSOLVE TO:. It must be placed at the bottom of the previous page. Transitions should be omitted if you are rapidly cutting between scenes, since inserting them would disrupt the flow of the sequence; such as in a montage or a chase through each room of a house. Transitions are primarily used to denote a major shift in time or location, and sometimes, like using MATCH CUT TO:, for effect.

- What is copyright?

- the exclusive legal right, given to an originator or an assignee to print, publish, perform, film, or record literary, artistic, or musical material, and to authorize others to do the same
- Which works are protected by copyright?
 - Copyright protects "original works of authorship" that are Fixed in "a tangible form of expression." The fixed form does not have to be directly perceptible so long as it can be communicated with the aid of a machine or other device. Copyrightable works fall into the following categories:
 - literary works (which includes computer software);
 - musical works, including any accompanying words;
 - dramatic works, including any accompanying music ;
 - pantomimes and choreographic works;
 - pictorial, graphic, and sculptural works;
 - motion pictures and other audiovisual works;
 - sound recordings; and
 - architectural works.

- Used as a substitute for purchasing work

- don't qualify under the "Fair Use" doctrine that allows limited copying of copyrighted works for educational and research purposes

- Fair Use

- legal doctrine that promotes freedom of expression by permitting the unlicensed use of copyright-protected works in certain circumstances
- Four factors

- purpose and character of your use
- the nature of the copyrighted work
- the amount and substantiality of the portion taken
- effect of the use upon the potential market
- percentage of a copyrighted songs may be used for educational purposes
- **MLA format for posting on twitter**
 - American U Library (AULibrary). "2015 winners of Library Research Awards. Don't miss your chance to win \$1k this year! #tbt <http://bit.ly/1XKYPBf>" 3 Mar 2016, 12:31 PM. Tweet.
- **Baroque Script**
 - best used for wedding related websites and logos because they are sophisticated and elegant
- **Grunge Design**
 - stylish design trend that gives web designs a less uniform, less structured, and more organic look-and-feel. It's characterized by textured/gritty backgrounds, uneven/torn edges, worn, faded and aged graphic elements inspired by urban and industrial architecture and scenery.
- **Packet Switching**
 - a method for effectively transmitting electronic data that would later become one of the major building blocks of the internet.
- **Standard Minimum character count for password**
 - 8