
***Activity Resource
Management Document***

**Grade 11
TGJ3M Communications Technology
(University/College Destination)**

**Unit 2, Activity 3:
Audio in the Studio: principles of sound,
equipment, and storage**



*This Activity Resource Management Document (ARMdoc)
was produced by the Ontario Council for Technological Education (OC TE)
to supplement the Ministry of Education's Grade 11 Course Profiles.
It may be used in its entirety, in part, or adapted.*

Activity Resource Management Document



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(Safety sheets to be inserted from separate Safety Resource Pack)

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TGJ3M Communications Technology

UNIT 2 ACTIVITY 1.3***Audio in the Studio: principles of sound, equipment, and storage******Activity Description (from Course Profile)***

Time: 330 minutes (5.5 hours)

This activity introduces students to the theory, equipment, and techniques of audio processing for television broadcasting or video production within a studio. By concentrating on the practical aspects of sound pickup, mixing, and recording, students gain an understanding of the nature and uses of sound sources. Throughout this activity, students demonstrate individual and cooperative learning and planning skills, knowledge of audio theory, safety, equipment, and techniques applicable to a studio production. A clear understanding of and adherence to the safe handling of audio and related equipment is stressed.

Activity Resource Management Doc (ARMdoc) Contents

Teacher Resource Pack (TRP)	Pre-planning Notes, Expectations by Category, Activity Deliverables, Instructional Aid Sheets, Terminology List, Career Information
Student Project Brief (SPB)	Project Brief, Assessment/Evaluation Checklists and Rubrics, Activity Log
Safety Resource Pack (SRP)	Safety Information (Technology Lab Safety Passport)

This Activity Resource Document (ARMdoc) was produced to supplement the Ontario Ministry's Grade 11 Course Profiles. These profiles can be found at:

<http://www.curriculum.org/occ/profiles/profiles.htm>

ARMdocs for several Technological Education profiles can be found at:

<http://www.octe.on.ca>

The Technological Education policy documents can be found at:

<http://www.edu.gov.on.ca/eng/document/curricul/seccurr.html>

Pre-activity Planning Notes

Teachers need to be familiar with the principles of sound, electrical principles, sound recording, cabling and electrical safety. See Resources for text and website information.

Photocopy and prepare student notes. Lessons are easily adapted for overheads or as web page format. Prepare according to selected method of delivery.

Introduce levels of achievement through rubrics and possibly via exemplars if they are developed. Review any exemplars you may have on hand. Exemplars for future assessments should be retained as an ongoing endeavour. Remember to look at the current semester's work for an example of each category level.

Teachers need to cover electrical safety issues associated with the use of equipment in the lab. This activity would require as a minimum an inexpensive microphone, a recording device, (this could be video cassette, audio cassette or computer system equipped with sound board and audio recording studio software). A small audio mixing board would be a useful addition to complement this activity. Also, an oscilloscope would be useful to demonstrate sound waves. Consult your science department for any apparatus used in their discussions of sound as a reinforcement of theory of sound. Teachers need to have related storage medium on hand. i.e. video-cassette tapes, audio cassette tapes, CD's. Computer workstations should have an Internet access as well.

There is possibility of using the activity as a small group activity. Individuals can engage in assisting each other in activities. A portion of the activity could be used to assess learning skills with respect to peer collaboration. Designate some quiet areas for students to complete the activity. Note: If restricted by space, activity could run concurrent with other activities in the unit and students would then rotate through this particular activity workspace.

Professional quality work can be introduced as a means of giving students an idea of what results can be obtained. Look at the possibility of having someone from the broadcasting industry (e.g. local radio) visit the classroom as a guest speaker. A student enrolled at the local college or a college representative may also provide insight into the industry and enable students to have a glimpse at career possibilities.

Expectations by Category (from Course Profile)**Knowledge**

- TFV.02 identify and describe the components and processes that make up each of the following: electronic, live, recorded, and graphic communications;
- TFV.03 explain how basic communications systems function and describe the knowledge required to manage a range of communications systems;
- TFV.04 describe industry standards, regulations, and formats that apply to communications technology;
- TF2.01 explain the basic electronic communications system (how energy is converted into an electrical signal, amplified, transmitted by physical or atmospheric channels, decoded, and converted to sound);
- TF2.03 explain how electricity and magnetism form the basis for audio and video communications;
- TF2.04 demonstrate a working knowledge of amplification and signal processing;

Inquiry

- TF2.05 identify the advantages of various formats for specific applications;
- TF2.07 evaluate component properties and select the most appropriate components for a particular process;
- TF3.02 research appropriate production techniques and recommend processes that adhere to industry standards;
- TF3.03 select the appropriate formats for electronic, live, recorded, and graphic productions;
- SP1.03 demonstrate the time management and problem-solving skills required to complete projects;

Communication

- SP4.03 use terminology that is recognized by the communications industry.

Application

- SPV.03 set up, operate, and maintain a communications system and analyze its efficiency.
- SP2.01 set up and correctly operate the equipment and accessories required to create and modify environments for communications productions (e.g., video and audio editing suites, desktop publishing configurations, live and recorded productions, electronic communication systems, websites);
- SP2.03 operate control devices and components to manipulate or create communications technology projects;

Assessment/Evaluation

Students will be assessed and evaluated on the following deliverables. See the Student Project Brief for assessment/evaluation instruments.

	Deliverable	Notes	Suggested Time (hr)
1	Assignment on Sound	Individual	1
2	Project Proposal (incl. script)	Individual	1
3	Project Final Script	Team	1
4	Final Recorded Product	Team	2
5	Project Summary and Technical Report	Individual	0.5

Terminology List

Alternating Current:	electric current that changes polarity at fixed intervals of time
Ampere:	electrical current's unit of measure
Analog:	real time signal. Continually varies with time.
Analog to Digital Converter:	converts real time signals to digital (on/off) format for use in logic circuits and within computer software routines
Audio Signal:	electrical signals originated as real world audible sounds
Audio Technician:	any person who can operate, trouble shoot and connect any equipment used to broadcast sound.
Binary:	base two number system generally used to represent computer data. The data is on/off signals represented by the binary numbers 1 and 0 respectively.
Brainstorming:	method used by individuals or groups which involves generating many possible solutions or ideas relating to a problem or a design project.
Cabling:	wires used to interconnect audio equipment.
CD-ROM:	compact disk-read only memory. It is a digital data, large capacity, storage device. Data can only be read (therefore data cannot be added/deleted or edited on the disk)
Current:	the movement of electrons in a conductor
Decibels:	the unit used for measuring the level or loudness of any given sound. Based on a logarithmic scale.
Digital Signal:	a two-state signal of on and off.
Digital to Analog Converter:	converts digital signals to real time signals.
Direct Current:	electric current that flows in one direction. Polarity is maintained in direct current, also referred to as D.C.
Electromagnet:	a magnet created by passing electric current through a coil of wire. Most electromagnets used a metal core.

Electromagnetic Induction:	the creation of electrical current in a conductor (wire) by simply passing the conductor through a magnetic field.
Frequency Modulation:	transmitting radio signals by using a carrier wave. In this method wave frequency varies while wave amplitude remains the same.
Frequency:	the number of complete wave cycles per second
Hertz:	the unit of measure for wave frequency. It is measured in cycles per second.
Magnetic Recording:	a method of recording sound. Real world signals are first converted to electrical signals which are then recorded as variations in magnetism of a metallic coated tape.
Microphone:	a device used to convert sound waves into electrical signals which vary according to original sound wave.
Oscilloscope:	a device used to measure the frequency and amplitude of an electrical signal.

Reference Resources

Books

Sanders, Mark. *Communications Technology Today and Tomorrow*. Peoria, Illinois: Glencoe, McGraw-Hill, 1991. ISBN 0-02-838759-7 (Student Text) ISBN 0-02-838760-0 (Student Workbook) ISBN 0-02-838761-9 (Teacher's Resource Binder)

Johnson, Charles D. *Communication Systems*. The Goodheart-Willcox Co. Inc, 1992. ISBN 0-87006-961-6

The Sanders book contains a section describing audio and video systems. The section is divided into the areas of audio/video principles, equipment and applications. There are many good descriptions of how these systems work. The Johnson book contains a section devoted to electronic communication. In this section a chapter dealing with communicating by sound gives you excellent background knowledge that deals with the theory and application of the material in this unit.

Websites

Search keywords: sound, decibels, safe level, audio, microphone, sound waves
occupational health & safety, electromagnetism, ohm's law

Film Sound Theory –
<http://hem.passagen.se/filmljud/filmsound.htm>

An excellent paper written by Dr. Fred Ginsburg C.A.S. Ph.D. The paper covers sound production as it relates to video and motion pictures.

AV Avenue –

<http://www.avavenue.com>

A good source of information on a wide range of technical topics related to audio/video production, on-line articles, and equipment information.

Digital Imaging Magazine –

<http://www.digitalimagingmag.com>

A good source of digital video/editing on-line articles, links to user groups, and equipment information.

New Media.pro Magazine –

<http://www.newmediapromagazine.com>

A good Canadian source of digital video/editing on-line articles, links to user groups, and equipment information.

Videomaker Magazine –

<http://www.videomaker.com>

A good source of video/editing on-line articles, links to user groups, and equipment info.

Video Systems Magazine –

<http://www.videosystems.com>

A good source of video/editing on-line articles, links to user groups, and equipment info.

Coolmath.com –

<http://www.coolmath.com/decibels1.htm>

This website has a list of decibel levels for common everyday sounds.

Lesson Plan # 1: Principles of Sound

Topic: Theory of Sound

Expectations: Students will:

- define sound
- describe how sound is measured
- describe safe levels of sounds
- identify common sounds and how they relate to the decibel scale
- become familiar with signals and signal frequency
- identify the frequency range for human hearing
- describe a method of converting sound waves to electrical signals

New learning:

- Sound and how it is measured (Db)
- Sound and safety in the workplace
- Signal frequency and its unit of measure (Hz)
- Electrical fundamentals (Ohm's Law)
- Transducers

Materials and equipment:

- Overheads of lesson (could also be chalkboard lesson or In a web page format).
- Handout of student assignment
- Overhead Projector or LCD projector or use of computer lab
- Oscilloscope and microphone
- Tuning fork and block of wood

Lesson questions:

- 1) What is sound? How is it measured?
- 2) What is frequency? What is the unit for frequency?
- 3) What is range of sounds waves that can be heard by humans?
- 4) How can sound waves be converted to electrical signals?

Lesson closure:

- Teacher reviews the theory of sound and electrical fundamentals .
- Students can begin working on assignment dealing with theory of sound.
- Introduction of activity for this unit.

Assignment Problems:

The following is a series of questions that may be used to generate an assignment for the students. The assignment questions are broken into the categories of

1) Knowledge/Understanding 2) Thinking/Inquiry 3) Application 4) Communication

KNOWLEDGE/UNDERSTANDING

1. What is sound?

2. How is loudness of sound measured?
3. What level of sound can impair human hearing?
4. What is frequency? What is the unit used to measure frequency?
5. Describe how current relates to voltage and resistance in an electric circuit.
6. What is electromagnetism?
7. Describe a method used to convert sound to an electrical signal.
8. Can sound be transmitted in outer space? Explain why.
9. Can the damage known as hearing loss be reversed?
10. What measures are in effect in the workplace to prevent hearing loss?

THINKING/INQUIRY

1. Create a chart to show the decibel level range that you are subject to in a given day. Report on any dangers that may exist to your hearing. Explain how some safety precautions can be used to reduce the risk.
2. Explain why a tuning fork generates a louder sound when pressed against a piece of wood. How can this help someone to tune an electric guitar?
3. Ultrasound is beyond the human hearing range. Ultrasounds are used by bats to navigate. They are also used in SONAR (sound navigation and ranging), by doctors in ultrasound imaging, and dentists as a method of cleaning teeth. Show by means of a mathematical formula or in a concise explanation how ultrasounds can be used to detect a large box resting against a wall.

APPLICATION

1. Build a simple electromagnet.
2. Build a conventional string and can communication system. Add some type of improvement to the system.

COMMUNICATION

1. Present a short story to the class and enhance the story by using sound effects. This can be completed in pairs or small groups.
2. Create a list of topics that relate to sound. Have students conduct research on the topic and present their findings to the class. Presentations should be short lasting 2 – 4 minutes.

Lesson Plan # 2: Study of Basic Communication System

Topic: Communication Systems

Expectations: Students will:

- define communication
- identify the five purposes of communication
- describe a basic communication system
- describe the importance of feedback

New learning:

- five purposes of communication
- a communication system model
- feedback

Materials and equipment:

- Overheads of lesson (could also be chalkboard lesson or in a web page format).
- Handout of student assignment
- Overhead Projector or LCD projector or use of computer lab

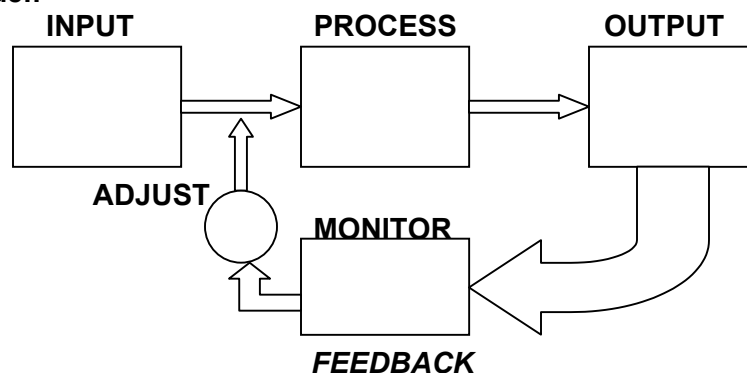
Lesson questions:

- 1) What are the five purposes of communication and show examples?
- 2) How does a communication model work ? (use real world examples)
- 3) What is feedback?

Lesson closure:

- Teacher reviews the five purposes of communication .
- Class discusses examples of real world communication models.
- Class discusses need for and examples of feedback.

Communications Model:



Assignment Problems:

The following is a series of questions that may be used to generate an assignment for the students. The assignment questions are broken into the categories of

- 1) Knowledge/Understanding
- 2) Thinking/Inquiry
- 3) Application
- 4) Communication

KNOWLEDGE/UNDERSTANDING

1. What are the five purposes of communication?
2. Draw a block diagram of a basic communication model and label each part.
3. What is feedback?
4. Why is feedback critical to a communication system?

THINKING/INQUIRY

1. Generate a list of real world communication systems (e.g. Driving your automobile at a given speed, a telephone conversation, a radio broadcast)
2. Have students show how the communication model applies to the real world system.
3. Use your everyday routine as a basis,
4. Describe how the five purposes of communication impact on you each day. Use plenty of examples.

APPLICATION

1. Using the communication model, apply it to the community distribution of the school newspaper. Use the model to determine the success of the paper.
2. The power of persuasion. Have students collect 5 different advertisements (can be found in magazines or flyers) and report on the effectiveness of each ad.

COMMUNICATION

1. Conduct short debates in the classroom using current news issues as topics
2. Have students work in pairs or small groups and give a short news reports. Students should report current events, weather, sports etc.

Lesson Plan # 3: Audio in the Studio

Topic: Audio Production

Expectations: Students will:

- describe basic audio recording techniques
- describe and use equipment related to audio recording and mixing
- recognize how to use audio equipment safely

New learning:

- methods of recording audio signals
- proper and safe use of audio equipment

Materials and equipment:

- Audio recording equipment (tape, compact disk or other computer storage)
- Handout student project assignment
- Audio cabling
- Sound mixer board(s)
- Microphones
- Sound effects (computer driven or other)

Lesson questions:

- 1) What are the three known methods of storing sound?
- 2) What precautions should be taken using audio equipment?
- 3) What is the purpose of a sound mixer?

Lesson closure:

- Teacher reviews the methods of recording and storing sound.
- Class discusses safe use of audio equipment.
- Class discusses use of audio equipment for major activity.

Suggested Test Questions

Knowledge

1. Describe the properties of an electric circuit.
2. Which property of an electric circuit is associated with fatality?
3. Name the unit of measurement for sound.
4. What level of sound can result in hearing loss?
5. What typical range of sounds are audible to human ears?
6. Draw and label a block diagram of a communications system.
7. Describe a simple method for making an electromagnet.
8. How does frequency affect sound?
9. What is distortion?
10. Use a diagram to show the difference between alternating and direct current.
11. Name three(3) methods of storing sound.
12. What is an amplifier?
13. What is a patch board?
14. What does an audio mixer do?
15. Why are speakers classed as woofers, mid-ranges and tweeters?
16. How is sound recorded onto magnetic tape?
17. Why is sound degradation not a factor on compact discs?
18. What type of connector is most often used for home audio systems?
19. What is stereo sound?

Thinking and Inquiry

20. Show by way of a diagram how 4 musicians can be input into an amplifier with each musician's sound level controlled individually but by one sound technician.
21. Describe any method which may help in reducing distortion.
22. Which devices in your home run strictly on AC and which devices run by converting AC to DC.
23. How does the laser pick up information from a compact disc? What can possibly fail in this type of system?
24. What does an analog to digital converter do? Describe three (3) systems that make use of A/D and D/A technology.
25. Name several microphone types and describe where they may be useful.

Career Information

TGJ3M Communications Technology

UNIT 2 ACTIVITY 1.3

Audio in the Studio: principles of sound, equipment, and storage

Career Information Sites:

Human Resources Development Canada: National Occupational Classification Database-

<http://www.hrdc-drhc.gc.ca/noc>

HRDC NOC Search Engine-

<http://www.worklogic.com:81/noc/Query.htm?lang=e>

Ontario Prospects: geared to young people and students

<http://www.edu.gov.on.ca/eng/general/elemsec/job/prospect/eng/index.html>

Job Futures 2000: what's hot, what's not

<http://www.hrdc-drhc.gc.ca/JobFutures>

Job Profiles: real people profile their jobs

<http://www.jobprofiles.org/index.htm>

Canada WorkInfoNet: national and regional market info

<http://www.workinfonet.ca>

Ontario Association of Certified Technicians and Technologists

<http://www.oacett.org/>

Association of Professional Engineers

<http://www.apegga.com>

The following activity related careers are described in the Human Resources Development Canada (HRDC) National Occupational Classification (NOC) database. Use the search engine link above to learn the main duties performed by practitioners of each trade, the education requirements for the position, and related occupations.

5131 Producers, Directors, Choreographers and Related Occupations

5222 Film and Video Camera Operators

5224 Broadcast Technicians

5225 Audio and Video Recording Technicians

5226 Other Technical and Coordinating Occupations in Motion Pictures, Broadcasting and the Performing Arts

NOTE: this project is related to a variety of other occupations, including communications technologist, instrument technician, sonar technician, audio tester, electrical technician, electrical technologist, electronic technician, electronic technologist.

Student Project Brief

TGJ3M Communications Technology

UNIT 2 ACTIVITY 1.3

Audio in the Studio: principles of sound, equipment, and storage

Contents:

1. Project Brief Handout
2. Audio Project Checklist
3. Audio advertisement Report Format
4. Scripting Rubric
5. Audio Production Rubric
6. Activity Log

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Title:	Audio in the Studio: principles of sound, equipment, and storage		
Activity:	Produce a 30 second audio advertisement	Course:	TGJ3M Communications Technology
Time Req'd:	5.5 hours	Date:	
RATIONALE			
<p>Communications technology is at the forefront of our economic infrastructure. Careers in communications lead the job market and can be very interesting and rewarding. This activity will introduce you to sound theory and will enable you to develop skills in audio production. The ability to record sound is important to a wide variety of careers in film and video production, video and audio broadcasting and theatre, concert or special events productions.</p>			
THE ASSIGNMENT			
<p>You will use a variety of sound recording techniques in the scripting, recording, mixing and editing of a 30 second audio advertisement suitable for radio broadcast. This recording will incorporate 3D sound (farther sounds recede into background) and a variety of sound sources.</p>			
LEARNING EXPERIENCE: You will:			
<ol style="list-style-type: none"> 1. Use audio equipment in a safe and proper fashion. 2. Learn methods of incorporating sound effects and techniques. 3. Learn how to store your message using a variety of audio recording techniques. 4. Explore ways to reach a target audience with an audio advertisement. 5. Create a script for a 30 second audio advertisement. 			
TOOLS AND MATERIALS			
<p>Computers and associated equipment for word processing, microphones, audio mixer (if available), audio or video cassette recorder or sound card for computer with adequate hard drive space for recording, proper audio cabling, sound effects generator (optional), appropriate tapes for storage and any adapters required for cabling.</p>			
NOTES			

EVALUATION				
No.	Deliverable	Time Limit (periods)	% Weight	Notes
1	Script	1	25	Full script of audio recording
2	Final Audio Recording	2	50	Recorded version of script
3	Report/Presentation	.5	25	Classroom presentation
TOTALS		3.5	100%	

NOTES

Script including any revisions to be evaluated. Marks based on effort, initiative, creativity, quality of work. See your facilitator for script approval before attempting your recording.

Note that the purpose of this production is to learn how to record sounds from a variety of sources. Your script must include several sources, and field and studio type recording. Also, you will need to incorporate 3D sounds, i.e. farther sounds recede in background.

Note that the post production verbal report will describe the basics of electronics and electromagnetic theory used in the audio production.

PROJECT PROCEDURE

Step	Procedure
1	<p>Script Design (Individual and group) (approximately one period) Brainstorm products, services to be used in advertising spot Design basic scripts that target a specific market Share ideas with your group Select one or two ideas as a group Obtain facilitator approval before designing final script Design a final script including dialogue, background music and sound effects (see note above) Rehearse roles in the advertising spot.</p>
2	<p>Recording Audio Message (Group) (approximately two periods) Set up the audio equipment for the recording session Complete rehearsal of script, ensure it meets the 30 second duration criteria Tape the ad several times Listen to all of the recordings and decide as a group which will serve as final copy Make any changes and re-record in necessary</p>
3	<p>Verbal Report/Presentation (Group) (approximately one-half period) Describe the signal pathway and how microphones and speakers use electromagnetism. Describe your advertisement and target audience to the class, play your final recording Conduct a peer evaluation of final recording</p>

AUDIO PROJECT CHECKLIST**Equipment**

1. Select the most appropriate microphone for the task.
Microphone type: _____

1. Select all of the appropriate cabling.

2. Does all of the cabling work? Test cables.

3. Select and connect equipment to be used.
e.g. Audio mixing board, audio recorders, sound effects etc,

Sound Quality Check

1. Are all sounds clear and audible.

2. Recording levels set properly. (no distortion...too much red)

3. No line noises or outside noises.

Sound Quality Check

- Audible _____
- Consistent overall volume level _____
- Volume levels balanced from different sources _____
- High, mid, and low frequencies balanced for each source _____
- No line interference, hum, or squeal _____
- No unwanted background or microphone noise _____
- Separation in main (figure) and ambient sounds (ground) _____
- Sound perspective corresponds to visual image _____

Post Production Report: Report Format

1. Title Page

The title page is used to grab the attention of the reader. As such, it should contain some form of illustration that appeals to the reader. It should also contain the name of the report, the name(s) of the persons that produced the report, for whom the report has been prepared and the date of production.

2. Advertisement and Target Audience Description

Describe the advertisement purpose and the audience that is being targeted by the advertisement. Also describe how you feel the advertisement actually goes on to reach this particular audience. Describe any techniques that may have been incorporated to accomplish this.

3. Materials/Equipment

List all the materials/equipment and any costs involved in the audio production.

4. Electronic Systems Description

This section describes the underlying electronics behind the production, the pathway of the signal with a short description of how electromagnetism plays a role in the operation of microphones and speakers.

5. Group Evaluation

This should be an in-depth account of the process used in the design, scripting, recording and final mixing of the audio project. The sentences in each paragraph should be kept short and to the point. It should describe the route used to complete each stage of the work, including research conducted, sources of information, equipment selection, recording techniques used and their results.

6. Brainstorming/Mark up Scripts/Recording Studio Layout

Include all the ideas generated through the brainstorming activity. All script versions including the final script. Any layout considerations that were incorporated for the recording sessions (this may be in the form of sketches or notes). Ensure all of your work has proper titles and that any drawings are properly labeled and descriptive.

7. Conclusion

Describe the results of the process of finding a solution to the design challenge. Include the results of testing solutions. Include a description on how each of the design criteria was met (or not). Describe possible improvements or modifications for future work. Suggest other users or situations that may benefit from your research and/or testing.

8. References

This is a list of all reference materials that students used in order to complete the project, including books, articles, interviews, and Internet sources.

9. Log Sheet

From your daily log records, list the dates and amount of hours taken for each facet of the project. Each team member should include his or her personal time log.

Audio in the Studio: Script and Post Production Report Rubric

Criteria	Level 1 (50 – 59%)	Level 2 (60 – 69%)	Level 3 (70 – 79%)	Level 4 (80 – 100%)
<p>Knowledge /Understanding</p> <p>identifies the components of the audio production process</p> <p>TFV.02, TFV.03</p> <p>Explains industry standards, basic system components and electromagnetism</p> <p>TFV.04, TF2.01, TF2.03</p>	<p>- demonstrates limited knowledge of terminology and process</p> <p>- report illustrates limited knowledge of industry standards, electronic systems and electromagnetic theory</p>	<p>- demonstrates adequate knowledge of terminology and process</p> <p>- report illustrates adequate knowledge of industry standards, electronic systems and electromagnetic theory</p>	<p>- demonstrates considerable knowledge of terminology and process</p> <p>- report illustrates considerable knowledge of industry standards, electronic systems and electromagnetic theory</p>	<p>- demonstrates exceptional or professional level use of terminology and procedure</p> <p>- report illustrates exceptional knowledge of industry standards, electronic systems and electromagnetic theory</p>
<p>Thinking/Inquiry</p> <p>Analyze proper scripting techniques for an audio production</p> <p>Selects appropriate production techniques as they apply to industry standards</p> <p>Selects appropriate formats for audio production.</p> <p>TF3.02, TF3.03</p>	<p>- demonstrates limited ability to investigate scripting techniques</p> <p>- demonstrates limited ability to investigate appropriate production techniques</p> <p>- demonstrates limited ability to select appropriate formats for recorded productions</p>	<p>- demonstrates some ability to investigate scripting techniques</p> <p>- demonstrates some ability to investigate appropriate production techniques</p> <p>- demonstrates some ability to select appropriate formats for recorded productions</p>	<p>- demonstrates considerable ability to investigate scripting techniques</p> <p>- demonstrates considerable ability to investigate appropriate production techniques</p> <p>- demonstrates considerable ability to select appropriate formats for recorded productions</p>	<p>- demonstrates exceptional ability to investigate scripting techniques</p> <p>- demonstrates exceptional ability to investigate appropriate production techniques</p> <p>- demonstrates exceptional ability to select appropriate formats for recorded productions</p>
<p>Communication</p> <p>Uses effective script writing techniques</p> <p>SP4.03</p>	<p>- demonstrates limited ability to use scripting terminology as a method of sharing and presenting information.</p>	<p>- demonstrates some ability to use scripting terminology as a method of sharing and presenting information.</p>	<p>- demonstrates considerable ability to use scripting terminology as a method of sharing and present information.</p>	<p>- demonstrates exceptional ability to use scripting terminology as a method of sharing and presenting information.</p>

Audio in the Studio: Audio Production Rubric

Criteria	Level 1 (50 – 59%)	Level 2 (60 – 69%)	Level 3 (70 – 79%)	Level 4 (80 – 100%)
<p>Knowledge/ Understanding</p> <p>Demonstrate a working knowledge of amplification and signal processing</p> <p>TF2.04</p>	- demonstrates limited knowledge of amplification and signal processing in audio production	- demonstrates adequate knowledge of amplification and signal processing in audio production	- demonstrates considerable knowledge of amplification and signal processing in audio production	- demonstrates exceptional or professional level knowledge of amplification and signal processing in audio production
<p>Thinking/Inquiry</p> <p>Analyses component properties to select the most appropriate components for the audio production.</p> <p>TF2.07</p> <p>Demonstrates time management skills</p> <p>SP1.03</p>	<p>-demonstrates limited effort in identifying and selecting components for audio production</p> <p>- demonstrates limited skill in managing production time</p>	<p>-demonstrates adequate effort in identifying and selecting components for audio production</p> <p>- demonstrates adequate skill in managing production time</p>	<p>-demonstrates considerable effort in identifying and selecting components for audio production</p> <p>- demonstrates considerable skill in managing production time</p>	<p>-demonstrates exceptional effort in identifying and selecting components for audio production</p> <p>- demonstrates leadership level of skill in managing production time</p>
<p>Application</p> <p>Correct and efficient use of procedures, equipment and accessories required to create audio production.</p> <p>SPV.03, SP2.01, SP2.03</p>	- demonstrates limited use of proper procedures, equipment, and accessories required for audio production	- demonstrates some correct use of procedures, equipment, and accessories required for audio production	- demonstrates proper and effective use of procedures, equipment, and accessories required for audio production	- demonstrate to others the correct use of procedures, equipment, and accessories required for audio production

Daily Log

Student:	
Class:	

Date	Project	Function	Hours	Teacher Signature

Total Hours:	
Student Signature:	
Teacher Signature:	

Safety Resource Pack

TGJ3M Communications Technology

UNIT 2 ACTIVITY 1.3

Audio in the Studio: principles of sound, equipment, and storage

Contents:

1. Safety Data Sheets:
 - a. General shop safety
 - b. Electrical safety
 - d. Personal computer safety
2. Safety Passport
3. Safety Test

Equipment used:

- Oscilloscope
- Power supply
- Audio amplifier
- Audio mixing board
- Microphones
- Headphones
- Personal computer
- Tape recording unit
- Sound effects generators

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INSERT THE FOLLOWING SHEETS FROM THE SAFETY RESOURCE PACK:

Safety Data Sheets:

1. General lab safety
2. Electrical safety
3. Personal computer safety

Safety Passport(s)

Safety Test(s)