GreatHearts®

10th Grade

Music – Choir I: Triads

April 6 – April 10

Time Allotment: 20 minutes per day

Student Name: _____

Teacher Name: _____

Packet Overview

Date	Objective(s)	Page Number
Monday, April 6	1. Recall intervals and identify interval class and quality. 2. Examine the historical contributions of Gioseffo Zarlino during the late sixteenth century and uncover the theoretical basis for the formation of triads.	3
Tuesday, April 7	1. Revisit triad theory and define root position triads 2. Examine the major quality of root position triads	6
Wednesday, April 8	1. Examine the minor quality of root position triads 2. Write major and minor triads on the staff	9
Thursday, April 9	1. Review major and minor triads 2. Define augmented and diminished qualities.	12
Friday, April 10	APRIL BREAK: No Assignment	

Additional Notes: In order to complete the tasks within the following packet, it would be helpful for students to have a piece of manuscript paper to write out scales and intervals on; I have included a blank sheet of manuscript paper to be printed off as needed, though in the event that this is not feasible students are free to use lined paper to hand draw a music staff.

I have also included answer keys to the exercises at the end of the packet. Parents, please facilitate the proper use of these answer documents (i.e. have students work through the exercises for each day before supplying the answers so that they can self-check for comprehension.)

As always, will be available to provide support via email, and I will be checking my inbox regularly. Please do not hesitate to reach out with questions or concerns during this time. For your reference my email is kevin.austin@greatheartsnorthernoaks.org

I will also be holding regular office hours from now on via Zoom according to the following schedule:

2nd Period	Monday, Wednesday; 11:00 – 11:50am
5th Period	Tuesday, Thursday; 11:00 – 11:50am

These Zoom meetings are optional and will allow for much needed conversations to discuss theory problems and ask questions. I will send an invite and further instructions for signing in to Zoom via email.

Academic Honesty

I certify that I completed this assignment independently in accordance with the GHNO Academy Honor Code.

Student signature:

_____

I certify that my student completed this assignment independently in accordance with the GHNO Academy Honor Code.

Parent signature:

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Monday, April 6

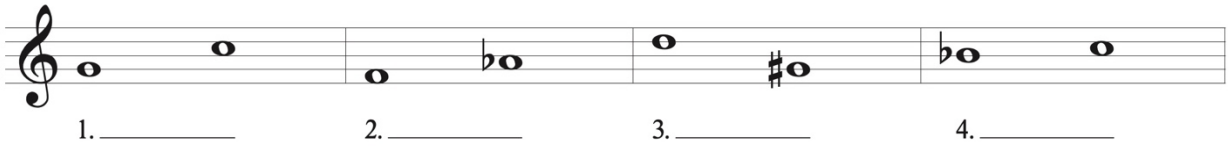
Music Theory Unit: Triads
Lesson 1: Intervals Review/ Introduction to Triads

Unit Overview: Triads
The past two weeks have been devoted to the organization and relationship between two notes, which we called an interval. We came to find that intervals have both an absolute distance, measured on the staff, which we called *Interval Class,* and a specific distance in half steps, which we called *Interval Quality*. This week we will begin to examine relationships that arise between combinations of more than two pitches, which we will come to understand as chords.

Lesson 1 Socratic Questions: Keep these questions in mind as you study this lesson!
Can we only consider one interval at a time? How might we treat the relationship between three or more notes? Would this relationship still be called an interval?

Objective: Be able to do this by the end of this lesson.
1. Recall intervals and identify interval class and quality.
2. Examine the historical contributions of Gioseffo Zarlino during the late sixteenth century and uncover the theoretical basis for the formation of triads.

Introduction to Lesson 1: Review of intervals
Using the strategies we encountered last week and the week prior, identify the following intervals with both their interval class and interval quality.



The historical beginnings of "harmony"
The theory that we have studied thus far has been concerned with the relationship between two given pitches. This is often referred to within music history as "discant theory" wherein two voices (or melodies) form a structural pair that define harmonic norms in which the perfect consonances are favored and sought after as the music moves forward. Eventually, during the Renaissance era, composers begin to add voices to this structural pair, resulting in three, four, five, and sometimes six different voices! At first these added voices were still only considered in relation to one of the others called the *cantus firmus* (literally: "fixed song"); in other words there was one main melody to which all the other voices were harmonious or consonant, but there was not as much attention given to the concord between these other voices. This is part of why Renaissance music sometimes can sound strange or foreign to our ears: because it is actually structured differently that the harmonic norms that we are used to – norms that weren't established until the end of the sixteenth century during a time known as the *ars perfecta*.

The foremost composer and theorist from the *ars perfecta* (latin: "perfect art") was Gioseffo Zarlino (1517-1590) who was best known for his treatise *Le Istitutioni Harmoniche* ("The Established Rules of Harmony") For Zarlino, harmony and balance were matters of proportion

and ratio beyond the limited *dyadic* (two pitch interval) considerations of the centuries prior. Thus he held that "music is a science subordinate to arithmetic," and he sought to make advances to music theory that were both mathematical and harmonious. Musicologist, Richard Taruskin, writes the following about Zarlino's contributions:

Read and annotate the following passage and then answer the questions that follow.

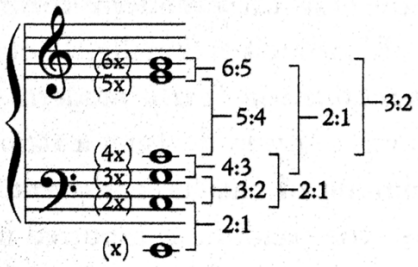
The Oxford History of Western Music: Music from the earliest notations to the sixteenth century.

"A Perfected Art"
(selections)
By Richard Taruskin

Zarlino cited mathematical theory, so that he could maintain like a good Aristotelian that according to his rules reason held sway over sense. The "perfect harmony" he asserted was the product of the "perfect number" which was six[…] Zarlino added two more integers to the Pythagorean four in order to generate the harmonies of contemporary music that he now wished to rationalize. The perfect Pythagorean harmonies could all be expressed as "superparticular" ratios of the integers from one to four. That is, they could be expressed as fractions in which the numerator was one more than the denominator thus: 2/1 = octave; 3/2 = fifth; 4/3 = fourth. But, said Zarlino, there is nothing special about the number four, and no reason why it should be taken as a limit.

Ah, but six! It is the perfect number because it is the first integer that is the sum of all the numbers of which it is a multiple. That is, 1 + 2 + 3 = 6, and 1 x 2 x 3 = 6. So a harmony that would embody all the superparticular ratios between 1 and 6 would be a perfect harmony and the music that employed such harmony would be a perfect music. In effect, that meant adding a major third (harmonic ratio of 5:4) above the [perfect] fourth and a minor third (ratio of 6:5) above the major third producing a very sonorous spacing of tones, a kind of ideal doubling of the triad in six voices […] as shown in Ex. 15-1.

EX. 15-1 Gioseffo Zarlino's *senaria* (chord of six), based on C



Nowadays this configuration is recognizable as the beginning of the natural harmonic series (or "overtone" series), which since the eighteenth century has been the standard method of explaining [this type of chord] and asserting its "naturalness." Zarlino needless to say it would have jumped for joy to see this confirmation of his rational speculation in the realm of "natural philosophy." But nobody knew about overtones as yet in the 16th century.

What people certainly did know is that when pitches were stacked up in this way they sounded good. In rich textures of five and six voices, which were increasingly common by the late 16th century, this ideal spacing and doubling was widely practiced, and compositions ended more and more frequently with full [chords] sonorously spaced.

1) What was Gioseffo Zarlino's motivation to expand the perfect Pythagorean consonances? How did he aim to do this?

2) Consider the notes in the chord in Ex. 15-1. Name them from the bottom up.

3) How many unique notes are in this chord (i.e. ignore doubled note names)? _____

4) What might we call a chord that has this many pitches in it? _____

Closing: Check your understanding of the lesson by answering the following questions.

1) During the sixteenth century, what advances were made in music theory and who was primarily responsible for these advances?

2) Based on your reading, what is a chord? How is it similar to, and how does it differ from an interval?

Tuesday, April 7

Music Theory Unit: Triads
Lesson 2: Root Position Triad Structure/ Major Triads

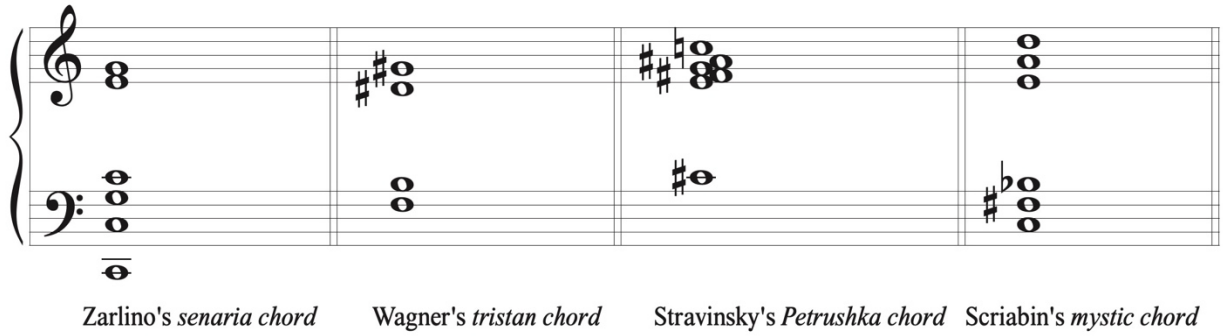
Lesson 2 Socratic Guiding Questions: Keep these questions in mind as you study!
What is the relationship between intervals and chords? How might chords be similar to intervals?

Objective: Be able to do this by the end of this lesson.

1. Revisit triad theory and define root position triads.
2. Examine the major quality of root position triads.

Introduction to Lesson 2: The structure of triads

Yesterday we saw that the *ars perfecta* in the sixteenth century saw the rise of harmonies between increased numbers of voices. When we have more than two pitches that sound at the same time, we call this a *chord.* Here are several examples of chords. What do you see that is similar between them? What is different among them?



The chords above, taken from several different musical eras, represent a few of the myriad possibilities when considering chord structures. Some, like Zarlino's *senaria chord*, can be quite sonorous. Others, like Stravinsky's *Petrushka chord*, can sound quite jarring and are difficult to reconcile outside of their original musical context (that is, taken by themselves, without the surrounding material, they can sound rather unresolved).

However, for our study of chords we will begin with a much lesser degree of complexity. Yesterday we looked at Zarlino's *senaria chord* and we sought to find the number of unique notes within it. From the bottom of the chord to the top the notes here are: C, C, G, C, E, G. If we get rid of all of the repetitions we are left with just C, E, and G – three unique notes. This then is as simple as we can get without falling back into the realm of intervals, or *dyads* (which only have two notes). We call this simplest form of a chord, which has three notes, a *triad.*

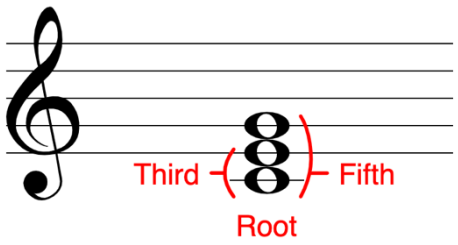
When we think of triads, we often think of them as having a starting point (a pitch upon which the others rest) and from there we stack intervals to build the chord upward. In theory we could arrange then any three notes and call it a triad; but remember that Zarlino was concerned with a perfect harmony resulting from "superparticular" ratios. So, we will seek to do the same, and limit ourselves to the notes he used: C, E, and G.

The Major Triad

Since C was the lowest note in the *senaria chord* we will treat it as our starting point, which we call the root note. Consider the relationship of the root to the other notes:

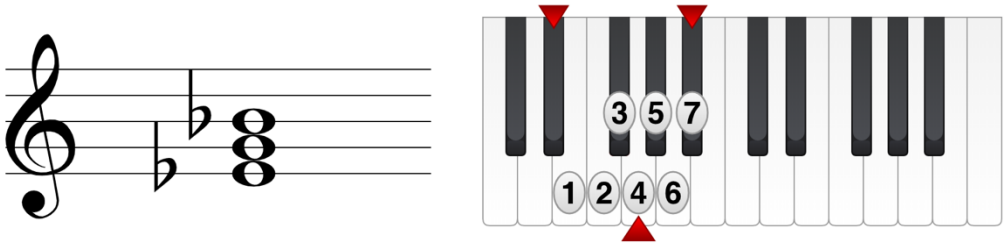
1) What is the interval from C – E? _____
2) what is the interval from C – G? _____

When we calculate these intervals and we stack the notes close together on the staff the following structure arises.



The note "C" here is what we call the root. C – E forms a Major 3rd (M3) and C – G forms a Perfect 5th (P5). Much like intervals, triads also have qualities which we use to identify them. Because this chord has a Major 3rd and a Perfect 5th we call it a Major triad (note: we don't have perfect triads). Unlike intervals, there is not only one interval class – we have three notes and three distances to calculate on the staff. Accordingly, we will instead use the root note to name the chord in place of an interval class; we would call this chord (C, E, G) an "C Major" triad.

Since we know that Major 3rds are 4 half-steps and Perfect 5ths are 7 half-steps we can use this formula to write a major triad on any given root note. Let's try Eb…



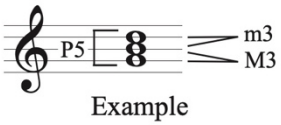
Starting on Eb as our root note, when we go up four half-steps on the keyboard, we land on G. Then counting up seven half-steps from Eb (or three from G) we land on Bb. We would call this chord an "Eb Major" triad.

When triads appear in this way, with the notes stacked close together, we call it a "close root-position triad." Moreover, when all of the notes in a triad appear in the same key signature, we would call it a *diatonic* triad, much like we do for intervals.

Closing: Check your understanding of the lesson by copying the following summary into your notes. Then complete the triads in the exercise that follows.

A root-position **major triad** is composed of three notes stacked in thirds.

The interval between the bottom two notes (root and third) is a major third (**M3**).
The interval between the top two notes (third and fifth) is a minor third (**m3**).
The interval between the bottom and top notes (root and fifth) is a perfect fifth (**P5**).



Example

Answers in this exercise are limited to **close root-position major triads**.

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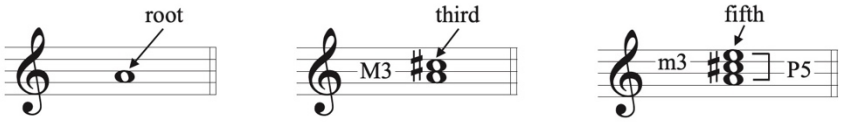
1. Create close root-position major triads using the provided notes as roots.

Create the third of the triad by adding a note a M3 above the root.
Create the fifth of the triad by adding a note a P5 above the root (a m3 above the third).

Example



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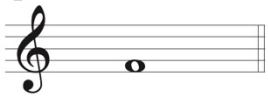

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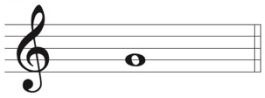

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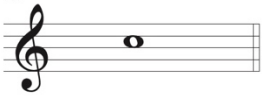

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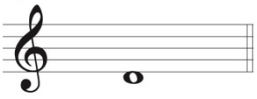

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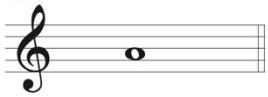

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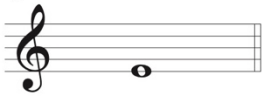

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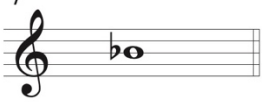

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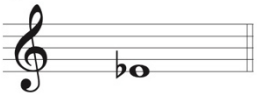


Wednesday, April 8

Music Theory Unit: Triads
Lesson 3: Review of Major Triad Structure/ Minor Triad

Lesson 3 Socratic Guiding Questions: Keep these questions in mind as you study!
Given what we know about intervals, how many types of triads do we think there will be? How will we identify them as such?

Objective: Be able to do this by the end of this lesson.

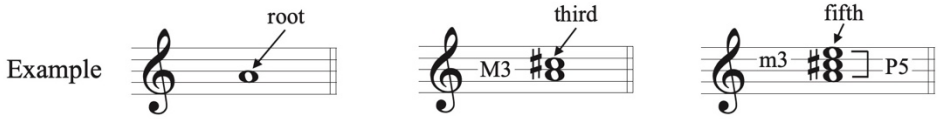
1. Examine the minor quality of root position triads
2. Write major and minor triads on the staff

Introduction to Lesson 3: Major Triads Review

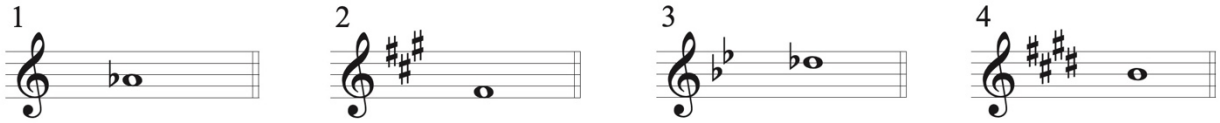
Yesterday we saw that any simultaneous sounding of more than two notes is called a *chord* and that the simplest form of a chord was called a *triad* because it has only tree notes. We also saw, using Gioseffo Zarlino's *senaria chord* as our guide, that a Major triad has three notes arranged according to a principle of perfect harmony. This resulted in a *root note,* – upon which the others were stacked – a Major 3rd, and a Perfect 5th collectively. Additionally, we saw that we label triads by their root not and quality (e.g. "C Major"). Let's practice this before we move on…

Create close root-position major triads using the provided notes as roots.

Create the third of the triad by adding a note a M3 above the root.
Create the fifth of the triad by adding a note a P5 above the root (a m3 above the third).



Hint: pay close attention to the key signatures and to how they affect the notes in the chord.



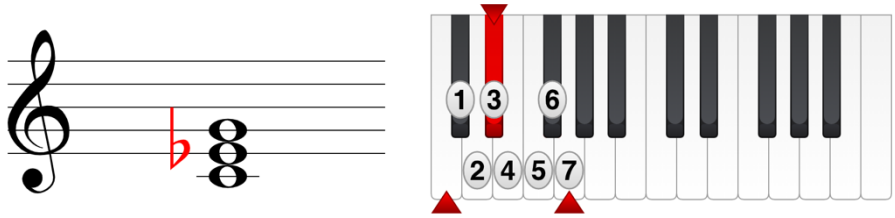
As seen in the example above, a Major triad can also be thought of as a sequential stacking of 3rds; in this case, above the root we will stack a Major 3rd and then a minor 3rd to create a Major triad with the root note and the top note resulting in a Perfect 5th.

Consider the following: How many consecutive 3rds fit inside a Perfect 5th? What are their qualitites? Does the order in which they are stacked matter? If so, what would change about the chord if the thirds were rearranged?

The Minor Triad

The outside notes in a close root position triad span a 5th. As we have just observed, if that 5th is a perfect 5th (7 half-steps), we can only fit a Major 3rd (4 half-steps) and a minor 3rd (3 half-steps) inside this area. But does changing the order make a difference? Observe…

If we consider a triad built on C (i.e. C is the root note) and we build in thirds our goal at this point is still to fill in that Perfect 5th (7 half-steps). However, let's instead start with the minor 3rd (3 half-steps) and then stack the Major 3rd (4 half-steps) on top of that.



We can see that the outside interval is still C – G which is a Perfect 5th – which gives the chord stability in our ears – but now the internal pattern of 3rds is reversed. Our chord, C – Eb – G, has a minor 3rd and a Perfect 5th above the root. So the Perfect 5th gives it stability but now we hear the third as minor instead of Major. Thus, when we organize the triad in this way, we have a change in chord quality, and we call this a "C minor" triad.

Compare the C minor triad to the C major triad from yesterday's lesson. What is similar and what is different? How might we use this difference to inform the way we build a minor triad?

_____

_____

_____

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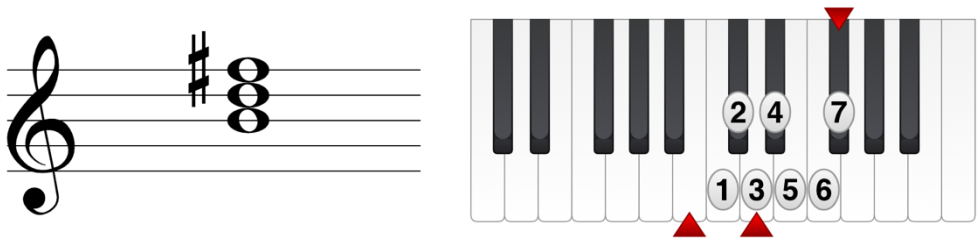
Let's try building another close root-position minor triad on the root B.

- First start on **B**
- Then build a minor 3rd (3 half-steps) above the root: **D**
- Finally build a Perfect 5th (7 half-steps) above the root; or we could think of this as also stacking a Major 3rd (4 half-steps) on top of the minor 3rd: **F#**

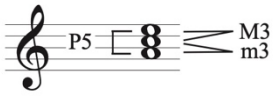


Just like with Major triads (and intervals in general), accidentals matter and we should be careful to place them next to notes when needed to build the correct triad structure. Also, like Major triads, when all of the notes in a minor triad appear in a given key signature, we call it a *diatonic* triad. Keep this in mind for later.

Closing: Check your understanding of the lesson by copying the following summary into your notes. Then complete the triads in the exercise that follows.

A root-position **minor triad** is composed of three notes stacked in thirds.

The interval between the bottom two notes (root and third) is a minor third (**m3**).
The interval between the top two notes (third and fifth) is a major third (**M3**).
The interval between the bottom and top notes (root and fifth) is a perfect fifth (**P5**).



Answers in this exercise are limited to **close root-position minor triads**.

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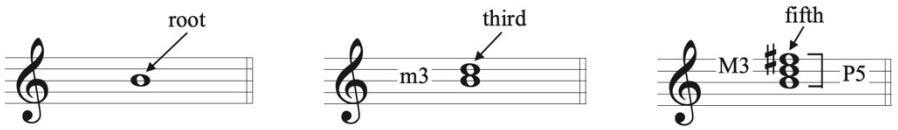
1. Create close root-position minor triads using the provided notes as roots.

Create the third of the triad by adding a note a m3 above the root.
Create the fifth of the triad by adding a note a P5 above the root (a M3 above the third).

Example



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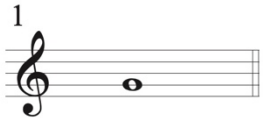

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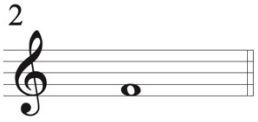

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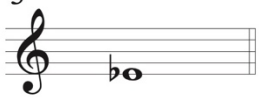

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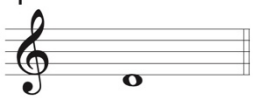

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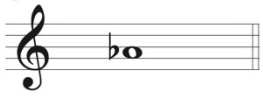

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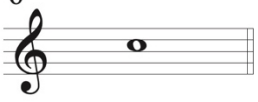

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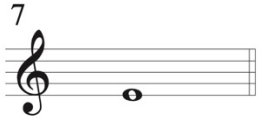

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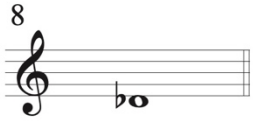


Thursday, April 2

Music Theory Unit: Triads
Lesson 4: Review Major and minor Triads/ Augmented and diminished Triads.

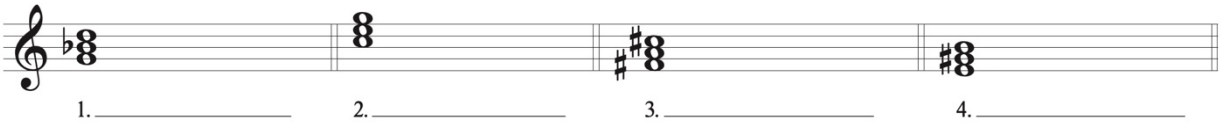
Lesson 4 Socratic Guiding Questions: Keep these questions in mind as you study!
The Perfect 5th in Major and minor triads provides stability. What would happen if the quality of the 5th changes? How could we stack 3rds to change the quality of the 5th?

Objective: Be able to do this by the end of this lesson.

1. Review major and minor triads
2. Define augmented and diminished qualities

Introduction to Lesson 4: Review of Major and minor Triads
Yesterday we observed that, much like intervals, triads can change their quality. When we have a root note with a Major 3rd and a Perfect 5th above it we call this a "major triad." And when we have a root note with a minor 3rd and a Perfect 5th above it we call this a "minor triad."

Name the following triads by their root note and quality. Remember the structural differences between Major and minor triads.



As we have observed, when we build close root position triads, either major or minor, the outside interval is always a Perfect 5th, which spans 7 half-steps. This means that in order to span the 7 half-steps we must combine a Major 3rd, which is 4 half-steps, and a minor 3rd, which is 3 half-steps, in order to complete the Perfect 5th. The order in which these thirds appear determines then the quality of the cord. If we start with the Major 3rd above the root, we get a Major triad and vice versa.

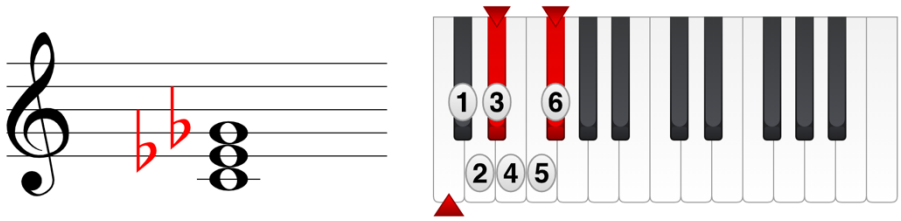
If we can think of triads in this way, that is, in the sequential stacking of thirds, are we limited to stacking in the ways that we have seen? If not, what are some other possibilities? What might change about the structure (or stability) of the chord?

Augmented and diminished Triads

If we think of triads as combinations of thirds, where the order of the thirds (either Major or minor) determines the quality, we could alternately combine two thirds of the same quality (e.g. m3 + m3 or M3 + M3). However, this too will change something about the structure of the triad.

Let's look first at what happens when we stack two minor 3rds together. For our purposes we will use C as our root note…

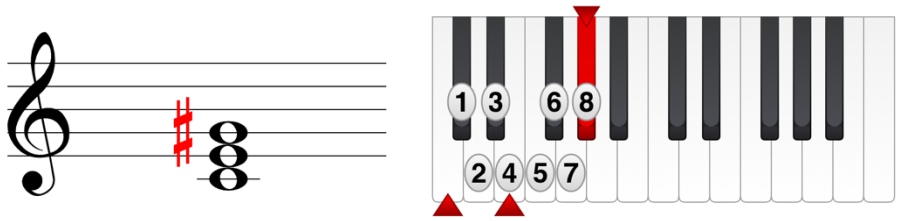
- First, we write the root note: **C**
- Then we move up a minor 3rd: **Eb**
- Finally, we stack another minor third above Eb which is: **Gb**



Notice then that when we stack two minor thirds (which are 3 half-steps each) our 5th spans a distance of 6 half-steps, where before in Major and minor triads it was 7 half-steps. In this case we have a triad which lacks the stability of that Perfect 5th because 6 half-steps are one half-step less than Perfect. We've seen this before in our discussion of intervals; we call this interval a *diminished* 5th, and consequently we will also call this triad by the same quality. This then is a "C diminished" triad.

Alternately, we could stack two Major 3rds. Let's retain C as our root note…

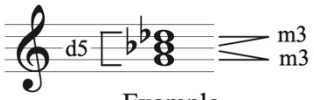
- First, we write the root note: **C**
- Then we move up a Major 3rd: **E**
- Finally, we stack another Major 3rd above E which is: **G#**



Notice that when we stack Major 3rds our 5th is now 8 half-steps, which is one more than our Perfect 5th (7 half-steps). Because this 5th is one half-step bigger than Perfect we call it *Augmented*, and we will also call this triad by the same quality: "C Augmented" triad.

Closing: Check your understanding of the lesson by copying the following summary into your notes. Then complete the triads in the exercise that follows.

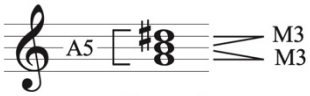
A root-position **diminished triad** is composed of three notes stacked in thirds.



Example

The interval between the bottom two notes (root and third) is a minor third (**m3**).
The interval between the top two notes (third and fifth) is also a minor third (**m3**).
The interval between the bottom and top notes (root and fifth) is a diminished fifth (**d5**).

A root-position **augmented triad** is composed of three notes stacked in thirds.



Example

The interval between the bottom two notes (root and third) is a major third (M**3**).
The interval between the top two notes (third and fifth) is also a minor third (M**3**).
The interval between the bottom and top notes (root and fifth) is an augmented fifth (A**5**).

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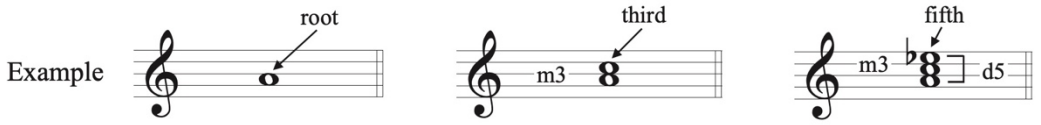
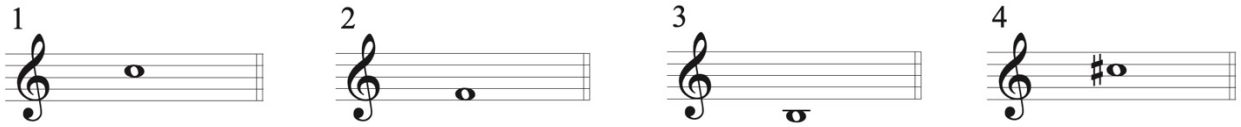
1. Create close root-position diminished triads using the provided notes as roots.

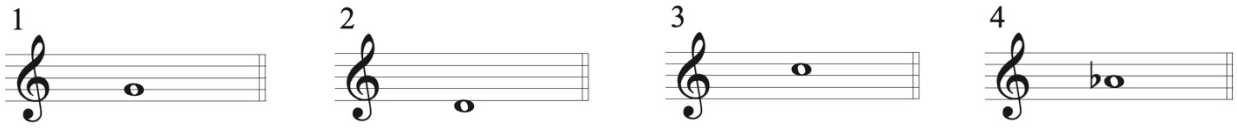
Create the third of the triad by adding a note a m3 above the root.
Create the fifth of the triad by adding a note a d5 above the root (a m3 above the third).





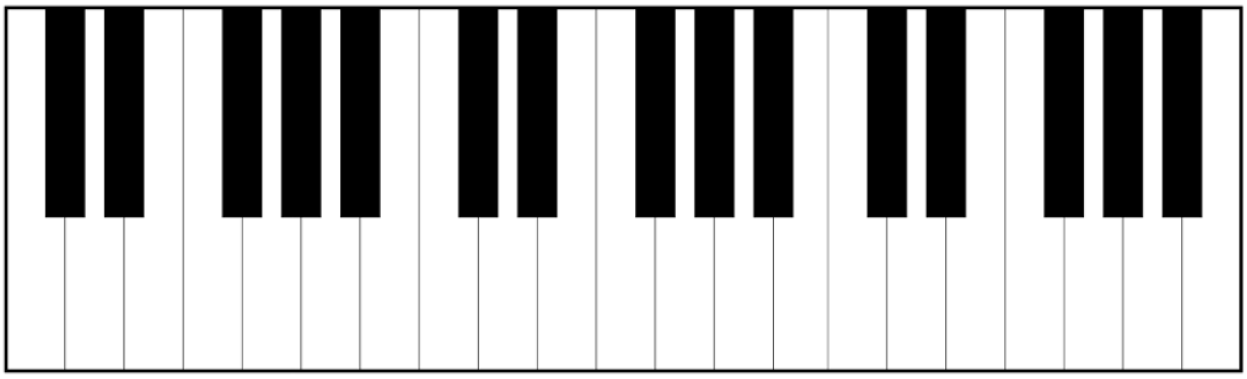
2. Create close root-position augmented triads using the provided notes as roots.

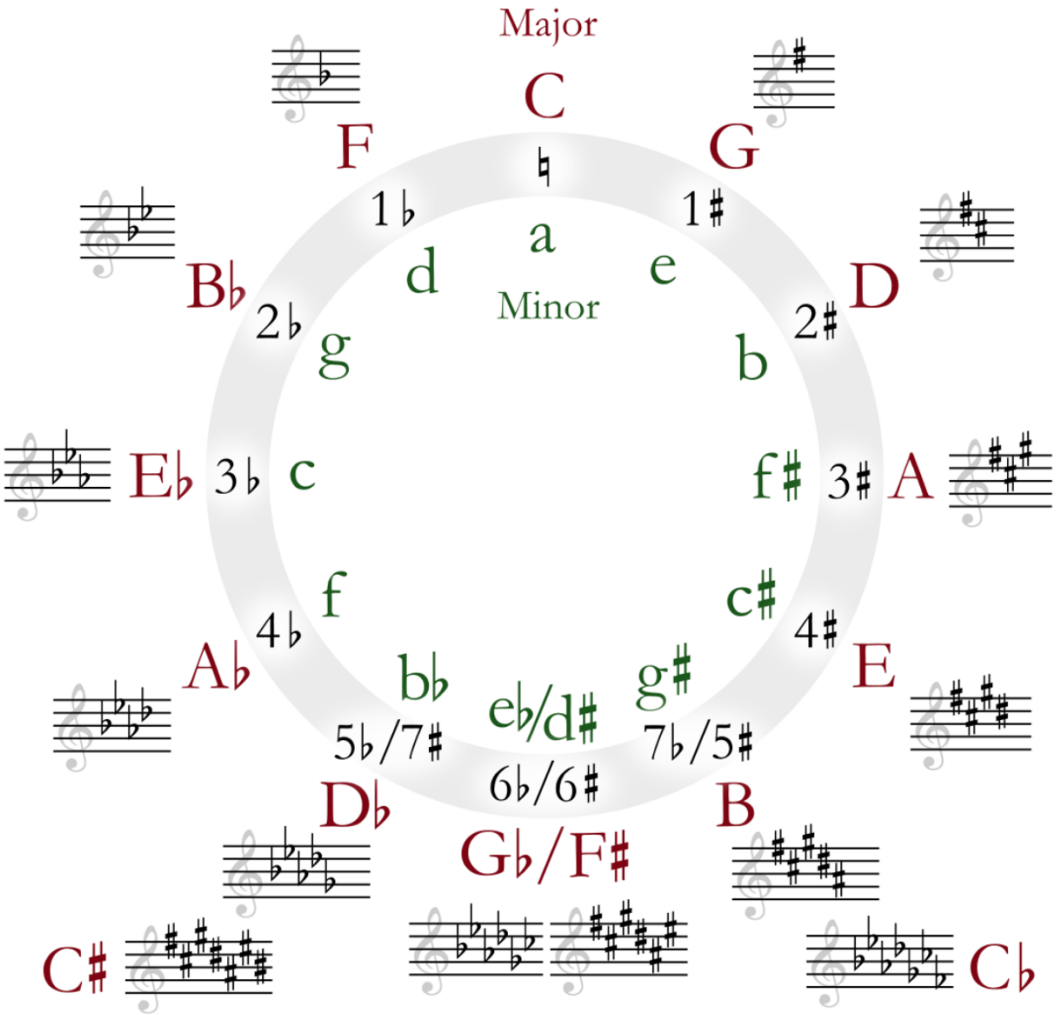
Create the third of the triad by adding a note a M3 above the root.
Create the fifth of the triad by adding a note an A5 above the root (a M3 above the third).



Music Theory Reference Sheet

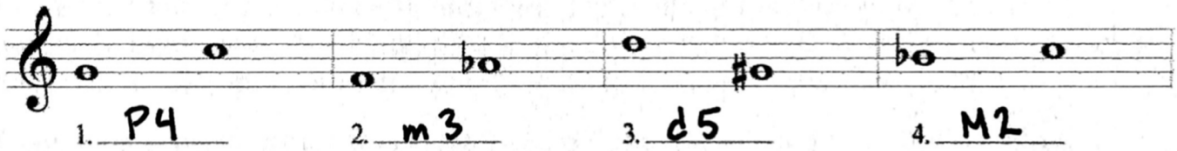
This sheet may be used as a study aid during the week's lessons





Answer Key

Monday, April 6



1. P4 2. m3 3. d5 4. M2

1) What was Gioseffo Zarlino's motivation to expand the perfect Pythagorean consonances? How did he aim to do this?

He wanted to create perfect harmony from the integers contained in the first perfect number: 6. He created interval ratios with the numbers 1-6 (e.g. 2:1, 3:2, 4:3, 5:4, 6:5)

2) Consider the notes in the chord in Ex. 15-1. Name them from the bottom up.

C, C, G, C, E, G

3) How many unique notes are in this chord (i.e. ignore doubled note names)? 3

4) What might we call a chord that has this many pitches in it? triad

Closing: Check your understanding of the lesson by answering the following questions.

1) During the sixteenth century, what advances were made in music theory and who was primarily responsible for these advances?

Gioseffo Zarlino motivated a change in music theory during the sixteenth century by establishing rules of harmony. His innovation expanded on the findings of Pythagoras and sought to create perfect harmony out of the perfect number - 6.

2) Based on your reading, what is a chord? How is it similar to, and how does it differ from an interval?

(Answers will vary)

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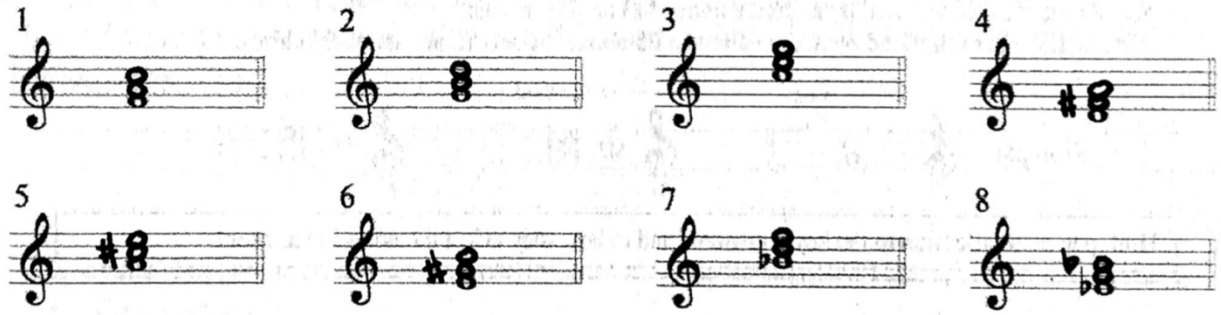
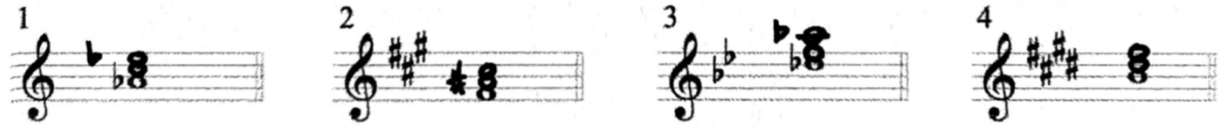
Tuesday, April 7

1) What is the interval from C – E? M3
2) what is the interval from C – G? P5



Wednesday, April 8

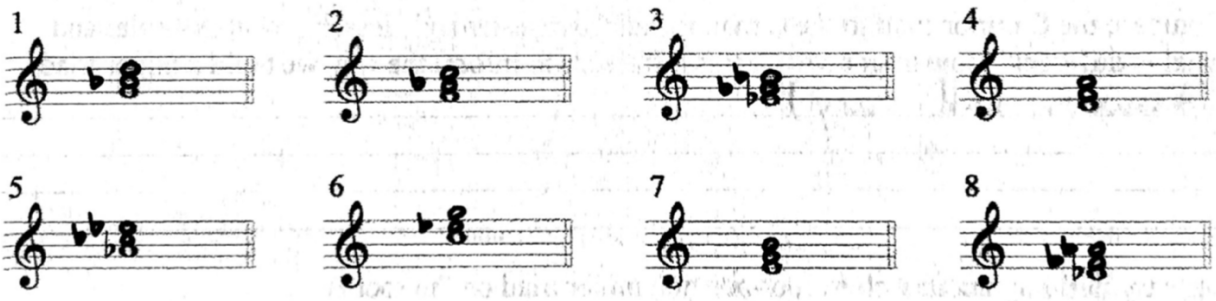


Consider the following: How many consecutive 3rds fit inside a Perfect 5th? What are their qualitites? Does the order in which they are stacked matter? If so, what would change about the chord if the thirds were rearranged?

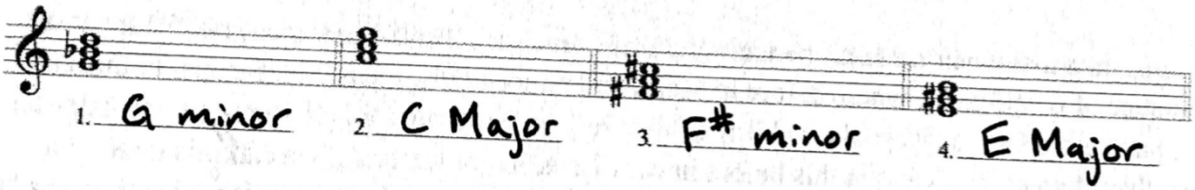
(Answers will vary)

Compare the C minor triad to the C major triad from yesterday's lesson. What is similar and what is different? How might we use this difference to inform the way we build a minor triad?

(Answers will vary)



Thursday, April 9



If we can think of triads in this way, that is, in the sequential stacking of thirds, are we limited to stacking in the ways that we have seen? If not, what are some other possibilities? What might change about the structure (or stability) of the chord?

(Answers will vary)

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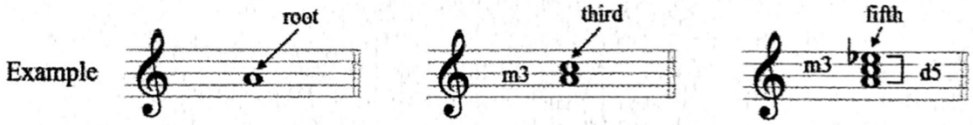

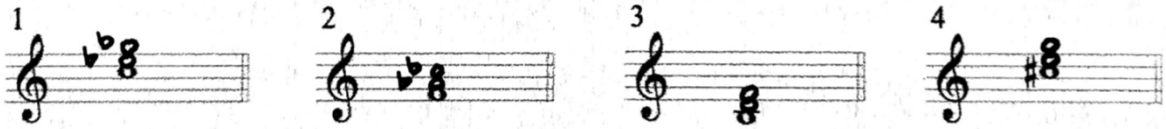

2. Create close root-position augmented triads using the provided notes as roots.

Create the third of the triad by adding a note a M3 above the root.
Create the fifth of the triad by adding a note an A5 above the root (a M3 above the third).