Unit 08: Audio and Sound Control

Content Area: **Template**
Course(s):
Time Period: **Full Year**
Length: **FY**
Status: **Published**

Standards Alignment

New Jersey Student Learning Standards

	Key Ideas and Details
LA.K-12.NJSLSA.R1	Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
LA.K-12.NJSLSA.R2	Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
LA.K-12.NJSLSA.R3	Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
	Craft and Structure
LA.K-12.NJSLSA.R4	Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
LA.K-12.NJSLSA.R5	Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
LA.K-12.NJSLSA.R6	Assess how point of view or purpose shapes the content and style of a text.
	Integration of Knowledge and Ideas
LA.K-12.NJSLSA.R7	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
LA.K-12.NJSLSA.R8	Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
LA.K-12.NJSLSA.R9	Analyze and reflect on how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
LA.K-12.NJSLSA.R10	Read and comprehend complex literary and informational texts independently and proficiently with scaffolding as needed.
LA.RST.9-10	Reading Science and Technical Subjects
LA.RST.9-10.1	Accurately cite strong and thorough evidence from the text to support analysis of science and technical texts, attending to precise details for explanations or descriptions.
LA.RST.9-10.2	Determine the central ideas, themes, or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.
LA.RST.9-10.3	Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

LA.RST.9-10.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.
LA.RST.9-10.5	Analyze the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).
LA.RST.9-10.6	Determine the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.
LA.RST.9-10.7	Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
LA.RST.9-10.8	Determine if the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.
LA.RST.9-10.9	Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.
LA.RST.9-10.10	By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.
AAAA.K-12.2	Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.
AAAA.K-12.2.1	Skills
AAAA.K-12.2.1.1	Continue an inquiry- based research process by applying critical- thinking skills (analysis, synthesis, evaluation, organization) to information and knowledge in order to construct new understandings, draw conclusions, and create new knowledge.
AAAA.K-12.2.1.2	Organize knowledge so that it is useful.
AAAA.K-12.2.1.3	Use strategies to draw conclusions from information and apply knowledge to curricular areas, real-world situations, and further investigations.
AAAA.K-12.2.1.4	Use technology and other information tools to analyze and organize information.
AAAA.K-12.2.1.5	Collaborate with others to exchange ideas, develop new understandings, make decisions, and solve problems.
AAAA.K-12.2.1.6	Use the writing process, media and visual literacy, and technology skills to create products that express new understandings.
AAAA.K-12.2.2	Dispositions in Action
AAAA.K-12.2.2.1	Demonstrate flexibility in the use of resources by adapting information strategies to each specific resource and by seeking additional resources when clear conclusions cannot be drawn.
AAAA.K-12.2.2.2	Use both divergent and convergent thinking to formulate alternative conclusions and test them against the evidence.
AAAA.K-12.2.2.3	Employ a critical stance in drawing conclusions by demonstrating that the pattern of evidence leads to a decision or conclusion.
AAAA.K-12.2.2.4	Demonstrate personal productivity by completing products to express learning.
AAAA.K-12.2.3	Responsibilities
AAAA.K-12.2.3.1	Connect understanding to the real world.
AAAA.K-12.2.3.2	Consider diverse and global perspectives in drawing conclusions.
AAAA.K-12.2.3.3	Use valid information and reasoned conclusions to make ethical decisions.
AAAA.K-12.2.4	Self-Assessment Strategies
AAAA.K-12.2.4.1	Determine how to act on information (accept, reject, modify).

AAAA.K-12.2.4.2	Reflect on systematic process, and assess for completeness of investigation.
AAAA.K-12.2.4.3	Recognize new knowledge and understanding.
AAAA.K-12.2.4.4	Develop directions for future investigations.

Integration of Career Readiness, Life Literacies and Key Skills

CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP3	Attend to personal health and financial well-being.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP7	Employ valid and reliable research strategies.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP9	Model integrity, ethical leadership and effective management.
CRP.K-12.CRP10	Plan education and career paths aligned to personal goals.
CRP.K-12.CRP11	Use technology to enhance productivity.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.

Technology / Integration of Computer Science and Design Thinking

Interdisciplinary Connections: NJSLS for ELA, Social Studies, Science and/or Math Section

Integration of Diversity, Equity and Inclusion; Climate Change; Informational and Media LiteracyNew Section

see Crosswalks

21st Century Life and Careers

Stage I: Desired Results

Transfer/Overview/Rationale

Transfer / Overview / Rationale
Unit Rationale The purpose of this unit…

Meaning

Essential Questions

Essential Questions

How do microphones hear?

How well do microphones hear?

How are microphones made?

What are the different uses for various types of microphones?

How do wireless microphones work and in what situations are they used?

What are the faders, pots and buttons on the sound board used for?

What computer programs are used to create, mix and manipulate audio recordings?

What should sound aesthetics be considered before and during production?

Enduring Understanding/Indicators of Understanding

Enduring Understanding/Indicators of Understanding

Microphones transduce the sound we hear into electrical energy.

Microphones are classified by how well they hear.

Directional microphones have a specified pick-up pattern.

Microphones are also classified by how they are made.

Microphones can be categorized by how they are used in a production.

Wireless microphones are convenient and may be used indoors or outdoors.

All audio equipment requires the use of different types of connectors and adapters.

The soundboard can be used to amplify and control different audio sources.

Digital Audio recording and playback includes the use of different types of equipment and formats.

Computer programs can be used to synthesize sound.

There are five basic aesthetic factors of audio recording.

Acquisition (Student Learning Objectives)

Knowledge

Knowledge

Students will know…

Microphones transduce (transform) the sounds we hear into electric energy—the audio signal.

Omnidirectional mics can hear equally well from all directions; unidirectional, or cardioid, mics can best hear sounds that come from the front. Hyper- and supercardioid mics make faraway sounds that lie in the pickup pattern appear close to the mic.

Classified by how they are made, there are three types of mics: dynamic (the most rugged), condenser (high-quality but sensitive), and ribbon (high-quality and very sensitive).

Classified by how they are used, microphones can be divided into six types: small lavalier mics, which are clipped to the clothing of the performer; hand mics, which are carried by the performer; boom mics, which are suspended from a fishpole or a studio boom assembly; desk and stand mics, which are mounted on a tabletop stand or an adjustable floor stand; headset mics, which are worn by the performer and include earphones with a split audio feed; and wireless, or radio, mics, which broadcast the audio signal from a transmitter to a receiver. Treat all mics gently and test them before going on the air.

When using a camcorder, AGC (automatic gain control) must be switched to manual volume control to ensure acceptable sound. Verify that the audio connectors fit their respective jacks. Carry adapters but use them only in an emergency.

The mixer amplifies the incoming sound signals, controls the volume of each sound, and mixes (combines and balances) them in specific ways. A field mixer is small and normally has a maximum of four inputs. The audio console is much larger; it has many more inputs, each of which has a volume control and various quality and sound selection controls.

There are a great variety of digital audio recorders. They record on either hard drives or memory cards. Optical discs include read/write CDs (compact discs), and the higher-capacity DVDs (digital versatile discs).

Audio postproduction consists of sweetening, mixing various sound tracks, and creating new ones. The audio postproduction room contains a variety of sound equipment, most notably a digital audio workstation (DAW).

The sound waveform is a graphic representation of the dynamics of various sounds as they progress in time. It facilitates

sound editing.

Once sounds are in digital form, you can manipulate them with computer software. Computerized sound equipment, such as the keyboard, can create—synthesize—its own sounds.

The basic aesthetic factors that can help you achieve an effective audio/video relationship are context, figure/ground, sound perspective, continuity, and energy and mood.

Skills

Skills

Student will be skilled at …

understanding the sound pick-up principal.

understanding the characteristics of a mic.

the different mechanics of microphones.

using different microphones in production situations.

using a 36 channel sound board.

post-produciton sound editing.

Stage 3: Learning Plan

Resource and Mentor Texts

Resources and Mentor Texts

Video Basics 7th Edition

Audio-Technica microphones

Formative Assessment Strategies

Formative Assessment Strategies

Chapter Test

TV2Ch8AudioTst.doc

Learning Activities/Unit of Study

Learning Activities/Unit of Study

Reading and annotating Video Basics Chapter 7

Using and hooking up microphones

Modifications and/or Accommodations

Suggested Modifications (ELL, Sp. Ed, GIfted, At-risk of Failure)

English Language Learners

Native language support: The teacher provides auditory or written content to students in their native language.

Adjusted Speech: The teacher changes speech patterns to increase student comprehension. This could include facing the students, paraphrasing, clearly indicating the most important ideas, and speaking more slowly.

Visuals: The teacher uses graphics, pictures, visuals, and manipulatives. This helps ELL students better understand and comprehend the subjects at hand.

Front-Loading Vocabulary: The teacher front loads vocabulary. This means providing students with a list of important vocabulary words they will need to know for a book, lesson, etc. prior to the lesson being taught. Including pictures to go with the vocabulary words is also very beneficial for the students.

Special Education Students

Chunking: The teacher presents information in a way that makes it easy for students to understand and remember. Chunking is based on the presumption that our working memory is easily overloaded by excessive detail. The best way to deliver information is to organize it into meaningful units. Because students with special needs get overloaded easily, chunking is an effective strategy to use with them.

Checking for Understanding: It is important to constantly check for understanding, especially for students who have accommodations. Teachers want to make sure students understand the concepts being covered in a way that makes sense to them.

Extra time: The teacher provides students with special needs extra time to complete work or answer questions. It is important to give students enough time to process their thoughts.

Oral Reading: The teacher will read work orally to students. Class work such as tests and literature circles may need to be read aloud to the student.

Timers: The teacher will use timers as an instructional tool. The use of timers is beneficial for students who have trouble completing tasks. Timers can be helpful so the student is aware of how much time they have to complete an assignment.

Students with 504 Plans

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Gifted & Talented Strategies

Extensions/Enrichments: Teachers will provide gifted and talented students with extension/enrichment projects. Students will be challenged to further their understanding, to apply acquired knowledge, and/or to produce something in reference to acquired knowledge.

Modify/Change Activities: Teachers will monitor and modify activities to accommodate those students who need to be challenged further. Additional reading, problem-solving, writing, or project work is necessary for those students who are ready to move on at a rate more accelerated than their peers. In this way, G & T students are provided the same opportunity for support as special needs students.

Students at Risk of School Failure

Directions or Instructions: Make sure directions and/or instructions are given in limited numbers. Give directions/instructions verbally and in simple written format. Ask students to repeat the instructions or directions to ensure understanding occurs. Check back with the student to ensure he/she hasn't forgotten.

Peer Support: Peers can help build confidence in other students by assisting in peer learning. Many teachers use the 'ask 3 before me' approach. This is fine, however, a student at risk may have to have a specific student or two to ask. Set this up for the student so he/she knows who to ask for clarification before going to you.

Alternate or Modified Assignments: Always ask yourself, "How can I modify this assignment to ensure the students at risk are able to complete it?" Sometimes you'll simplify the task, reduce the length of the assignment or allow for a different mode of delivery. For instance, many students may hand something in, the at-risk student may jot notes and give you the information verbally. Or, it just may be that you will need to assign an alternate assignment.

Increase One to One Time: When other students are working, always touch base with your students at risk and find out if they're on track or needing some additional support. A few minutes here and there will go a long way to intervene as the need presents itself.

Contracts: It helps to have a working contract between you and your students at risk. This helps prioritize the tasks that need to be done and ensure completion happens. Each day write down what needs to be completed, as the tasks are done, provide a checkmark or happy face. The goal of using contracts is to eventually have the student come to you for completion sign-offs.

Hands On: As much as possible, think in concrete terms and provide hands-on tasks. This means a child doing math may require a calculator or counters. The child may need to tape record comprehension activities instead of writing them. A child may have to listen to a story being read instead of reading it him/herself.

Tests/Assessments: Tests can be done orally if need be. Break tests down in smaller increments by having a portion of the test in the morning, another portion after lunch and the final part the next day.

Seating: Seat students near a helping peer or with quick access to the teacher. Those with hearing

or sight issues need to be close to the instruction which often means near the front.