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**Capstone Project**  
**“Lesson Plans”**  
**Submitted by Kate L Knaack**  
**November 6, 2016**

*“The Capstone class is a guided study on how curriculum design between the two endorsements is interrelated.” Program Advising Guide. M. Ed. Specialized Endorsements*

**Master Areas of Specialization:** Middle Level Math & ESL

**Professional Project Title:**

Reinforcing Common Core Math in the Middle School General Music Classroom

**Project Purpose**

The connections between the disciplines of music and math are undeniable. For this project, I intend to plan an interdisciplinary unit of music theory lessons that reinforce mathematical skills appropriate for the middle level grades. The unit will also include ELL accommodations, for music is a language itself.

# Math Practice in Music Theory

## Math Practice Standard #1

'Make sense of problems and persevere in solving them.'

"Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends."

<b>Course:</b> 6th Grade General Music	<b>Unit Theme:</b> Math Practice in Music Theory
<b>Instructor:</b> Kate Knaack	<b>Music Topic:</b> Dynamic Markings

### Common Core Standards

Math Standard	Music Standard
<b>Math Practice Standard #1:</b> Make sense of problems and persevere in solving them.	<b>Music Core Arts Anchor Standard #2</b> Organize and develop artistic ideas and work

Music Concept	Vocabulary
<b>Graphing dynamic markings on a number line</b>	Volume, Loud, Quiet, Italian, Dynamics. Pianissimo, Piano, Mezzo Piano, Mezzo Forte, Forte, Fortissimo, Crescendo, Diminuendo/Decrescendo
Objectives	Materials/Technology Required
<ul style="list-style-type: none"> <li>- Students will be able to graph each of the musical dynamic markings on a mathematical number line in the order of the quietest to the loudest (pp, p, mp, mf, f, ff).</li> <li>- Students will also be able to apply the "crescendo" and the "decrescendo" to the organization of the dynamic markings</li> </ul>	<ul style="list-style-type: none"> <li>- Recording of "The Surprise Symphony" by Haydn</li> <li>- Document Camera/Projector</li> <li>- Colored Pencils</li> <li>- "Dynamics Graphic Organizer"</li> <li>- "Dynamics Number Line"</li> <li>- "Dynamic &amp; Picture Examples"</li> <li>- "Dynamics Graphic Organizer Completed"</li> </ul>
Differentiation: ELL	Differentiation: SPED
<ul style="list-style-type: none"> <li>- Students examine real life examples of each dynamic and/or tempo marking and how these examples correspond with one another. ELL students will be given a graphic organizer of each dynamic symbol studied</li> </ul>	<ul style="list-style-type: none"> <li>- Students will receive an extra copy of the graphic organizer already filled out for extra support</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non-band/chorus students), and mixed academic level.</li> </ul>

## Lesson Plan #1 Agenda:

### **Opening Activity: Listening/Interaction Activity (5 minutes):**

Students will be played “The Surprise Symphony” by Franz Joseph Haydn and asked to raise their hands every time the music gets loud. The goal is for students to understand that *volume* in music is a form of expression and that the special word for the volume in music is ‘dynamics.’

### **Whole Class Instruction (15 minutes):**

Students will receive a graphic organizer of each dynamic marking in music that we will study (pp, p, mp, mf, f, ff, cresc., and decresc.) that are out of order. As a class, while teacher is using the projector, students will fill in the columns/rows that are empty of the Italian word for each symbol/dynamic marking, as well as the English meaning for each of those Italian words. Students will then volunteer to think of a real-life example of their choosing to represent each of these dynamic markings. The class fills in the graphic organizer together.

### **Collaborative Work (10 minutes):**

Students will turn to the backside of their page that has a number line. They will work in their pre-assigned groups to order the dynamics symbols on the number line from quietest to loudest while referring to the graphic organizer completed during whole-group instruction. Students will then apply either a crescendo or a decrescendo to the entire line.

### **Closing Activity: Independent Work: Creative Drawing/Dynamic Labeling (10 minutes):**

Upon completion of the lesson, students will be asked to draw a scene that represents two or more of the dynamic markings learned today.. This will be done in their notebooks that they already have. Students will need to label the scene with the appropriate dynamic markings. For example, a student might draw a car zooming away with the label of *f* for the start of the engine, and a *decresc.* for the car driving away.

# Math Practice in Music Theory

## Math Practice Standard #2

*'Reason abstractly and quantitatively.'*

*"Mathematically proficient students make sense of quantities and their relationships in problem situations."*

<b>Course:</b> 6th Grade General Music	<b>Unit Theme:</b> Math Practice in Music Theory
<b>Instructor:</b> Kate Knaack	<b>Music Topic:</b> Meter

### Common Core Standards

Math Standard	Music Standard
<b>Math Practice Standard #2:</b> Reason abstractly and quantitatively.	<b>Music Core Arts Anchor Standard #1:</b> Generate and conceptualize artistic ideas and work

Music Concept	Vocabulary
<b>Verbalizing the meaning of each number in a time signature</b>	Meter, time signature, measures, beat,
Objectives	Materials
<ul style="list-style-type: none"> <li>- Students will be able to verbalize what each number in a music time signature means</li> <li>- Students will be able to write an example of an appropriate rhythm for various time signatures</li> <li>- Students will be able to work collaboratively</li> </ul>	<ul style="list-style-type: none"> <li>- Recording: "I See Fire" by Ed Sheeran (YouTube)</li> <li>- Recording: "Skyfall" (slow waltz version on YouTube)</li> <li>- Document Camera/Projector</li> <li>- "Meter/Time Signature Notes &amp; Challenges"</li> <li>- "Meter/Time Signature Notes &amp; Challenges Completed"</li> </ul>
Differentiation: ELL	Differentiation: SPED
<ul style="list-style-type: none"> <li>- English-language learners will receive a copy of the "Meter/Time Signature Notes" completed</li> <li>- English-language learners will receive a copy of the "Meter/Time Signature Notes &amp; Challenges" with one of the "Partner Challenges" already completed for them as an example</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non band/chorus students), and mixed academic level.</li> </ul>	<ul style="list-style-type: none"> <li>- All students will receive a visual of common conducting patterns practiced during the opening activity. SPED students will receive this early to aid them in the opening activity</li> <li>- Students who require copies of class notes will receive a copy of the "Meter/Time Signature Notes" already completed</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non-band/chorus students), and mixed academic level.</li> </ul>

## **Lesson Plan #2 Agenda:**

### **Opening Activity: Listening/Movement Activity (5 minutes)**

Students will begin the lesson by pretending they are conductors while standing up and facing the front. After a few brief statements by the teacher about the job of the conductor, students will understand that one job of the conductor is to give the beat. They will also understand that most of the time, the conductor conducts a pattern of 3 or a pattern of 4. Students will hear “I See Fire” by Ed Sheeran to practice the conducting pattern of 4 while mirroring the teacher. The students will then practice the conducting a pattern a 3 while listening to “Skyfall” (the slow waltz version).

### **Whole Class Instruction (10 minutes):**

Students will be given an organizer to take notes for the topic of Meter/Time Signature. Students will each complete their “notes” worksheet during teacher-led, whole-class instruction.

### **Collaborative Partner Work (10 minutes):**

Students will turn to the backside of their papers to complete the “Partner Challenge” by *verbalizing* to one another what each of the different time signature means. Students will write their statements next to each of the time signatures.

### **Collaborative Group Work (10 minutes)**

Upon completion of the lesson, students will take out their notebooks and collaborate with their group members to write a 3 measure rhythm in  $\frac{3}{4}$  time signature. They will then practice clapping and counting their patterns out loud with their group members.

### **Closing Activity Collaborative Work (5 minutes):**

Each group will perform their rhythms for the whole class, but not without *verbalizing* what the time signature means first!

# Math Practice in Music Theory

## Math Practice Standard #3

*‘Construct viable arguments and critique the reasoning of others.’*  
*“(Mathematically proficient students) justify their conclusions, communicate them to others, and respond to the arguments of others.”*

<b>Course:</b> 6th Grade General Music	<b>Unit Theme:</b> Math Practice in Music Theory
<b>Instructor:</b> Kate Knaack	<b>Music Topic:</b> Music Analysis

### Common Core Standards

Math Standard	Music Standard
<b>Math Practice Standard #3:</b> Construct viable arguments and critique the reasoning of others	<b>Music Core Arts Anchor Standard #7</b> Perceive and analyze artistic work

Music Concept	Vocabulary
<b>Analyzing a piece of music describing each element of music</b>	Analysis, analyze, describe, adjective, rhythm, dynamics, melody, harmony, tone color, timbre, texture, form
Objectives	Materials
<ul style="list-style-type: none"> <li>- Students will demonstrate their understanding of the elements of music</li> <li>- Students will work collaboratively and make arguments about elements of a song</li> <li>- Students will critique each others' analyses to create a group consensus</li> </ul>	<ul style="list-style-type: none"> <li>- Whiteboard/Projector/Doc Camera</li> <li>- “The Elements of Music” Worksheet</li> <li>- “The Elements of Music - Completed” Worksheet</li> <li>- “Music Analysis Worksheet”</li> <li>- “Music Analysis Worksheet - Completed”</li> <li>- Recording of “Buffalo Soldier” by Bob Marley</li> </ul>
Differentiation: ELL	Differentiation: SPED
<ul style="list-style-type: none"> <li>- Students will receive a completed version of each of the worksheets</li> <li>- Students will be monitored during work</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non-band/chorus students), and mixed academic level.</li> </ul>	<ul style="list-style-type: none"> <li>- Students will receive a completed version of each of the worksheets.</li> <li>- Students will be monitored by teacher during independent and collaborative work</li> <li>- * Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non-band/chorus students), and mixed academic level.</li> </ul>

## **Lesson Plan #3 Agenda:**

### **Opening Activity - Group Activity (5 minutes):**

As general vocabulary review, students work in their assigned groups to come up with a definition of “analysis.” Students take out a scratch sheet of paper and collaborate with their group members to come up with exactly how to word their definition. After about 3 minutes, students share their definitions with the class. The group who is closest to the exact definition gets a prize.

### **Whole Class Instruction (10 minutes):**

Teacher writes the exact definition on the whiteboard for groups to compare their definitions with the actual definition. Teacher then discusses each element of music as the class completes the empty boxes on their “Elements of Music” worksheets.

### **Independent Work (10 minutes):**

While listening to “Buffalo Soldier” by Bob Marley, each student completes their own “Music Analysis” worksheet (on the backside of their “Elements of Music” worksheet) while referring to the “Elements of Music” graphic organizer which was just completed as a class.

### **Collaborative Work (15 minutes):**

Each group will now get one new, blank copy of the Music Analysis worksheet. With collaborative effort, students compare their own answers from completing their “Music Analysis” worksheets independently to make a final copy of the answers they all agree on. Students will be making arguments and critiquing others’ ideas to come to a group consensus. The song will be played again while they work together. This group version of the music analysis will be turned in as their ticket out of class.

# Math Practice in Music Theory

## Math Practice Standard #4

*'Model with mathematics.'*

*"Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace."*

<b>Course:</b> 6th Grade General Music	<b>Unit Theme:</b> Math Practice in Music Theory
<b>Instructor:</b> Kate Knaack	<b>Music Topic:</b> Note Duration

### Common Core Standards

Math Standard	Music Standard
<b>Math Practice Standard #4:</b> Model with mathematics	<b>Music Core Arts Anchor Standard #11</b> Relate artistic ideas and works with societal, cultural, and historical context to deepen understanding

Music Concept	Vocabulary
Understanding rhythmic note values as pieces of a whole	Whole, rhythm, half, beats, divide, part
Objectives	Materials
<ul style="list-style-type: none"> <li>- Students will demonstrate their knowledge of rhythmic note values by writing counts and performing various rhythms</li> <li>- Students will demonstrate their knowledge of rhythmic note values as parts of a whole</li> </ul>	<ul style="list-style-type: none"> <li>- Document Camera/Projector</li> <li>- "Rhythm Notes"</li> <li>- "Rhythm Notes - Completed"</li> <li>- "Note Value Pyramid Half Sheet"</li> </ul>
Differentiation: ELL	Differentiation: SPED
<ul style="list-style-type: none"> <li>- Students will receive a visual of the breakdown of the notes discussed in the lesson called the "Note Value Pyramid"</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non band/chorus students), and mixed academic level.</li> </ul>	<ul style="list-style-type: none"> <li>- Students will receive a visual of the breakdown of the notes discussed in the lesson called the "Note Value Pyramid"</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non-band/chorus students), and mixed academic level.</li> </ul>



## Lesson Plan #4 Agenda:

### Opening Activity - Whole Class Instruction (5 minutes):

Teacher draws a large circle on the whiteboard and asks one student at a time what their favorite food is. When a student answers “pizza,” the teacher tells the class to imagine that the student has teleportation powers. The student has gone to Papa John’s and back, and now has a giant pizza right in front of him/her, ready to eat. Teacher explains that this pizza is like a note we have in music that is also shaped like a pizza. Students hopefully volunteer to tell that this note is called the “whole note” in music and it is worth 4 beats. Teacher passes out the “Rhythm Notes” for every student to complete as we discuss how notes are related to this imaginary pizza.

### Whole Class Instruction (10 minutes):

The “pizza” is then divided as the student with teleportation decides to share it with the student across from him or her. The pizza is divided again, again, and again until each slice is “worth”  $\frac{1}{4}$  of a beat. (4 beats  $\rightarrow$  2 beats  $\rightarrow$  1 beat  $\rightarrow$   $\frac{1}{2}$  beat  $\rightarrow$   $\frac{1}{4}$  beat). Each of these divisions correlates with the number of beats in a music note. As the teacher leads the class to imagine that the pizza is being divided, the teacher draws these divisions on the whiteboard pizza. The teacher also completes the Rhythm Notes on the document camera as an example for what each students should be doing on their notes. After each note has been discussed and the “Number of Beats” column has been completed, the teacher instructs that there is a certain way to *write* counts under these notes. The teacher leads the class to complete the “How to Write the Counts” column for the notes. (The “Equivalent Rest” & “How to Write the Counts” columns to the right are saved for a later lesson.) On the back side of the students “Rhythm Notes,” students will copy the rhythm that the teacher writes on the document camera for number 1. As a class, teacher will demonstrate the proper way to write in the counts for each note in the rhythm. Then, the class will clap and count out loud the first rhythm all together.

### Collaborative Work (15 minutes):

As a group, students will copy down the next 2 rhythms that the teacher writes on the doc camera. They will they work with their group members to “write in the counts” under the remaining rhythms. After about 10 minutes, students will double check their answers after the teacher writes in the proper counting on the board. Students will fix their mistakes if any are made. Once their mistakes are fixed, each group will pick either rhythm #2 or #3 to practice clapping and counting aloud as a group. Each group performs their chosen rhythm for the rest of the class.

### Independent Work (5 minutes):

For rhythm #4, students are to write their own 4 beat rhythms and the counting under that rhythm.

### Closing Activity - Independent Work/ Whole Class Instruction (5 minutes):

Teacher will choose 4 student volunteers to write their rhythm they created on the board while the chooses one of the rhythms to copy down for #5. The class is challenged to write in the counts for the rhythm they chose from the students volunteers. Upon completion, the teacher leads the entire class to clap and count aloud together all 4 rhythms that the student volunteers

wrote on the board.

## Math Practice in Music Theory

### Math Practice Standard #5

*'Use appropriate tools strategically.'*  
*"(Mathematically proficient students) are able to use technological tools to explore and deepen their understanding of concepts."*

<b>Course:</b> 6th Grade General Music	<b>Unit Theme:</b> Math Practice in Music Theory
<b>Instructor:</b> Kate Knaack	<b>Music Topic:</b> Music & Technology

#### Common Core Standards

Math Standard	Music Standard
<b>Math Practice Standard #5:</b> Use appropriate tools strategically.	<b>Music Core Arts Anchor Standard #5</b> Develop and refine artistic work for presentation

Music Concept	Vocabulary
<b>Music &amp; Technology</b>	Staff, rhythm, notation, composition, composer, measure, bar line, time signature
Objectives	Materials
<ul style="list-style-type: none"> <li>- Students will gain experience using music technology</li> <li>- Students will gain experience using music notation software</li> </ul>	<ul style="list-style-type: none"> <li>- Student Chromebooks 1:1</li> <li>- Student headphones</li> <li>- Teacher computer screen mirrored to projector</li> <li>- Student Rhythm Compositions previously completed</li> <li>- "Noteflight Helpful Hints"</li> </ul>
Differentiation: ELL	Differentiation: SPED
<ul style="list-style-type: none"> <li>- Students will receive a copy of "Helpful Hints" for the music notation software</li> <li>- Students will be paired with a neighbor who can assist with technology needs when necessary</li> <li>- Student will be monitored by teacher with preferential seating</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non band/chorus students), and mixed academic level.</li> </ul>	<ul style="list-style-type: none"> <li>- Students will receive a copy of "Helpful Hints" for the music notation software</li> <li>- Students will be paired with a neighbor who can assist with technology needs when necessary</li> <li>- Student will be monitored by teacher with preferential seating</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non-band/chorus students), and mixed academic level.</li> </ul>

## **Lesson Plan #5 Agenda:**

### **Opening Activity - Whole Class Instruction (5 minutes):**

Students will begin by taking out their Chromebooks and logging on. They will each be registering for their own free music notation software that they can access anywhere they have internet. Students will go to [www.noteflight.com](http://www.noteflight.com) and register for their own, free, accounts. Teacher will play a demonstration of a sample score so that the students can both see and hear the composition on the projector and get an idea of what they will be accomplishing today

### **Whole Class Instruction (10 minutes):**

Teacher will lead demonstration on how to create a 'score' and input music notation so as to create a composition. The students will title their compositions "Rhythm Fun" and type their name in the "composer" section. Teacher demonstrates how to add measures and delete measures, add notes and delete notes. Teacher will demonstrate how to control their toolbar for composition. Teacher will demonstrate how to play the composition back to hear it. Teacher will demonstrate how to change and add instruments for composition. Students will follow along and change their instrument to "Drums (Standard)." Students will take out their previously composed rhythms on paper to use as the basis for their electronic rhythm compositions.

### **Independent Work (15 minutes):**

Students will use this independent work time to create 8 measures of rhythm. They are to start with their previously composed rhythms and then can add or change anything that they wish to add or change. Their goal is to have 8 final measures of rhythm composed by the end of the 15 minutes to share with the class.

### **Collaborative Work (5 minutes):**

Students will spend time sharing their compositions with their group members by switching headphones and listening to each other's compositions. This might prompt them to make changes to their own rhythms which can be done if they wish.

### **Closing Activity - Whole Class Instruction (5 minutes):**

Upon completion of sharing compositions with group members, students will have the opportunity to share their rhythms with the class if they wish.

# Math Practice in Music Theory

## Math Practice Standard #6

*'Attend to precision.'*

*"Mathematically proficient students try to communicate precisely to others."*

<b>Course:</b> 6th Grade General Music	<b>Unit Theme:</b> Math Practice in Music Theory
<b>Instructor:</b> Kate Knaack	<b>Music Topic:</b> Stem Music Notation

### Common Core Standards

Math Standard	Music Standard
<b>Math Practice Standard #6:</b> 'Attend to precision.'	<b>Music Core Arts Anchor Standard #5</b> Develop and refine artistic work for presentation

Music Concept	Vocabulary
<b>Accuracy in stem drawing as to communicate the motion of a melody in music notation</b>	Stem, note head, measure, melody, composition
Objectives	Materials
<ul style="list-style-type: none"> <li>- Students will accurately draw stem notation</li> <li>- Students will demonstrate knowledge of melody composition in noteflight</li> </ul>	<ul style="list-style-type: none"> <li>- "Melody Writing" Worksheet</li> <li>- Document Camera / Projector</li> <li>- Student 1:1 Chromebooks</li> </ul>
Differentiation: ELL	Differentiation: SPED
<ul style="list-style-type: none"> <li>- During collaborative work time, teacher will take a small group who need accommodations to write a melody as a small group</li> <li>- During independent work, students will be monitored by teacher to aide in the use of Noteflight</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non band/chorus students), and mixed academic level.</li> </ul>	<ul style="list-style-type: none"> <li>- During collaborative work time, teacher will take a small group who need accommodations to write a melody as a small group</li> <li>- During independent work, students will be monitored by teacher to aide in the use of Noteflight</li> <li>* Students are grouped in 5-6 students with mixed skill level (band/chorus students vs. non band/chorus students), and mixed academic level.</li> </ul>

## **Lesson Plan #6 Agenda:**

### **Opening Activity (5 minutes):**

Students will take out a scratch sheet of paper and draw as many different music symbols they can in one minute. The student with the most symbols wins a prize. Teacher notes students who drew music notes “upside down.”

### **Whole Class Instruction (10 minutes):**

Students will each get a copy of the “Melody Writing” worksheet. As a class and with guidance from the teacher, students will complete the top portion after reading the rules of stem notation as a class. Students copy what teacher writes on the board.

### **Collaborative Work (10 minutes):**

Students use their new knowledge of stem notation to write a simple 4 measure melody. Students will work with a partner to complete the bottom portion of the worksheet

### **Independent Work (10 minutes):**

Using their Chromebooks, students will input their melodies into a new score on their Noteflight accounts (a free online music software) and make any changes they would like to based on how it sounds when played back.

### **Closing Activity (5 minutes):**

Upon completion of the lesson, students will be given the opportunity to share their melodies with the class.

# Math Practice in Music Theory

## Math Practice Standard #7

*'Look for and make use of structure.'*  
*"Mathematically proficient students look closely to discern a pattern or structure".*

<b>Course:</b> 6th Grade General Music	<b>Unit Theme:</b> Math Practice in Music Theory
<b>Instructor:</b> Kate Knaack	<b>Music Topic:</b> Musical Form

### Common Core Standards

Math Standard	Music Standard
<b>Math Practice Standard #7:</b> Look for and make use of structure.	<b>Music Core Arts Anchor Standard #9</b> Apply criteria to evaluate artistic work

Music Concept	Vocabulary
<b>Examining the form of a piece of music</b>	Form, section, musical paragraph, introduction, coda, interlude, verse, chorus
Objectives	Materials
<ul style="list-style-type: none"> <li>- Students will be able to determine the form of various songs</li> </ul>	<ul style="list-style-type: none"> <li>- Recording of "We Will Rock You" by Queen</li> <li>- 10 Laminated Sets of Form Shapes/Letters               <ul style="list-style-type: none"> <li>- ("Form Shapes" Document)</li> </ul> </li> <li>- Student notebooks</li> <li>- Recording of "On Top of the World" by Imagine Dragons</li> <li>- Student Post-It Notes</li> <li>- Recording of "Don't Stop Believin'" by Journey</li> </ul>
Differentiation: ELL	Differentiation: SPED
<ul style="list-style-type: none"> <li>- Students will be given a set of laminated shapes with letters on each and will use these to map form throughout the lesson. Each letter has a certain color/letter. There are also shapes for Intro/Interlude/Coda</li> <li>- Students will be monitored by teacher during independent and collaborative work</li> </ul>	<ul style="list-style-type: none"> <li>- Students will be given a set of laminated shapes with letters on each and will use these to map form throughout the lesson. Each letter has a certain color/letter. There are also shapes for Intro/Interlude/Coda</li> <li>- Students will be monitored by teacher during independent and collaborative work</li> </ul>

## **Lesson Plan #7 Agenda:**

### **Opening Activity (5 minutes):**

Without discussion, teacher plays “We Will Rock You” for students and writes the Form of the song on the board as the song plays (Introduction A B A B A B B Coda). Teacher asks the class if they know what each letter represents. The conclusion is made that A = verse, B = chorus, and Coda = ending. Teacher reviews the general definition/difference of a chorus and a verse.

### **Whole Class Instruction (10 minutes):**

Teacher writes the word “Form” on the board. Students copy down this word and students copy this down in their notebooks. Teacher writes the definition on the board and students copy the definition next to “Form” in their notebooks: a “musical map” describing the structure of a song broken down into sections of music labeled by letters. Students write “Coda = Ending” in their notebooks. Teacher notes that there can be different/more letters but that there is usually a pattern of some sort in the music. Teacher also notes that A does not always mean verse and B does not always mean chorus. The class listens to “We Will Rock You” again while writing down the Form in their notebooks. Teacher writes “Interlude” while students copy this in their notebooks. Teacher defines “Interlude” as a short musical statement leading into a section of music. Teacher notes these are hard to find.

### **Collaborative Work (10 minutes):**

Teacher plays another song and students work with a partner to determine the form of “On Top of the World” by Imagine Dragons. Students work together to determine the form. Teacher plays song 2 times so students can check their answers.

### **Whole Class Instruction (10 minutes)**

When the song has been played 2 times, teacher takes volunteers to write their form on the board. We listen to the song one more time as a class and work together to determine the form. Students write the actual form in their notebooks: (Intro A B A B Interlude B C B/C Coda).

### **Closing Activity - Independent Work (5 minutes):**

As an exit slip, students will take out post-it note and independently determine the form of “Don’t Stop Believin’” by Journey (Intro A B Interlude A B Interlude C). Students post their post-it “Forms” on the door before leaving the room.

# Math Practice in Music Theory

## Math Practice Standard #8

*'Look for and express regularity in repeated reasoning.'*  
*"They continually evaluate the reasonableness of their intermediate results."*

<b>Course:</b> 6th Grade General Music	<b>Unit Theme:</b> Math Practice in Music Theory
<b>Instructor:</b> Kate Knaack	<b>Music Topic:</b> Instrument Families

### Common Core Standards

Math Standard	Music Standard
<b>Math Practice Standard #1:</b> Look for an express regularity in repeated reasoning.	<b>Music Core Arts Anchor Standard #2</b> Organize and develop artistic ideas and work.

Music Concept	Vocabulary
<b>Determining common instrument characteristics and their categories</b> <b>Predicting possible mistakes in categorizing</b>	Orchestra, Concert Band, category, instrument family, Woodwind, Brass, String, Percussion, characteristic, sound production
Objectives	Materials
<ul style="list-style-type: none"> <li>- Students will brainstorm the visual and aural characteristics of each family of instruments</li> <li>- Students will categorize various instruments in each family</li> <li>- Students will determine possible mistakes in categorizing various instruments</li> <li>- Students will tell how the sound is produced for each family</li> </ul>	<ul style="list-style-type: none"> <li>- Projector/Computer</li> <li>- "Instrument Families 4 Corners Powerpoint"</li> <li>- "Instrument Families 4 Corners Printouts"</li> <li>- "Instrument Families Powerpoint"</li> <li>- Student notebooks</li> <li>- "Instrument Families Graphic Organizer"</li> <li>- "Instrument Families Worksheet"</li> <li>- Instrument Bingo CD of Instrument Sounds</li> </ul>
Differentiation: ELL	Differentiation: SPED
<ul style="list-style-type: none"> <li>- Students are given a graphic organizer with pictures to take notes</li> <li>- Students are automatically grouped near students of various academic level</li> </ul>	<ul style="list-style-type: none"> <li>- Students are given a graphic organizer with pictures to take notes</li> <li>- Students are automatically grouped near students of various academic level</li> </ul>



## **Lesson Plan #8 Agenda:**

### **Opening Activity (10 minutes):**

As review, students play "4 corners" to review instrument families. Teacher presents PowerPoint of pictures of different instruments and students go to the corner of the family they believe that instrument belongs with. Play until a few people are left standing. Winner gets a prize.

### **Whole Class Instruction (10 minutes):**

Teacher plays "Instrument Families" powerpoint while leading class discussion about the characteristics of each family. Students use their notebooks to organize the key characteristics of each family and how the sound is produced in their own way. Students are able to watch example videos of each family during the powerpoint presentation. After each family, teacher asks student volunteers to name different visual and aural characteristics of each family (students write these in their notebooks). Teacher asks students how sound is produced (students write these in their notebooks). Before presenting the String family, teacher asks students the difference between an Orchestra and a Concert Band (an Orchestra has the String family, a Concert Band generally does not.) Teacher asks students which instruments in each family might be confused for a different family (ie. Saxophone might be confused as a Brass instrument because it looks like it is made out of "brass," etc.)

### **Collaborative Work (15 minutes):**

Students are given time to work collaboratively on the "Instrument Families Worksheet" where they are required to determine the family of each instrument pictured and write how the sound is produced.

### **Closing Activity - Whole Class Instruction (5 minutes):**

Upon completion of the lesson, students will play "Name That Instrument." Teacher plays sounds of various instruments and students are to "Name That Instrument." Students who guess correctly get a prize.