

INTRODUCTION TO AUDIO & VIDEO TECHNOLOGY

Directions: Complete these notes as you watch the MyCareerTech “Introduction to Audio & Video Technology” video.

Introduction

1. Audio technology and video technology are two distinct fields that involve the capture, processing, and reproduction of sound and visual images.
2. Audio technology is a field of technology that helps people collect, process, and reproduce sound.
3. Video technology is a field of technology that focuses on the capture, collection, processing, editing, and reproduction of visual images.
4. True / False: Audio and video production have differences and unique applications; they are not often used together to create content that combines sound and visual elements.

Sound and Light Waves

5. In audio technology, frequency measures the number of waves that pass through a point in a given amount of time and is measured in Hertz.
6. True / False: The higher the frequency of a sound wave, the higher the pitch of the sound will be.
7. In video technology, frequency is related to the frame rate of the video that is recorded.
8. Frame rate is the number of still images, or frames, that are displayed per second to create the illusion of motion.
9. Amplitude is a measure of the height of a wave from its resting position. What is it related to in audio technology?
Volume of the sound; Level of pressure produced by a sound wave
What is it related to in video technology?
Brightness of light; Intensity of the light wave
10. Amplitude is measured in decibels (dB) for audio and watts per square meter (W/m²) in video.
11. Wavelength is the distance between two consecutive points on a wave that are in phase, or at the same point in their cycle.
12. True / False: Shorter wavelengths produce higher pitches, while longer wavelengths are responsible for lower pitches.
13. Light waves with shorter wavelengths produce colors towards the blue end of the visible spectrum, while those with longer wavelengths produce colors towards the red end.

Tools and Equipment

14. Match the audio equipment to its description.

Equipment	Description
A. Microphones	C - Capture delicate sounds, voiceovers, and acoustic
B. Dynamic microphones	A - Capture sound waves
C. Condenser microphones	D - Record guitars and brass instruments

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- D. Ribbon microphones
- E. Mixer
- E - Control and manipulate audio signals
- B - Record vocals and live performances

- 15. Sound mixing is the technique of combining all the sounds that have been recorded and adjusting volume and equalization to create a harmonious final product.
- 16. Digital Audio Workstations (DAWs) are software programs used for recording, editing, mixing, and mastering audio.
- 17. Mastering is where an audio engineer listens to the entire project and makes final tweaks to the overall sound creating an audio master, or the final version.
- 18. Match the video equipment to its description.

Equipment	Description
A. Cameras	A - Capture visual images
B. DSLR camera	D - Designed for video, have built-in features
C. Mirrorless camera	B - Versatile with high-quality images
D. Video camera	C - Small and lightweight
E. Lights	F - Stabilize cameras
F. Tripod	E - Illuminate a subject during filming

Recording and Editing

- 19. When recording audio, choose the appropriate type of microphone, connect the microphone to a mixer or DAW, and adjust the levels.
- 20. When editing audio, import audio files into an audio editing software, trim and arrange the audio tracks, apply any effects, mix for a balanced sound, and make any final adjustments.
- 21. When recording video, choose the best camera for the subject, set up lighting and framing, and connect any audio equipment to the camera or audio interface. Then record, either directly on the camera or using a memory card.
- 22. Match the lighting equipment to its description.

Equipment	Description
A. Key Light	D - Circular light source placed in front of subject
B. Fill Light	C - Illuminate subject from behind
C. Backlight	B - Additional light sources, eliminate shadows
D. Ring Light	A - Main light source

- 23. Framing refers to the way you place or position the subject you're recording. This is essentially what the camera sees.
- 24. Begin editing video by importing the recorded video files into video editing software, trim and arrange video clips, add transitions or effects, and master any audio.

Reflection

- 25. How can the combination of sound and visual elements enhance the storytelling experience?
Student Free Response

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26. What careers in this industry might you be interested in? How can you apply your skills and knowledge in these roles?

Student Free Response