



NATIONAL
LOUIS
UNIVERSITY

Capstone Project Lesson Materials Submitted by Kate L Knaack Fall 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.

Name: _____

Date: _____

6A

6B

Dynamics Graphic Organizer

Definition of Dynamics: _____

Dynamic Marking	Italian	English	Real-Life Example
<i>f</i>		loud	A train pulling into the station.
<i>p</i>	piano		
<i>mp</i>	mezzo piano		
		medium loud	
<i>ff</i>	fortissimo		
		very quiet	
<i>cresc.</i>		gradually getting louder	
<i>dim. / decresc.</i>		gradually getting quieter	

Name: _____

Date: _____

6A 6B

Dynamics Number Line

Directions: write the symbol of each dynamic marking on the line below in order from quietest to loudest.

Refer to the Dynamics Graphic Organizer for guidance.



1. Which symbol would best fit over this line: Crescendo or Decrescendo/Diminuendo? _____
2. Draw the symbol over the length of the number line above.

Challenge: What dynamic markings would go on each end of the line?

Write the dynamic that would fit on the left end above. Now write the symbol that would go on the right end of the line.





Dynamics Graphic Organizer - Completed

Definition: **the volume in music; a form of musical expression**

Dynamic Marking	Italian	English	Real-Life Example
<i>f</i>	forte	loud	A train pulling into the station.
<i>p</i>	piano	quiet	A library
<i>mp</i>	mezzo piano	medium quiet	A group of students quietly walking down the hallway
<i>mf</i>	mezzo forte	medium loud	A class of students when they are working together on an activity.
<i>ff</i>	fortissimo	very loud	Thunder
<i>pp</i>	pianissimo	very quiet	A house in the middle of the night when everyone is sleeping
<i>cresc.</i>	crescendo	gradually getting louder	A car zooming away
<i>dim. / decresc.</i>	diminuendo decrecendo	gradually getting quieter	A song coming to an end

Dynamics & Picture Examples

Dynamics = the volume in music; a form of musical expression

Dynamic Marking	English	Real-Life Example
<i>f = forte</i>	loud	A lion's roar 
<i>p = piano</i>	quiet	A quiet mouse 
<i>mf = mezzo forte</i>	medium loud	A group of people talking 
<i>cresc. = crescendo</i>	gradually getting louder	A car zooming away 

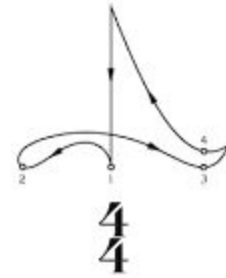
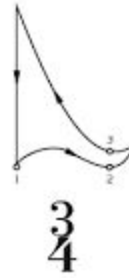
Name: _____

Date: _____

Section: 6A 6B

Meter/Time Signature Notes & Challenges

Conducting Patterns:



Meter is ...	Time Signature tells us...



← Top Number:

← Bottom Number:

PARTNER CHALLENGE:

Can you "say" what each time signature means?

Example: "The 3/4 Time Signature tells us there are 3 beats per measure and the quarter note gets the beat."

Directions: Practice with a partner *saying* outloud what each time signature means. Then write your statement for each time signature on the lines below.

2
4

" _____

_____ "

4
4

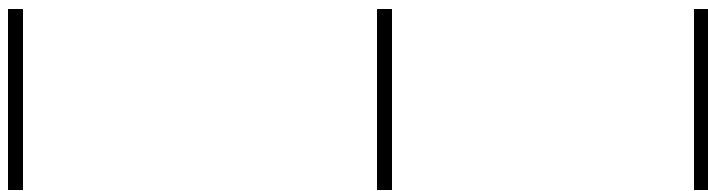
" _____

_____ "

GROUP CHALLENGE

Directions: Work with you group members to write a 3 measure rhythm in 3/4 time signature. Write the counting underneath your notes. Then, practice clapping and counting the rhythm out loud together as a group. Be prepared to perform for the class!

3
4



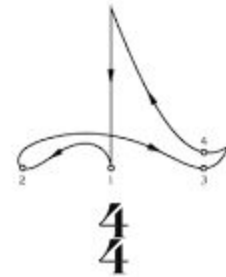
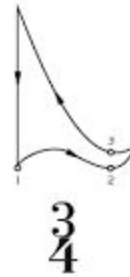
Name: _____

Date: _____

Section: 6A 6B

Meter/Time Signature Notes & Challenges (Completed)

Conducting Patterns:



Meter is ...	Time Signature tells us...
Patterns of stress or accent that provides the pulse of the beat	How many beats are in each measure of music and what kind of note gets the beat



← Top Number: tells us how many beats are in each measure

← Bottom Number: tells us the quarter note is worth 1 beat

PARTNER CHALLENGE:

Can you "say" what each time signature means?

Example: "The 3/4 Time Signature tells us there are 3 beats per measure and the quarter note gets the beat."

Directions: Practice with a partner *saying* outloud what each time signature means. Then write your statement for each time signature on the lines below.

2
4

"The 2/4 time signature tells us that there are 2 beats in each measure of music and the quarter note is worth one beat."

4
4

"

_____"

GROUP CHALLENGE

Directions: Work with you group members to write a 3 measure rhythm in 3/4 time signature. Write the counting underneath your notes. Then, practice clapping and counting the rhythm out loud together as a group. Be prepared to perform for the class!

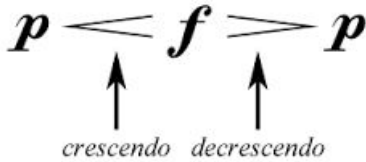

3
4

| | |

The Elements of Music

A music composition (song) has many parts. These parts are often described as “elements”.

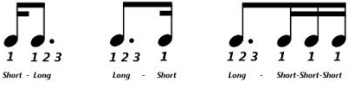
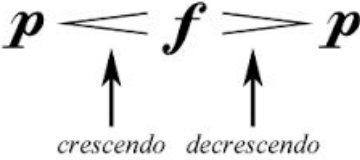

Below are the common elements of a music composition. You will be using each of these elements in your final composition, so it’s important for you to know and understand them. We will discuss each element as a class and complete the graph below by either writing the definition, or discovering examples for each. Then, we will listen to a song and analyze each of its elements.

Element	Definition	Example
1. Rhythm	Rhythm: changes in the length of notes Tempo: the speed of the beat	
2. Dynamics		
3. Melody	HORIZONTAL series of notes that creates the main part of the song that you can sing along with - one note at a time	Sing your favorite song aloud ... Write the title of the song here:
4. Harmony		 <p>A chord:</p>
5. Tone Color / Timbre	The uniqueness of sound between different instruments	
6. Texture		One instrument playing vs. an orchestra playing different parts. Thin vs. Thick
7. Form	A "musical map" that describes the structure of a song broken down into sections labeled by letters	

The Elements of Music - Completed

A music composition (song) has many parts. These parts are often described as “elements.”

Below are the common elements of a music composition. You will be using each of these elements in your final composition, so it's important for you to know and understand them. We will discuss each element, come up with examples for each, and analyze each element as we listen to a song together.

Element	Definition	Example
1. Rhythm	Rhythm: changes in the length of notes Tempo: speed of the beat	 Tempo: fast, slow, medium, etc.
2. Dynamics	The volume of music	 crescendo decrescendo
3. Melody	HORIZONTAL series of notes that creates the main part of the song that you can sing along with - one note at a time	Sing your favorite song on the radio outloud ... That is the melody! The rest of the music happening in the background is NOT the melody.
4. Harmony	VERTICAL series of notes that creates the support of the melody - more than one note at a time	 A chord:
5. Tone Color / Timbre	The uniqueness of sound between different instruments	The fact that you can tell the difference between listening to a guitar and a voice singing the same note has to do with Tone Color/Timbre
6. Texture	How thin or thick the sound is	One instrument playing vs. an orchestra playing different parts
7. Form	A "musical map" that describes the structure of a song broken down into sections labeled by letters	Example: Introduction A B C A B Coda

Music Analysis Worksheet

Directions: write the actual definition of each word on the lines below.

ANALYSIS: _____

ADJECTIVE: _____

Directions: As we listen to the song, describe each of the song's elements by answering each question.

SONG TITLE: _____

Element	Question:	Answer:
1. Rhythm	Use an adjective to describe the tempo of the song:	•
2. Dynamics	Describe how the dynamics change throughout the song. Use symbols or Italian words.	
3. Melody	What instrument plays the melody? (Remember, "voice" IS an instrument! - Also, the melodic instrument might change in the song!)	
4. Harmony	List some other pitched instruments you hear that are creating the harmony?	• • • •
5. Tone Color / Timbre	How might you describe the mood/emotion of the song? How are the instruments in the song contributing to the mood?	
6. Texture	Is the texture thick, thin, or does it change? Describe the change if it does:	
7. Form	Write the musical map of the song:	

Music Analysis Worksheet – Completed

Directions: write the actual definition of each word on the lines below.

ANALYSIS: _____ To examine in great detail _____

ADJECTIVE: _____ A describing word _____

Directions: As we listen to the song, describe each of the song’s elements by answering each question.

SONG TITLE: _____

Element	Question:	Answer:
1. Rhythm	Use an adjective to describe the tempo of the song:	•
2. Dynamics	Describe how the dynamics change throughout the song. Use symbols or Italian words.	
3. Melody	What instrument plays the melody? (Remember, “voice” IS an instrument! - Also, the melodic instrument might change in the song!)	
4. Harmony	List some other pitched instruments you hear that are creating the harmony?	• • • •
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7. Form	Write the musical map of the song:	












Name: _____

Date: _____

Section: 6A 6B

Rhythm Notes

Directions: Follow along and complete the graph below.

Number of Beats!	Note Name & Symbol	How to Write Counts	Equivalent Rest & Symbol	How to write Counts
	Whole Note 			
	Quarter Note		Half Rest	
	Quarter Note			
	Sixteenth Note			

Name: _____

Date: _____

Section: 6A 6B

Rhythm Writing Practice

Directions: For #1-3, copy the rhythms written on the board and write in the counting for each rhythm. For #4, write your own rhythm and write in the counting.

1. | | | | |

2. | | | | |

3. | | | | |

4. | | | | |




























5. | | | | |

Name: _____

Date: _____

Section: 6A 6B

Rhythm Notes - Completed

Number of Beats!	Note Name & Symbol	How to Write Counts	Equivalent Rest & Symbol	How to write Counts
4	Whole Note 	1 - 2 - 3 - 4	Whole Rest 	 (1 - 2 - 3 - 4)
2	Half Note 	 1 - 2  3 - 4	Half Rest 	  (1 - 2) (3 - 4)
1	Quarter Note 	1 2 3 4	Quarter Rest 	    (1) (2) (3) (4)
1/2	Eighth Note 	1 + 2 + 3 + 4 +	Eighth Rest 	    (1) (+) (2) (+)
1/4	Sixteenth Note 	1 e + a 2 e + a	Sixteenth Rest 	    (1) (e) (+) (a)

Name: _____

Date: _____

Section: 6A 6B

Rhythm Writing Practice

Directions: For #1-3, copy the rhythms written on the board and write in the counting for each rhythm. For #4, write your own rhythm and write in the counting.

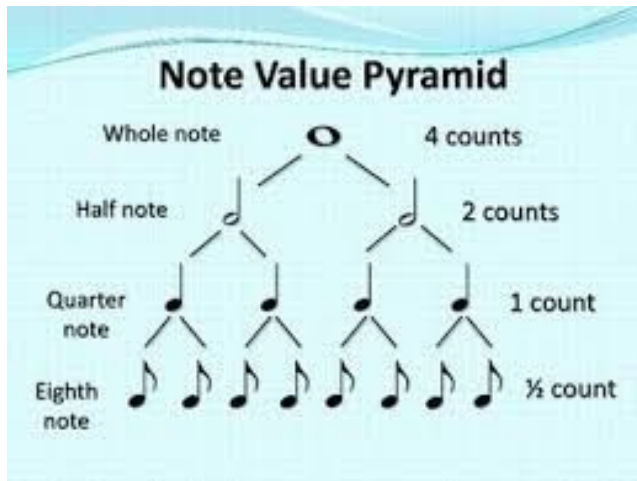
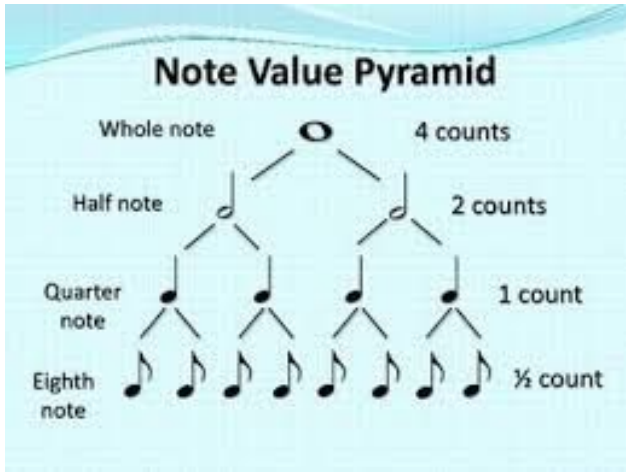
1. | | | | | | | | | |

2. | | | | | | | | | |

3. | | | | | | | | | |

4. | | | | | | | | | |

5. | | | | | | | | | |





Noteflight

Helpful Hints

1. www.noteflight.com
2. Create a new score by clicking on the + sign
3. Add measures by clicking above the measure and clicking the + sign
4. Add notes by clicking on the measure until you see a grey dot appear by your cursor. Click again to add the note.
5. Change note location by clicking on the note until it is highlighted and use the arrow keys to move the note up or down.
6. Change note duration by clicking on the note until it is highlighted then clicking on "duration" in the toolbar and choosing the duration to which you'd like it changed
7. Delete notes by clicking the note until it is highlighted then clicking "backspace"
8. Change the instrument by clicking the "instrument" icon in the toolbar
9. Undo anything you did by clicking Ctrl + Z

Melody Writing

Sometimes a note looks like it's written "upside down."

The Stem Notation Rule:

When a note falls below the middle line, the stem goes up.

When the note falls above the middle line, the stem goes down.

When a note falls on the middle line, the stem can go either up or down.

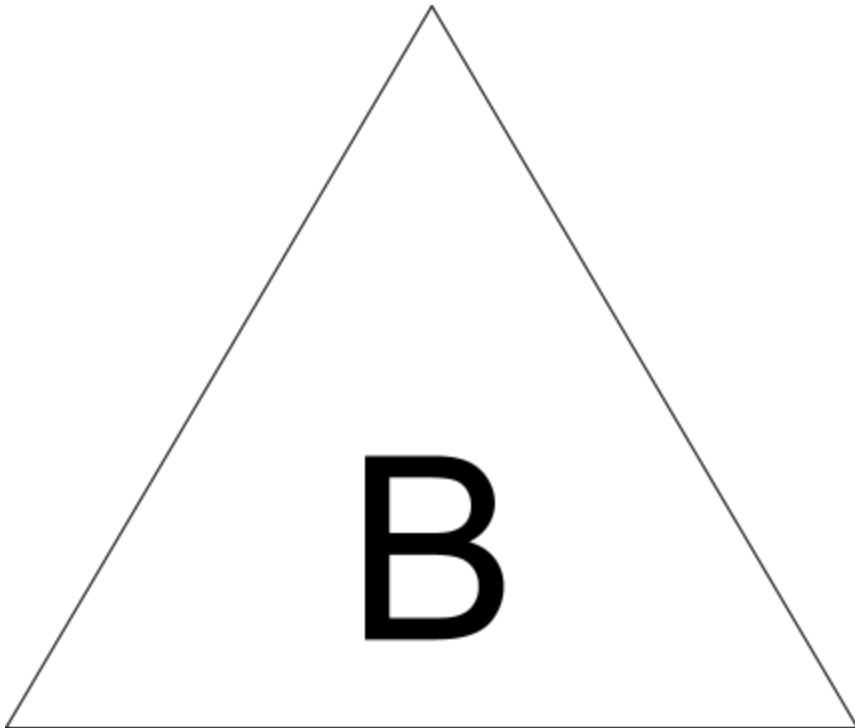
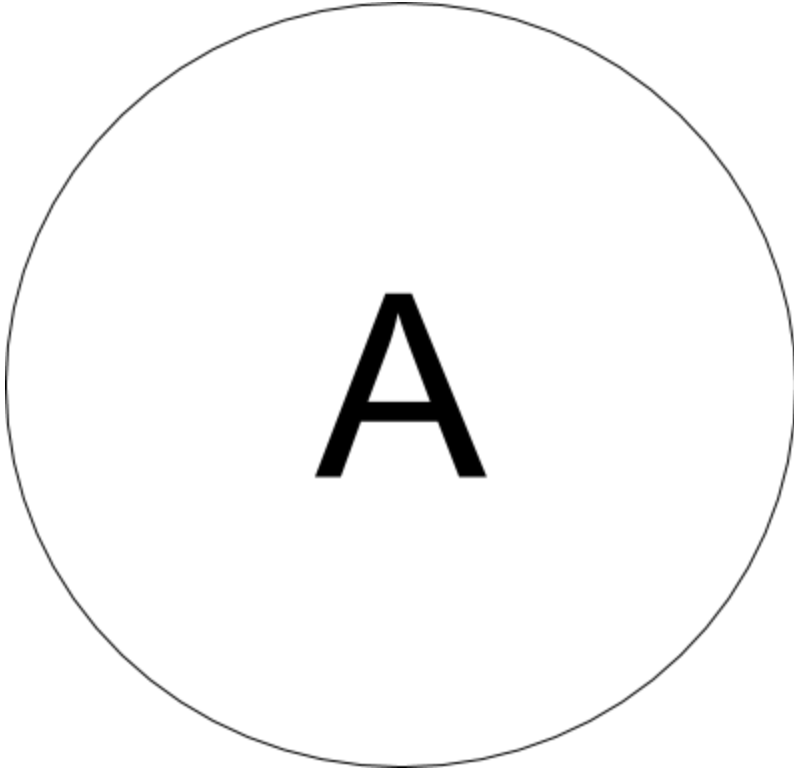
Draw the examples in the staff below:

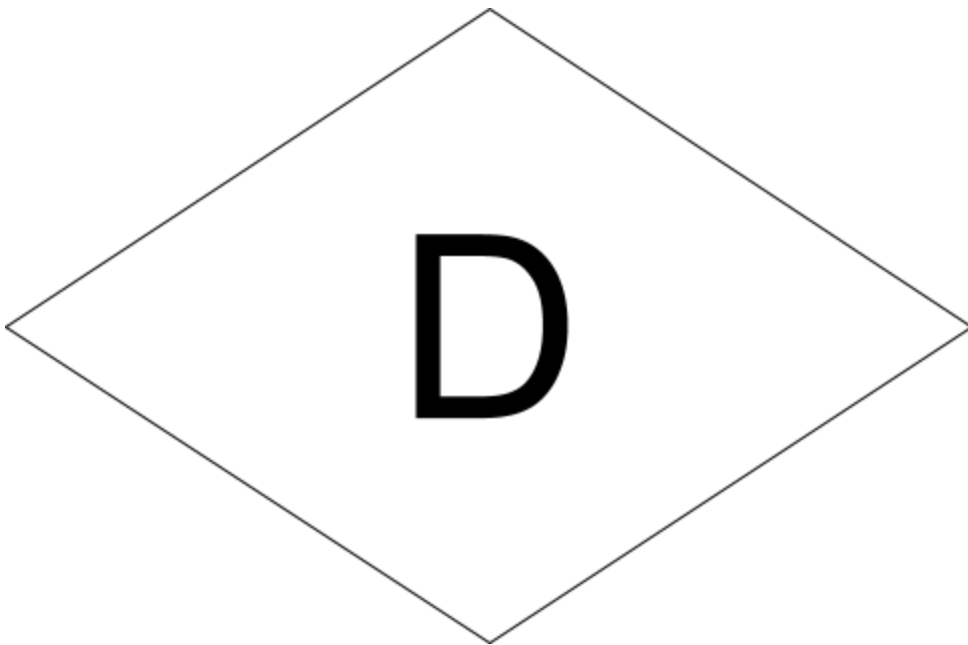
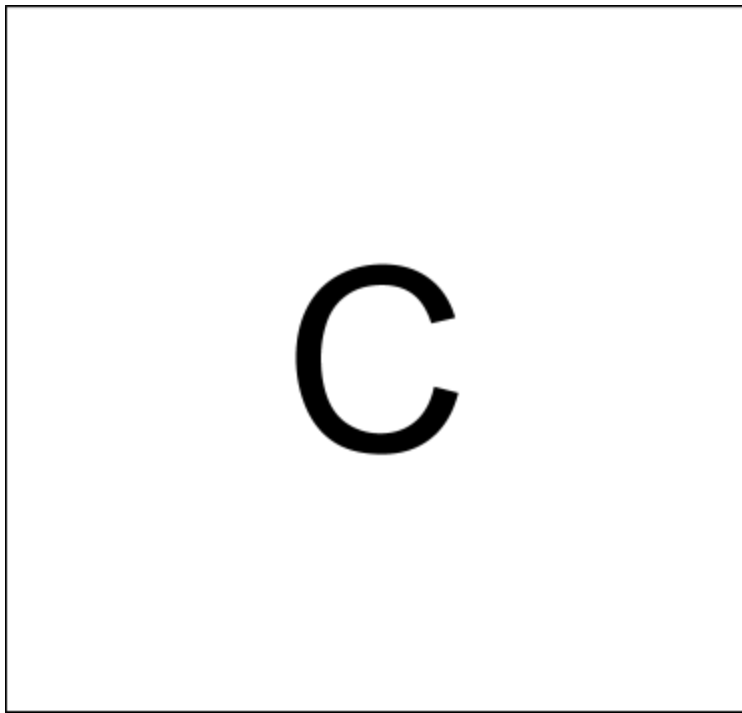
Now, write your own 4 measure melody and transfer your melody to a new score on Noteflight.

Introduction

Interlude

Coda





STRING





PERCUSSION

BRASS

WOODWARD

Instrument Families Graphic Organizer

Directions: complete the graphic organizer for your notes.

Example	Family	Characteristics	How sound is produced:
	<p>Woodwind</p>	<ul style="list-style-type: none"> • • • • • 	
	<p>Brass</p>	<ul style="list-style-type: none"> • • • • • 	
	<p>Percussion</p>	<ul style="list-style-type: none"> • • • • • 	
	<p>Strings</p>	<ul style="list-style-type: none"> • • • • • 	

Name: _____

Date: _____

Section: 6A 6B

Instrument Families Worksheet

Score: ___ / 20

On the line below each instrument pictured, (1) write the name of its instrument family: *string, woodwind, brass, or percussion*, and (2) how the sound is produced.



1. _____

2. _____



1. _____

2. _____



1. _____

2. _____



1. _____

2. _____



1. _____

2. _____



1. _____

2. _____



1. _____

2. _____



1. _____

2. _____



1. _____

2. _____



1. _____

2. _____