

# Unit 2: PA Systems for Small-scale Live Sound Reinforcement

Content Area: **Fine and Performing Arts**  
Course(s): **Music Tech III**  
Time Period: **September**  
Length: **1**  
Status: **Published**

## Unit Overview:

---

This unit focuses on preparing students to design and setup sound systems for various situations. Students will expand their knowledge of microphone use and how to incorporate different microphone setups into a live sound system. Students will also explore speaker arrays, "Speaker math" in reference to Ohm's Law and load issues with speakers and amplifiers, as well as how to run all sound through both analog and digital systems.

## Enduring Understandings:

---

A performer's knowledge of live audio production must be reflected in their selection of equipment (gear) and its handling (maintenance).

Accepting a job to perform in a live venue requires a knowledge of what gear is expected to be provided by the host and what is expected to be provided by the performer.

## Essential Questions:

---

As a performer, how might you go about selecting the gear appropriate for your performance? What factors contribute to your decision?

## Standards/Indicators/Student Learning Objectives (SLOs):

---

MU.9-12.1.3E.12prof.Cr2	Organizing and developing ideas.
MU.9-12.1.3E.12prof.Cr3	Refining and completing products.
CAEP.9.2.12.C.7	Examine the professional, legal, and ethical responsibilities for both employers and employees in the global workplace.

## Lesson Titles:

---

- Selecting Your Console

- What is a PA System?
- Designing Your Rig
- Digital versus Analog
- Ohm's Law ("Speaker Math")
- Passive versus Powered monitors
- What is "unity" and why is it important?

## **Career Readiness, Life Literacies, & Key Skills**

---

TECH.9.4.12.CI.2	Identify career pathways that highlight personal talents, skills, and abilities (e.g., 1.4.12prof.CR2b, 2.2.12.LF.8).
TECH.9.4.12.CI.3	Investigate new challenges and opportunities for personal growth, advancement, and transition (e.g., 2.1.12.PGD.1).

## **Inter-Disciplinary Connections:**

---

CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CAEP.9.2.12.C.4	Analyze how economic conditions and societal changes influence employment trends and future education.

## **Instructional Strategies, Learning Activities, and Levels of Blooms/DOK:**

---

- Levels 1-4 in the DOK will be used.
- Timed setup drills

## **Modifications**

---

- Video content via Classroom
- Additional materials
- Extra time

## **ELL Modifications:**

---

- Choice of test format (multiple-choice, essay, true-false)
- Continue practicing vocabulary

- Provide study guides prior to tests
- Read directions to the student
- Read test passages aloud (for comprehension assessment)
- Vary test formats

### **IEP & 504 Modifications:**

---

- Allow for redos/retakes
- Assign fewer problems at one time (e.g., assign only odds or evens)
- Differentiated center-based small group instruction
- Extra time on assessments
- Highlight key directions
- If a manipulative is used during instruction, allow its use on a test
- Opportunities for cooperative partner work
- Provide reteach pages if necessary
- Provide several ways to solve a problem if possible
- Provide visual aids and anchor charts
- Test in alternative site
- Tiered lessons and assignments
- Use of a graphic organizer
- Use of concrete materials and objects (manipulatives)
- Use of word processor

### **G&T Modifications:**

---

- Alternate assignments/enrichment assignments
- Enrichment projects
- Extension activities
- Higher-level cooperative learning activities
- Pairing direct instruction with coaching to promote self-directed learning
- Provide higher-order questioning and discussion opportunities
- Provide texts at a higher reading level
- Tiered assignments
- Tiered centers

### **At Risk Modifications**

---

- Additional time for assignments

- Adjusted assignment timelines
- Agenda book and checklists
- Answers to be dictated
- Assistance in maintaining uncluttered space
- Books on tape
- Concrete examples
- Extra visual and verbal cues and prompts
- Follow a routine/schedule
- Graphic organizers
- Have students restate information
- No penalty for spelling errors or sloppy handwriting
- Peer or scribe note-taking
- Personalized examples
- Preferential seating
- Provision of notes or outlines
- Reduction of distractions
- Review of directions
- Review sessions
- Space for movement or breaks
- Support auditory presentations with visuals
- Teach time management skills
- Use of a study carrel
- Use of mnemonics
- Varied reinforcement procedures
- Work in progress check

## **Alternative Assessments**

---

Performance tasks

Project-based assignments

Problem-based assignments

Presentations

Reflective pieces

Concept maps

Case-based scenarios

Portfolios

## **Benchmark Assessments**

---

Skills-based assessment

Reading response

Writing prompt

Lab practical

## **Formative Assessment:**

---

Questioning

Exit Tickets

Assignments

## **Summative Assessment:**

---

- Students will design a live audio rig for a performance venue provided by the instructor. They will then setup the audio rig to demonstrate application ability.

## **Resources & Materials:**

---

- ASSR Curriculum
- Behringer X32 Air Wireless Mixer
- Yamaha MG10XU Analog Mixer
- Yamaha MG20XU Analog Mixer