



Teacher/Viewing Guide

Arab American Stories Episode 105

Brian and Leon Dewan

Co-Founders, Dewanatron

Grade Level 9-12

Episode Overview:

In this episode students hear the music and story of Dewanatron, a musical instrument company created and founded by cousins Brian and Leon Dewan. The cousins tell the story of how their curiosity about music and electronics as children led them to discover how to use electric circuits to first create sound, and later music. Leon shares his family history as the son of a Sephardic Jewish Lebanese immigrant who came to America seeking work. He went on to become an inventor of many different useful objects, including a roller skate brake and the Fizzmaster, which made seltzer water. Leon explains how he gained both skills and a spirit of invention from working as an apprentice to his father. His cousin Brian, an artist and musician, recalls family visits where his uncle and father were always talking about some new invention or idea. Brian and Leon demonstrate some of their musical instruments, including the Dual Primate Console, the Hymnotron, and the Swarmatron, which was used by Trent Reznor to compose the soundtrack for the film, THE SOCIAL NETWORK.

Previewing Questions:

1. What is music? Have you ever heard of electronic music?
2. Do you listen to any type of music that uses computer or electrically generated sounds?
3. Is it possible to create a new sound?

Vocabulary:

1. Electronic Music: Music that employs electronic musical instruments and electronic music technology in its production using a sound synthesizer, and computer. Today electronic music includes many varieties and ranges from experimental art music to popular forms such as electronic dance music.
2. Circuit: An electrical device that provides a path for electrical current to flow.
3. Audio Frequency: A type of oscillation capable of being perceived by the human ear, generally between 20 and 20,000 Hz.
4. Synthesizer: An electronic musical instrument, typically operated by a keyboard, producing a wide variety of sounds by generating and combining signals of different frequencies.

Lesson Overview/Review: After viewing the segment on Brian and Leon Dewan, students should be prepared to discuss the idea of electronic invention in America music and the concept of new types of music and sound.

Post-viewing Class discussion:

After viewing the segment, consider the following questions:

1. America is often known as a land of inventors. What is unique about America that makes us capable of having so many new inventions and innovations over the last two hundred years?
2. What did you think of the music and instruments of Dewanatron?
3. In the episode, Leon and Brian talk about using a calculator and a radio to make sound. Have you ever used technology in a different way? Have you ever disassembled technology to see how it works?

Teacher/Viewing Guide

Journal option: Ask students to respond to the following: Turn that down! Have your parents ever told you to “turn down that noise”? Is there music that you listen to that your parents, another adult, or even a friend, dislikes? Think of a time when someone has challenged your musical taste. Write a reflection on what type of music you listen to and why you like it. Be sure to include statements that reflect others’ criticism of your music, as well as your defense.

Activity: Now that students have heard some unusual music and sounds, they will have an opportunity to explore further, learn the science of music, and create some music of their own. First, work with students to define the following (there are web resources located below to assist you):

- The Components of Sound
- Sound Waves
- Structure of the Ear & Hearing
- Music (help students understand that music is anything that the ear perceives as pleasing and harmonious or with rhythm)

After students have a solid understanding of sound, sound waves, and hearing, they can explore how those sound waves exist in everyday objects as well as how synthesizers can create sounds their ear will hear as music. Have students go to: <http://www.exploratorium.edu/music/>. Using the dot mixer they will have a chance to use electrical sounds, much like the ones shown in the video, to create their own music. Students should work in groups to create a presentation that first demonstrates their understanding of sound, hearing, and the broad range of what we define as music, and then allows them to demonstrate the music they created either from the site or from another music generator.

Explore online: Use the following resources to allow your students to further explore the topic:

1. <http://www.youtube.com/watch?v=uuM4yBFI03E>
2. <http://www.youtube.com/watch?v=WmdVV5Ds3kU&feature=related>
3. http://www.newyorker.com/talk/2011/01/24/110124ta_talk_paumgarten
4. <http://www.dewanatron.com/music.php?page=past>

Interdisciplinary Options Science, Music, Career and Technology

National Science Standards Alignment

- Physics Goal 4: Waves, wavelength, frequency, and wave speed.
- Biology Goal 9: Physiology, how the nervous system mediates communication between different parts of the body and the body’s interactions with the environment, and the roles of sensory neurons, interneurons, and motor neurons in sensation, thought, and response.