

Digital Video Basics

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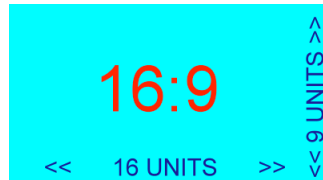
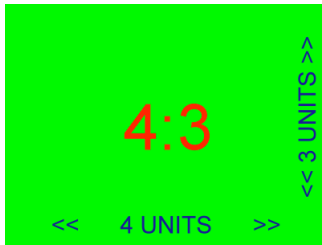
Digital Video Basics

- Frame rate
- Aspect Ratio
- Interlaced & Progressive video
- Standard Definition
- High Definition
- Codecs

Frame Rate

- The number of “pictures” used in one second of video
- Expressed as FPS (frames per second)
 - 30 fps - Standard Definition video
 - 24 fps - film
 - 60 fps - High Definition Video

Aspect Ratio



- The width of a video picture compared to its height
- Expressed as a ratio
- 4:3 - Television
- 16:9 - Widescreen

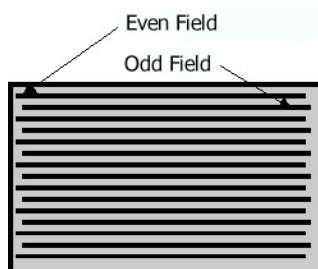


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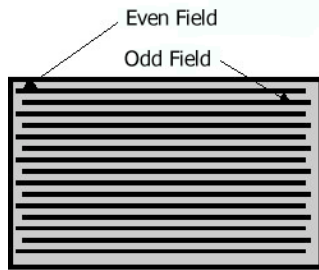
16:9

Interlaced Video

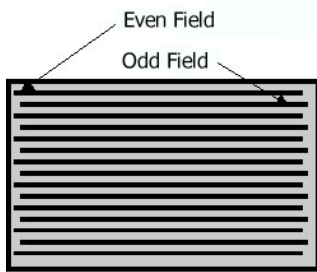


- The scanning method used in television where the video picture is scanned line by line beginning with the odd lines followed by the even lines
- This occurs every second

Progressive Video



- The scanning method used in HD television where the video picture is scanned line by line
- All lines are scanned every second



Standard Definition Video



- 720 X 480 pixels
- 30 FPS
- 4:3 Aspect Ratio
- Interlaced Video
- Stereo Audio 48KHZ, 16 Bit

High Definition Video



- 1920 X **1080**, 1280 X **720**, 640 X **480**
- 4:3 or 16:9 Aspect Ratio
- 24, 30, or 60 FPS
- Interlaced or Progressive video
- Stereo digital audio
48KHZ, 16 Bit
or 32KHZ, 12 bit

Codecs

- COder/DECoder
- Software that encodes and decodes video (and audio) into a specific format
- Can cause artifacts due to compression (removal of data)
- DV, MPEG-2, MPEG-4, AVCHD, H.264, etc.
- More on this later

Analog Video

- 8MM, VHS, VHS-C, S-VHS, Hi-8, BetaCam SP
- Video is tape based
- 250 (VHS) to 480 (Beta) lines of horizontal resolution
- 30i FPS, 4:3 aspect ratio, stereo analog audio



Camcorder Types



- Standard Definition
- High Definition Video (HDV)

Standard Definition



- 30(i), 720 X 480, 4:3, stereo audio
- Records to MiniDV tape, hard drive, DVD, or Flash Memory
- Note: MiniDV captures the highest quality and edits easily

High Definition Video



- 16:9, 1080i, Stereo Audio
- 60(i), 30(p), 24 (p) FPS
- Records to MiniDV, hard drive, or flash memory cards

Basic Production Workflow

- Pre-production
- Production
- Post-Production

Pre-Production

- Planning the shoot
- Script for narrative film or subject for documentary
- Location scouting
- Casting actors including auditions
- Props
- Additional gear rental
- Shooting schedule

Production

- Shooting to script or subject on location
- Shooting B-Roll (footage not involving actors or the subject that helps tell the story)
- Recording voiceover

Post-Production

- Capture digital video and other assets (e.g. still images, digital audio files, etc.) into Final Cut Pro or other digital video editing application
- Editing clips to tell the story
- Adding titling, music, visual effects, sound effects, etc.
- Export to a DV file (YouTube, VOD, etc.), DVD, or Blu-Ray

Basic All Digital Workflow

- Shoot digital video (standard or high def)
- Capture digital video in Final Cut Pro or other editing application
- Edit in Final Cut Pro
- Export digital video file in a specific codec
- Optional: create DVD or Blu-Ray

Basic Film/Digital Workflow

- Shoot film
- Digitize film (convert to digital video)
- Capture digital video in Final Cut Pro or other editing application
- Edit in Final Cut Pro
- Export digital video file in a specific codec
- Optional: create DVD or Blu-Ray

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