FINAL PROJECT OVERVIEW

Name of Project:	Periodic Behavior in Music- Open Mic Night	**Teach Dates: TBD**
Subject:	Mathematical Models with Applications English II	**Teachers:** Samantha Serio Keelie Kish Ariel DeZeeuw
Driving Questions:	How can we, as music producers, use our knowledge of periodic behavior in music to create an instrumental piece to accompany a famous poem to be performed at the open mic night at White Rhino Coffee Shop?	
Summary and format of Entry Document – Submit a copy	Entry document is in a flyer format. There is an introduction paragraph, the driving question, project requirements, and some eye catching images. It tells students that a local coffee shop will be holding an open mic night and will be donating 10% of its profits from that night to the American Music Therapy Association. Students will be creating an instrumental piece to accompany a pre-existing poem that uses consonance and dissonance that they will perform at the open mic night. Students will be able to speak or sing the poem.	
Anticipated "need to knows" from entry document – include logistics and content	● What are genre characteristics? ● What is a verse? What is a chorus? ● What will be available to us for the open mic night? ● What are consonance and dissonance? ● What is periodic behavior? ● What do sound waves look like and how do they relate to math? ● How do you use DESMOS/what is it? ● How do you use GarageBand/what is it? ● How do you model trig functions with technology? ● How do you demonstrate periodic behavior in music? ● What is the American Music Therapy Association and what do they do?	
Project Launch Summary of how you will launch the project – include anchor video link and purpose	Students will watch a video about music therapy https://www.youtube.com/watch?v=97NhaElXRVM - music therapy This gives students an introduction to what music therapy is and how it impacts people. Many students have probably never heard of it before so it a good way to introduce the topic as well as engage them before adding a content based piece into the project	
Student Products/Assessment:	Students will create an instrumental piece on GarageBand or their own software to accompany a poem. This will be performed at an open mic night. Students will also create a visual presentation on DESMOS that graphs frequencies to demonstrate consonance and dissonance.	

Objectives: SWBAT	Students will be able to ==model== trigonometric functions with technology to demonstrate periodic behavior in music. Students will be able to ==identify== consonance and dissonance based on a chord's sine function. Students will be able to ==create== an instrumental piece that utilizes consonance and dissonance to accompany a poem.
Content Standards to be taught and assessed:	**Math Modeling:** (7) Mathematical modeling in fine arts. The student uses mathematical processes with algebra and geometry to study patterns and analyze data as it applies to fine arts. The student is expected to: (A) use trigonometric ratios and functions available through technology to model periodic behavior in art and music **English II:** (3) Reading/Comprehension of Literary Text/Poetry. Students understand, make inferences and draw conclusions about the structure and elements of poetry and provide evidence from text to support their understanding. Students are expected to analyze the structure or prosody (e.g., meter, rhyme scheme) and graphic elements (e.g., line length, punctuation, word position) in poetry.
Safety: Include any safety issues and *how* they will be addressed.	Students will follow all school safety rules and procedures. Students will be taken to the open mic night by a parent or a district school bus Two teachers will be present at the open mic night to monitor students One parent will be chosen as a chaperone for the open mic night
Accommodations:	• Additional documents with written out class notes about ratios will be given to the special population students • Specific students require frequent feedback so the teacher will allot time during group work segments each day to check in on the group that the student is included in: o Additional probing and checking for understanding questions will be asked to this group to ensure the student is being monitored properly. • The teacher will give a copy of the critical friends feedback to the student.

PROJECT CALENDAR

Project: Periodic Behavior in Music- Open Mic Night			**Time Frame:** 7 classes total (arbitrary listed April 2nd as presentation day, requires 6 business days prior to April 2nd)	
			THURSDAY (3/25) **50 minutes**	**FRIDAY (3/26)** **50 minutes**
PROJECT WEEK ZERO				
Notes: This week would include two days for students to learn about classical poems and structure in English II (prior to the math component)				
			Workshop: Discovering Classic Poems ● Students will learn the names and common themes of classic poems ● Students work in groups to create a list of five poems they could potentially use for the project **Homework: students choose 3 poems from the list to use for their project**	**Workshop: Structure of Poems** ● Students will learn the concepts of meter and rhyme scheme ● Students will explore meter and rhyme scheme within classic poems ● Teacher approves student poems to use in the project

MONDAY (3/29) 50 minutes	TUESDAY (3/30) 50 minutes	WEDNESDAY (3/31) 50 minutes	THURSDAY (4/1) 50 minutes	FRIDAY (4/2) 50 minutes
PROJECT WEEK ONE				
Notes: This week would focus on the STEM content using the support from English II content				
Day 1 - Launch Day **Entry Event (2 minutes)** ● Video: http://www.tunedupmusictherapy.com/musictherapy/ **Teaming/Social Contracts (30 minutes)** ● Icebreaker for group ● Entry document ● Team names, social expectations, and role assignment **Knows/N2K's (10 minutes)** ● Student generated list created on Google Docs. **Choosing a Poem (8 minutes)** ● Students work in their groups to choose a poem from English II. **Homework: American Music Therapy DIY** **Open Mic Night DIY available for duration of project**	**Workshop: GarageBand (15 minutes)** ● Students learn how to use GarageBand on their iPads. ● Whole class **Workshop: App Frequency (15 minutes)** ● Students learn what frequency is and how different notes and frequencies interact. ● Whole class **Consonance & Dissonance DIY (10 minutes)** ● Video: https://www.youtube.com/watch?time_continue=155&v=zAxT0mRGuoY ● Guided worksheet ● Whole class- mandatory **Student work time in GarageBand (10 minutes)** **Notes Frequencies DIY becomes available**	**Revisit knows/N2K's (5 minutes)** **Workshop: Ratios and solving for unknown variables (35 minutes)** **(20 minutes for workshop)** ● Students review what a ratio is and how to solve for an unknown variable using ratios. **(15 minutes for teaching group)** ● Team Tutors attend and teach group members. **Student work time in GarageBand (10 minutes)** ● Must have chords which contain consonance and dissonance chosen. **Homework: Complete ratios quiz** **Students will keep working through their song composition**	**Student work time in GarageBand (20 minutes)** ● Students must have song completed by the end of the 20 minutes. (2 group members) ● Students must have graphs of consonance and dissonance based on chords from day 3. (2 group members) **Critical Friends (20 minutes)** ● Completed in stations. ● One representative from each group stays and collects feedback from rotating groups. **Adjustments to composition based on critical friends feedback (10 minutes)** **Homework: Create presentation for mathematical component**	**Student work time on presentation (22 minutes)** **Presentations in class to other classmates, the math and the English teacher (28 minutes)** **Winners from each class perform their song at the open mic night.** **Homework: Complete self-assessment collaboration and presentation rubrics**

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