



FROM FOUR TRACKS TO BREAKBEATS: MUSIC AND TECHNOLOGY

GET READY TO ROCK! A PRE-VISIT GUIDE FOR TEACHERS

TARGET GRADE LEVEL:

Grades 5-8

CLASS DESCRIPTION:

Since the 1950s, rock and roll has been shaped by the craft and artistry of songwriters and performers who use innovative music technology to significantly impact the sound of music. In this class, we will see how Rock and Roll Hall of Fame Inductees have used technology to record, manipulate and create the ever-changing sounds of popular music. Students take part in in-depth discussions of the earliest tape recorders used by Jerry Lee Lewis at Sun Records and the break beat textures of Grandmaster Flash's DJ scratching. This class includes several live demonstrations in which students analyze the impact of music technology on a given sound. Don't miss this chance to gain insight into the world of music production in a variety of styles – from rock to hip-hop.

OBJECTIVES:

As a result of this class, students will be able to

1. Identify ways that artists have used recording technology capture live performances and to create the various components of musical sound.
2. Describe how the use of multi-track recording technology, the synthesizer, and sampling opened new avenues for experimentation with musical instruments, composition, and sound engineering.
3. Give examples of ways that a computer enables musicians to play, create, and store music on computers.

RELATED OHIO ACADEMIC CONTENT STANDARDS:

SCIENCE

Physical Sciences

5 Benchmark F

9-10 Benchmark G

Science and Technology

5 Benchmark A

6-8 Benchmark A

9-10 Benchmark A

FINE ARTS—MUSIC

Historical, Cultural and Social Contexts

5-8 Benchmark A, C

9-12 Benchmark B

Analyzing and Responding

5-8 Benchmark A, C

9-12 Benchmark D

Connections, Relationships and Applications

5-8 Benchmark B, D

9-12 Benchmark D

TECHNOLOGY

Nature of Technology

5 Benchmark A, C

6-8 Benchmark A, C

9-12 Benchmark A, C

Technology and Society Interaction

6-8 Benchmark C, E

9-12 Benchmark C

Technology for Productivity Applications

5 Benchmark A

9-12 Benchmark B

ENGLISH LANGUAGE ARTS

Communication: Oral and Visual

5-7 Benchmark A

8-10 Benchmark A

11-12 Benchmark A



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SUGGESTED PREPARATION ACTIVITY:

THE IMPACT OF COMPUTER TECHNOLOGY

Ask students to consider the ways that computer technology impacts our daily lives. Have students make a list of all the different computerized devices that they encounter during a typical day (cell phones, iPods, car navigation systems, television, data card readers, etc.). Discuss with the class how people use each of these tools and how our lives would be different without them. Students can also research the history of each of these technologies and present their findings to the class. Have students consider the impact that computer technology has had on the way musicians practice their craft – from composition to performance. Discuss how current trends affect both those who make music and those who listen to it.

EXAMPLES TO BE DISCUSSED IN CLASS:

NOTE: Preview all materials for appropriateness for your students.

Jerry Lee Lewis. "Whole Lot of Shakin' Going On." 1957.

The Beatles, "Tomorrow Never Knows." *Revolver*, 1966.

Kraftwerk. "Trans-Europe Express." *Trans-Europe Express*, 1977.

Depeche Mode. "Just Can't Get Enough." *Speak and Spell*, 1981.

Grandmaster Flash, "It's a Shame." *The Message*, 1982.

Free, streaming videos of most performances can be found on www.youtube.com or blip.fm

Free, streaming audio tracks of most songs can be found on www.grooveshark.com or blip.fm



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GLOSSARY

Acoustics: The science or physics of auditory vibrations, including the study of the physical basis of music.

Amplitude: The strength (or energy) of an oscillating, or vibrating, sound waveform that corresponds to the loudness of the sound

Disc Jockey (DJ): A person who presents and comments on popular music recordings, most often on the radio or in a dance club. In hip-hop, the DJ will often alter the sound of records played on a turntable by scratching, playing the break, or looping.

Frequency: A measurement of how often a recurring vibration of a sound wave occurs in a measured amount of time, commonly calculated in the number of "cycles per second" (recorded in Hertz or Hz); corresponds to the pitch of the sound

Hip-hop: A predominantly African-American cultural movement that developed in the Bronx, a borough of New York City, in the mid-1970s. The musical parts of hip-hop consisted of DJs playing breaks and scratching records on turntables with MCs rapping over the beats. The term is frequently used within mainstream media as a stylistic category for the music.

Magnetic Tape: A medium for recording sound generally consisting of a thin magnetizable coating on a long and narrow strip of plastic

Multitrack Recording: A method of sound recording that allows for the separate recording of multiple sound sources to create a cohesive whole. The various "tracks" are combined during playback. This can be achieved by using analogue tape machines or computer based digital recording devices.

Sampling: The process of recording a sound into digital memory by reading its level at precisely spaced intervals of time. The term also is used more generally to define any process of using a pre-recorded sound in a new musical composition.

Sound: A sensation produced by vibrations

Synthesizer: A device that creates sounds electronically through the use of voltage-controlled amplifiers and filters

Turntables: The most common device for playing recorded sound of records from the 1870s through the 1980s. Turntables and vinyl records remain popular for "scratching" in hip-hop music, though for recording use it has largely been replaced by the sampler or compact disc.

Volume: The element of music that describes the loudness or quietness of a sound; the aural perception of the amplitude of sound waves

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