

5 – Creating Video & Animation

5.1 Video Basics

- CCD (Charge Coupled Device) – converts light to electric signals. 3 CCDs (for Red, Green & Blue) are needed for high quality broadcast.
- Interlacing – Each video frame on TV is drawn by 2 passes of the electron beam (one for odd numbered lines, the other for even numbered lines).

Broadcast Video Standards

- PAL – Phase Alternate Line
- SECAM – Sequential Color and Memory
- NTSC – National Television Standards Committee
- HDTV – High Definition Television

Analog & Digital Video

- Analog video is still the most widely used platform for TV sets.
- Digital video allows full integration of digital cameras with computers and storage media, both for recording as well as playback.

5.2 Shooting & Editing Video

- Shooting Platform – The purpose of this is to avoid shaking during filming and to steady the shot. Otherwise recording can appear shaky.
 - (eg. :- A tripod is a recording platform)
- Adobe Premiere is a very professional video editing tool which can also be used by amateurs.

5.3 Video Compression & File Formats

- MPEG – Moving Picture Experts Group
- AVI – Audio Video Interleaved
- MOV – QuickTime movie
- RM – RealMedia

5.4 Animation

- Causes of Animation
 - Persistence of Vision (continuation of chemical map on human retina)
 - Phi (human mind's need to complete a perceived action)
- Cel Animation – from Celluloid sheets used to draw each frame
- Tweening – the action of calculating the number of frames and paths of action between 2 keyframes and filling them

Animation

- Kinematics – study of movement and motion of structures with joints
- Inverse kinematics – defining the limits and relationships of objects
- Morphing – transformation of one image to another