

Perfect Pitch Versus Relative Pitch Tutorial

By Jay Graydon

I offer this tutorial gratis for the San Luis Obispo County and LA County schools music departments. Please feel free to share with other schools and anyone you wish.

Introduction

It has been noted there are no shortcuts in music. Well, actually there is one I know of which is *perfect pitch*. Even if you have *perfect pitch*, the tutorial offers concepts that may be of interest — at least to discover how non-perfect pitch musicians develop techniques as to get as close as possible to your gift.

Regarding *perfect pitch* or *relative pitch*, great tools for playing your instrument, arranging, remembering songs or "parts" (thinking and remembering the first few intervals) and more. If playing a live gig, and you do not know the song being performed, you can hear the melody and chord changes as they are heard and mentally noted. After the first time through the song, you should have most of the song mentally noted.

The above paragraph concepts are easy for someone with *perfect pitch* BUT also easy for someone with highly developed *relative pitch*.

As far as I know, relative pitch is not taught in college. This should be a must for music majors even if you have perfect pitch.

Chapter 1: Perfect Pitch Versus Relative Pitch

What does perfect pitch mean?

Perfect pitch is the ability to immediately recognize any note(s) played, sung, or otherwise sounded. The misnomer is perfect pitch has nothing to do with singing "perfectly in tune" meaning singing the "exact" center of the pitch (singing "in tune" is another gift for sure!).

Perfect pitch is a gift!!! For those of us that did not receive the gift, don't fret (no guitar pun intended) as there are techniques leading to the development of "relative pitch" and tricks to find the "home note".

A musician with the gift of *perfect pitch* has a huge edge since no thinking involved — the note(s) heard immediately translate(s) into the note name(s)!!! The rest of us musicians need to spend time training/practicing *relative pitch* techniques — the practice is fun and very important regarding all aspects of musical growth.

Over the years, I have noticed there are degrees of *perfect pitch* ability. One day about twenty years ago I tested three incredible musicians with *perfect pitch*. Single notes are cake with anyone that has the gift so a serious test is to play a bunch of note clusters that are not chords (OK, they could have names so name the following cluster for fun. I will note the name but try to figure out first). I sat down at the piano and played clusters. For example: C-Db-Eb-E-F-F#-G#-B (if a chord name, it would be C b5 #5 maj7 b9 #9 11). All three incredible musicians proved to nail most notes but one fellow never missed!!! So just like most gifts, there are degrees.

OK, the guys tested were David Foster, Jerry Hey, and Amin Bhatia. No need to note the talent of Foster and Hey. Amin was a young brilliant synth player and David was helping him out to get composing work. Amin was the guy that never missed!!!

What does relative pitch mean?

The trained ability to recognize note intervals.

The purpose of this tutorial is to teach such note interval recognition as well as techniques that will allow you to find the “home note” in less than two seconds — sweet!!!

As soon as the *home note* reference is established, the *home note* is used to figure out the name of any note you hear using *relative pitch* interval thinking. The result is very close to having perfect pitch!!! Yea, the techniques shall be explained after a quick test and a story.

How do you know if you have perfect pitch?

Ask another musician to play random notes on the piano (or most any melodic instrument). If you can easily name the notes heard without any help (as noted above in “What does relative pitch mean?”), you have perfect pitch.

Most people that have perfect pitch usually find out they have the gift from a music teacher that cares about their students. The following story will explain such a discovery and my introduction to the concept of a work-around using *relative pitch* techniques.

The Jim Allan story

During the year 1964 (I was 14 years old), I met a bass player named Jim Allen who helped my early musical growth in a big way! Jim has *perfect pitch* and that was my introduction to the concept.

Jim stated he did not realize *perfect pitch* was a gift (until discovered), and as typical with such thinking of not knowing he has the gift, he thought everyone could immediately name notes heard. When Jim was in Jr. high school, in band class, the music teacher would help *tune up* the musicians, using a pitchfork. When the music teacher approached Jim, he had tuned the upright bass using his ears. The music teacher asked how he *tuned up* and Jim said, "I just tightened or loosened the strings until they were in tune". The music teacher thought Jim was mentally messing with him using a hidden pitchfork (whatever tuning tool). The music teacher gave Jim a "C" (instead of a deserved "A") on his report card.

Around a year later, when Jim was studying with a private music teacher, the teacher thought Jim may have perfect pitch and tested him using the non-visual piano blind test (Jim was not allowed to look at the piano keyboard). Obviously he passed with flying colors.

Important: the lesson so far is if you teach, or will teach music, test students for perfect pitch!

Other than Jim's ability to name any note heard, I was floored when he could listen to a record and write down the chords in real time! I am talking about "standards" like Misty with many chord changes. (We will get into *cord recognition* in "Chapter 3: Learning To Recognize Chord Voicings").

Since I was not born with *perfect pitch*, I asked Jim if there is way as to develop a similar tool. Jim noted *relative pitch* is the alternative and he was kind enough to teach me how to recognize intervals as to develop *relative pitch*. When spending time with Jim, I was a sponge soaking up all details!!!

Over the years I have added tricks. One more thought before we get into the development of relative pitch.

The perfect pitch gift trade off

"Perfect pitch" is surely a blessing but a possible nightmare under certain circumstances.

The gift

As mentioned, no work regarding the note recognition process since the brain will tell the person the name of the note "automatically".

The down sides

The *out of tune* down side: A possible nightmare if the piano (or any instrument) is extremely "out of tune" meaning that the pitch is "flat" (or sharp) in general and stuck "between pitches". Jim told me that he once played a gig in which the piano was so out of tune, he physically became sick.

Other possibilities include an analog cassette recorder/player that plays a tape at a slower or faster speed than the machine it was recorded on (very common).

The *transposition* down side: Transposing while "reading music" in the original key must cause the brain to be confused. I assume transposition must require a brain shift of some sort requiring a thinking step to temporarily shut *off perfect pitch* mode. In any case, this must be a learned technique.

The *concert pitch* downside: The easiest way to explain concert pitch to think piano pitch — piano is a non-transposing instrument using *concert pitch*.

If you are a horn player or any player that plays a transposed instrument and after finding out you have perfect pitch, there must have been some confusion regarding *concert pitch* and a learned technique as to adapt.

Developing Relative Pitch

(Note: the following is a huge bonus regarding sight singing. More on that subject later in "Chapter 4: Sight Singing".

After learning the basic logic from Jim, I came up with a loose plan and the following was the way I approached the situation. (I have improved the layout over the years and will include as things develop).

Note that writing in the first person (most of the time) reads like "dig me" land. That is not my intention — the only way to relate the information is from my experience.

The starting place was to learn the interval step/degree numbers in the "major scale". As we know, in the key of "C" (all white notes):

C is step/interval #1
D is step/interval #2
E is step/interval #3
F is step/interval #4
G is step/interval #5
A is step/interval #6
B is step/interval #7

I would play the "C" scale on the piano or guitar, stop, and for example think of the pitch of 5th degree of the scale ("G" note) and then sing the note. I would check to see if I was correct by playing the "G". I would practice this routine with all of the 7 degrees of the "C" major scale.

After embedding all of the 7 major scale intervals in my brain as to think of and or sing instantaneously, it was time to learn chromatic intervals meaning the recognition of all 12 notes. I had an edge since as a guitarist, I was learning about chord shapes and some notes really stuck out such as b9 (Db relating to the key of "C") and the flat 5 (Gb relating to the key of "C"). In a short period of time, all extensions (chromatic notes) were easy to think of/hear. More on note recognition later in "Chapter 2: Working With Interval Thinking".

As to progress, I began thinking about ways to take the ear training/note thought process to the next step. It was time to think of scales and chord shapes thinking of the notes and names as sung. Such scales would include dominant 7th, minor shapes, diminished shapes, augmented shapes and all "altered chord scale shapes" I could think of. More on chord recognition later in "Chapter 3: Learning To Recognize Chord Voicings".

Discovery of the “Home Note”

So far I had learned to recognize intervals but did not yet have a way to find the name of the first note heard (or thought of) without the help of a musical instrument. Example: I would hear a song on the radio and could easily decipher simple melodies thinking in intervals BUT I did not know what key the song was in. I would relate to the key of C (or other keys for practice) but again, no idea of the key of the song.

It was time to figure out techniques to quickly find a note (the *home note*) that would be pitch accurate and repeatable time and time again. As soon as the *home note* reference is established, it is used to figure out the name of any note heard using interval thinking.

Home note techniques:

- *Pitch Pipe or Pitchfork*. This is cheating in the long run but always a good reference while developing the following. (Ok, this technique is not really cheating if there is no other way to find the home note using the following techniques since you can always have a pitch pipe or pitchfork in a pocket).
- *Highest note you can whistle*: Whistle as high as you can and reference this note using a piano or your instrument. If referencing to an instrument that is not concert pitch (most brass and woodwinds) reference your thinking to concert pitch.
- *Sung note*: basically the same as the above using the lowest note sung. My experience is not as accurate as the whistle technique BUT you may find the opposite to be true for you.
- *Noted song key*: A good friend of mine (Marcus Ryle) hipped me to this trick. Some songs stick in your brain along with the key. Think of the song and think of the key. If trying out this technique, practice as usual as to make sure the trick will be accurate every time.

The process I went through finding the *Home Note*

The first technique I came up with was the sung low note. In 1964 I discovered that the lowest note I could sing was an "E". I would sing the "E", then sing "E" up one octave. "E" is the major 3rd interval of a "C" major scale. I would now mentally count back 2 whole steps and think/sing "C". I would play a "C" on the guitar or piano as to check. So why would I not check the "E" instead? The following will explain.

When I first started working on the technique, I would have people test me often as to develop. (If wanting to practice this technique on your own, this will be explained in the section "Practice Tips". see the

Let's assume that someone was testing me using a piano (whatever instrument) with no visual note reference. The reason I want to think "C" is because this is the easiest key to *think in*. I would compare the "C" I was thinking to the note played and would easily relate to the "interval". Let's say that the interval played was a major 6th up (or a minor 3rd down) from the "C" equaling the note "A".

So I was thinking of "C" and hearing an "A" but have not yet discovered that is the name of the note heard. I would go up the major scale steps (mentally count up the scale and or sing/whistle intervals), when arriving (matching) to the note played on the piano, it would be "A". If counting backwards, I would count down three steps in the same fashion noting "A" as the note.

Note, you may think that thinking in a chromatic note fashion would be best. In general, not in my case since I do not typically think in a chromatic fashion but in an interval or non-chromatic scale fashion as to start. If I am stuck, I use the chromatic scale approach but only as a last resort. OK, I assume that some will be very comfortable thinking chromatically. What ever works for you is all that matters.

A good idea to learn to think upwards and downwards since many times you may get thrown off if the note you are hearing is very high or very low.

Example: let's say the note heard is in a high register. Counting up and or thinking up a 6th may be difficult — in this case, easier to work in reverse as to get into a comfortable thinking range. If still too high of a pitch and that is throwing you off, mentally drop the pitch an octave. Yea, the same in reverse if a low note needing to be shifted up an octave. You may want to mentally shift another octave for easier thinking. No problem and in a very short period of time, that will become automatic thinking.

So the name of the note is "A". I would then think of "C" again and ask for another note as to continue the practice.

After discovering the first note "named" was correct, "interval thought" from there on was the next thing to learn. After a short period of time, I could name the note as soon as I heard it. Not just thinking of the "C" *home note* but thinking in intervals from the last note heard to the next note heard.

This came about practicing in all keys meaning singing/thinking the "E" and immediately transposing this note to any key. An example would be to sing the low "E"; think up a "5th" which is "B". I would then think in the key of "B" while having random notes played on the piano or any instrument. Learn all the interval names in all keys and you will have a huge musical advantage in so many areas!!!

The singing technique for me turned out to be sloppy over time. If tired or dealing with a *cold*, my voice would drop in range. Further, age typically drops the vocal range slightly lower. Smoking will surely lower the range over time.

It was time to come up with options as to find the "home note". It's funny how simple solutions can be so obvious and not discovered for years. I never whistled in the past as a musical way to note melodies but one day I decided to whistle the highest note I could force out. To my surprise, the note is a "C" and has remained so from many years to date. In my case, it seems age is not affecting the whistle pitch. (Note while writing the tutorial, I am occasionally whistling my *home note* while listening to the TV jazz channel as to note the key and chord changes. Good practice on that level as well as multi tasking!)

What a treat!!! I discovered a way to find "C" in a split second!!! This technique works very well for me.

OK, the whistling technique may not be pitch stable for you but no matter since you will surely find a technique that will work. Along those lines, the next section may be of help if the above techniques are not stable for your *home note*.

Important: After finding a technique that works for you, practice often and check with your musical instrument as to make sure the pitch area is correct.

Other concepts as to find the Home Note

Visual: Throughout development stages, I never thought a visual would matter. Quite the antithesis since one day I realized I could look at a piano keyboard, look or think of a note on the keyboard and name the note before I played the piano key. Hey, is this a gift I did not realize? (Why I am talking to myself <g>). Possibly but not sure since I never asked anyone if they could do the same. Probably a slight brain wiring tap leading to a tiny musical shortcut.

The only problem with this concept for me is I need to actually see the piano and not just imaging the keyboard in my mind — brain wiring again. This is something I could possibly fix this with practice but no need since my “C” whistle is very accurate leading to the relative pitch interval chase.

My instrument is the guitar. You might think I would be able to do the same as with the piano meaning looking at the guitar (not playing it yet) and hear the thought of note before playing it. Well, I can most of the time but not as accurate as with piano. After thinking about this, brain wiring again! In this case, the logic leads to the fact the piano has only one pitch possibility per note. My mind seems to like the visual that way. When holding the guitar before playing a note, since many possibilities to play the same note a few strings, my mind needs more time to process.

How does your brain function with the above in mind? So many possibilities so go on the hunt as to discover your techniques for quick note recognition.

Ear ringing: Some people have a constant ringing pitch in their years. I hope you do not have constant ear ringing but if you do, as long as the pitch never changes, a very easy way to find the home note. Probably a high pitch so as mentioned in shifting octaves, do so if needed.

Body sounds: No rules on the “home note find” so if there is a pitch sound you can always repeat using body parts (obviously without harming yourself), do so. Yea, hand under the armpit squeezing making the funny noise may work as a repeatable pitch home note. OK, this is silly but the key is to leave no stone unturned on the hunt for finding your *home note*.

Familiar sounds: A few other tricks have been realized over the years when listening to recordings. If you are a guitar player or bass player, “open strings” have a different sound than fretted strings. This will allow immediate note recognition. Any player that plays an instrument which utilizes “open and fretted strings” will relate to this concept.

Guitar "open chord voicings" all have a distinct sound, which is easily recognizable — use to your advantage.

Possible problems: If a "CAPO" is used on the guitar (see sidebar), you may be fooled. Further, in this era, some rock guitar players (other styles as well) tune down to Eb or D. The logic is to always check using your *home note* as to be sure.

Sidebar:

A CAPO is used on the guitar neck as to transpose to other keys allowing open chord voicings. The unit straps across all strings over any fret. This is very typical in country and folk music.

Ear Clog

Before we move on, we know that having a "cold", serious allergies (or the like), temporarily clogs the ear cavities. My experience is pitch may become confusing causing frustration. Maybe the cause is not clearly hearing overtones. In any case, in a short period of time, the ears open back up and you are back to normal.

Chapter 2: Working With Interval Thinking

As you become comfortable with recognizing intervals, after you find the *home note*, you'll be amazed how you can pick out the names of notes quickly using relative pitch!

As we know, a note such as a C# is also Db. It has been said some classical musicians that play instruments in which pitch can be varied (such as string players, woodwind players, and horn players) state they pitch either note slightly different as per the key signature. Just passing along information gathered along the way but no matter for this study.

In any case, either C# or Db could be the pitch name which is set forth regarding the key and or scale degree step. Yea, as we know, C# would be used in sharp keys and Db would be used in flat keys. Ok, sometimes a note may have a sharp sign in a flat key. A few reasons that could happen such as modulating to a sharp key without noting the modulation key signature, or simply a brief harmonic shift using a chord structure that would require a bunch of double sharps or flats. Long story and no matter in this study since pitch is pitch and the optional note names will follow a mental shift when realizing a key center change.

Ok, as to keep simple, for our purpose, we want to think in scale land relating to the proper name of the note per use in chord structures.

Key of C with all notes in two octaves

This also relates to note names used in chord structures. This is more of a reference for now. When we get to “Chapter 3: Learning To Recognize Chord Voicings”, the chord extensions notes in parenthesis below will make more sense.

Scale degree 1 = C (the root of the chord)
Scale degree flat 2 (b2) = Db (never noted in chord names)
Scale degree 2 = D
Scale degree flat 3 = Eb
Scale degree 3 = E
Scale degree 4 = F
Scale degree #4 = F# (never noted in chord names)
Scale degree flat 5 = Gb (same note as #4)
Scale degree 5 = G
Scale degree #5 = G#
Scale degree flat 6 (b6) = Ab (never noted in chord names and same note as #5)
Scale degree 6 = A
Scale degree flat 7 (dominant 7) = Bb
Scale degree 7 = B
Scale degree 8 = C (never noted in chord names)

Scale extensions

Scale degree flat 9 (b9) = Db
Scale degree 9 = D
Scale degree #9 = D#
Scale degree flat 10 (b10) = Eb (never noted in chord names)
Scale degree 10 = E (never noted in chord names)
Scale degree 11 = F
Scale degree #11 = F#
Scale degree flat 12 (b12) = Gb (same note as #11 and never noted in chord names)
Scale degree 12 = G (never noted in chord names).
Scale degree flat 13 (b13) = Ab (rarely noted in chord names)
Scale degree 13 = A
Scale degree flat 14 (b14) = Bb (never noted in chord names)
Scale degree 14 = B (never noted in chord names)

As to save you time writing out intervals in each key, see “Chapter 5: Locking In Interval Thinking In All Keys “ (the last section in this tutorial allowing for easy reference).

Let’s get to work in interval thinking. Find your home note without the help of your instrument. If not concert C, using relative interval thinking, go to concert C and lock it in your brain. Check to make sure this is correct with your melodic instrument (if a transposing instrument, adapt to concert pitch).

Lets start with the major scale. As to start, we will use the key of C for easy thinking.

Major scale

C is step/interval #1
D is step/interval #2
E is step/interval #3
F is step/interval #4
G is step/interval #5
A is step/interval #6
B is step/interval #7

The logical way to start is to simply go up the scale.

2nd step (2nd scale degree): In the key of C, The note would be D. Sing or whistle the note and keep in mind the name of the note and then check with your instrument. If not correct, go back to your *home note* and think D, then sing or whistle. If having problems, keep repeating the process — don't become frustrated since in a short period of time, you will become familiar with the interval.

Do the same with the rest of the intervals going up the scale. After becoming comfortable, try random orders.

An example of random order would be:

5th degree (G)
2ND degree (D)
7th degree (B)
6th degree (A)
3rd degree (E)
4th degree (F)

Write out other random orders as to practice.

Minor scale

C is step/interval #1

D is step/interval #2

E_b is step/interval #3 (minor 3rd)

F is step/interval #4

G is step/interval #5

A_b is step/interval #6 (flat 6)

B_b is step/interval #7 (flat 7)

2nd step (2nd scale degree): In the key of C, The note would be D. Sing or whistle the note and keep in mind the name of the note and then check with your instrument. If not correct, go back to your *home note* and think D, then sing or whistle. If having problems, keep repeating the process — don't become frustrated since in a short period of time, you will become familiar with the interval.

Do the same with the rest of the intervals going up the scale. After becoming comfortable, try random orders.

An example of random order would be:

3rd degree (E_b)

7th degree (B_b)

5th degree (G)

2ND degree (D)

4th degree (F)

6th degree (A_b)

Other scales

There are many other scales such as diminished, augmented, and so many altered scales. Practice those if you like but let's cut to the chase and use the chromatic scale.

The chromatic scale

Scale degree 1 = C

Scale degree flat 2 (b2) = Db

Scale degree 2 = D

Scale degree flat 3 = Eb

Scale degree 3 = E

Scale degree 4 = F

Scale degree #4 = F# (could also be scale degree flat 5 = Gb)

Scale degree 5 = G

Scale degree #5 = G# (could also be scale degree flat 6 = Ab)

Scale degree 6 = A

Scale degree flat 7 (dominant 7) = Bb

Scale degree 7 = B

Scale degree 8 = C

Flat 2nd step (flat 2nd scale degree): In the key of C, The note would be Db. Sing or whistle the note and keep in mind the name of the note and then check with your instrument. If not correct, go back to your *home note* and think Db, then sing or whistle. If having problems, keep repeating the process — don't become frustrated since in a short period of time, you will become familiar with the interval.

Do the same with the rest of the intervals going up the scale. After becoming comfortable, try random orders.

An example of random order would be:

Flat 5th degree (Gb) (same as #4th degree = F#)

Flat 7th degree (Bb)

2ND degree (D)

5th degree (G)

7th degree (B)

Flat 3rd degree (Eb)

Sharp 5th degree (G#) (same as flat 6th degree = Ab)

4th degree (F)

Flat 2ND degree (Db)

3rd degree (E)

6th degree (A)

Thinking in other keys

So far we have been thinking in the key of C. Best to learn interval thinking in all keys relating to the scale step note names — this will be very useful in the long run. Ok, with that in mind, using the above scales, practice in all keys.

See “Chapter 5: Locking in Interval Thinking In All Keys” for the key/note tables.

Circle of 4ths — flat keys

Flat keys. F-Bb-Eb-Ab-Db-Gb-Cb. Ok, there are keys beyond those that use double flats. In all of my years as a studio guitarist, I never saw music in keys that used double flats. Practically, we stop at Cb (rarely used).

Circle of 5ths — sharp keys

G-D-A-E-B-F#-C#. Ok, there are keys beyond those that use double sharps. In all of my years as a studio guitarist, I never saw music in keys that used double sharps. Practically, we stop at C# (rarely used).

Practice Tips!

The thought process of "relative pitch" needs practice as to maintain and grow.

Working with another musician

This is a great way to work since both of you can test each other. Using piano (whatever instrument), test each other.

- Find your *home note* and have your friend play one note.
- Name it. Ask if you are correct. If not, rethink and try again.
- In any case, after naming the note correctly, repeat the process having your friend play another note and so on.
- After working the process for as long as you like, do the same for your friend testing him/her.

This type of practice is excellent as well as all of the following.

Record Random Notes

- If working on your own, write out random notes on music paper. On the music paper, at the top, write *pattern #1*.
- Write out as many notes as you like but no less than 20 to start.
- Put the cassette recorder (whatever recorder) in record mode and verbally state *pattern #1*.
- Play the notes on piano (or your instrument if not piano) and record. Play the instrument slowly as to start.
- Now write out another random pattern and repeat the process. Note this is *pattern #2*.
- Now write out another random pattern and repeat the process. Note this is *pattern 3*. Do this as many times as you like.
- Since you have written out at least three patterns and recorded, time to check the results.
- After recording, wait awhile as to forget the written patterns.
- Find your *home note* and play the tape (whatever recorded medium).
- As the notes are heard, as you figure out the note names using your *home note* and *relative pitch*, write down the names of the notes on music paper or plain paper.
- After doing the test, compare the notes to the notes originally written down for the test.

How did you do? If you missed some notes, take the test again. Repeat the test until you nail all the notes.

Now go to the next pattern and so on.

As you start nailing notes quickly, when writing out the notes and recording further tests, play the notes faster.

Practicing away from your typical practice environment

Other than serious practicing, the following concepts are great ways to practice! You can practice anywhere without an instrument, which makes practicing easy and fun.

- One of the best places to practice is when driving or riding in a car (airplane and train, etc.). Find your *home note* and practice singing intervals noting the name of the note sung.
- When listening to the radio, CD, etc., find your *home note* and practice singing intervals noting the name of the note you are singing.
- When in the bathroom, take advantage of the alone time and practice. Note, I once wrote a chorus melody for a Grammy winning song while in the bathroom — a great place to musically think).

Chapter 3: Learning To Recognize Chord Voicings

If you play a chordal instrument, you are familiar with chord structures. Even so, you may want to read this section.

You will need access to a piano as to help hear the notes in the chord played together.

So the next stage in *relative pitch* development is to learn "chord shape recognition" meaning the structure of notes within the chord. I kind of touched on that in Chapter 2 and now time for the full details.

If you can hear the difference between a major chord and a minor chord, you have the ears to learn all the alterations. After you learn all of the chord shapes, you will be able to recognize such chords when listening to CDs (any playback medium).

As we know, a note such as a C# is also Db. As we know, either C# or Db could be the pitch name which is set forth regarding the key and or scale degree step. For our purpose, we want to think in chord logic land of harmonic structure regarding names of chords. For example, in the key of C, scale degree 1 (the root of the chord) is C. I have never seen a chord that stated C (#1) — that would be a C# note added to the chord and not correct thinking. Instead, if wanting a C# in the chord, it would be a Db and would be noted as a flat 9 (b9). Ok, it could be a flat 2 (b2) if wanting a C and a Db played next to each other but I have never seen a chord noted as a flat 2 (b2). The concept here is to stay in the scale thinking relating to chord structure.

I will not state redundancies regarding such notes and will stay within the logical harmonic path for each key as per their scale degree steps. I have noted the following "Key of C with all notes in two octaves" in Chapter 2. Time to revisit.

Key of C with all notes in two octaves

Scale degree 1 = C (the root of the chord)

Scale degree flat 2 (b2) = Db (never noted in chord names)

Scale degree 2 = D

Scale degree flat 3 = Eb

Scale degree 3 = E

Scale degree 4 = F

Scale degree #4 = F# (never noted in chord names)

Scale degree flat 5 = Gb (same note as #4)

Scale degree 5 = G

Scale degree #5 = G#

Scale degree flat 6 (b6) = Ab (never noted in chord names and same note as #5)

Scale degree 6 = A

Scale degree flat 7 (dominant 7) = Bb

Scale degree 7 = B

Scale degree 8 = C (never noted in chord names)

Scale extensions

Scale degree flat 9 (b9) = Db

Scale degree 9 = D

Scale degree #9 = D#

Scale degree flat 10 (b10) = Eb (never noted in chord names)

Scale degree 10 = E (never noted in chord names)

Scale degree 11 = F

Scale degree #11 = F#

Scale degree flat 12 (b12) = Gb (same note as #11 and never noted in chord names)

Scale degree 12 = G (never noted in chord names).

Scale degree flat 13 (b13) = Ab (rarely noted in chord names)

Scale degree 13 = A

Scale degree flat 14 (b14) = Bb (never noted in chord names)

Scale degree 14 = B (never noted in chord names)

As to save you time writing out intervals in each key, see “Chapter 5: Locking In Interval Thinking In All Keys “ (the last section in this tutorial allowing for easy reference).

Use the above scale/chord notes for a reference when needed.

Important: we will use the key of C for the following. After you are comfortable in the key of C, learn the following in all keys.

Triads

There are four basic triads.

Major triad

Scale degree 1 = C (the root of the chord)

Scale degree 3 = E (the major 3rd of the chord)

Scale degree 5 = G (the 5th of the chord)

Major augmented triad

Scale degree 1 = C (the root of the chord)

Scale degree 3 = E (the major 3rd of the chord)

Scale degree #5 = G# (the #5th of the chord)

Minor triad

Scale degree 1 = C (the root of the chord)

Scale degree b3 = Eb (the minor 3rd of the chord)

Scale degree 5 = G (the 5th of the chord)

Diminished triad

Scale degree 1 = C (the root of the chord)

Scale degree b3 = Eb (the minor 3rd of the chord)

Scale degree b5 = Gb (the b5th of the chord)

Lets use these four as to start.

Major triad

Scale degree 1 = C (the root of the chord)

Scale degree 3 = E (the major 3rd of the chord)

Scale degree 5 = G (the 5th of the chord)

1. Find your home note without the help of your instrument. If not concert C, using interval thinking, mentally go to C and lock it in your brain and sing or whistle the C.
2. Check to make sure this is the correct pitch by playing C on the piano. It should be by now or at least very close.
3. Think of the 3rd of the chord (E). Sing or whistle the note and keep in mind the name of the note and then check with the piano.
4. Think of the 5th of the chord (G). Sing or whistle the note and then check with the piano.
5. Play the chord on the piano and then go back to step 1 through step 4 one more time as to lock into your brain.

Note: A very easy way to think of the 5th interval is to note rock songs that use the root and 5th on guitar. Such music must have been planted in your brain over the years whether you liked the style of that music, or not.

Also hearing a major 3rd should be very easy to hear as well since chords using a major 3rd are extremely common — more songs are in major keys versus minor keys. Typically, a chord with a major 3rd sounds happy.

(Major) augmented triad

Scale degree 1 = C (the root of the chord)

Scale degree 3 = E (the major 3rd of the chord)

Scale degree #5 = G# (the #5th of the chord)

1. Find your home note without the help of your instrument. If not concert C, using interval thinking, mentally go to C and lock it in your brain and sing or whistle the C.
2. Check to make sure this is the correct pitch by playing C on the piano. It should be by now or at least very close.
3. Think of the 3rd of the chord (E). Sing or whistle the note and keep in mind the name of the note and then check with the piano.
4. Think of the #5th of the chord (G#). Sing or whistle the note and then check with the piano.
5. Play the chord on the piano and then go back to step 1 through step 4 one more time as to lock into your brain.

This major structure is very dominant sounding wanting to resolve to another chord. The sound will become familiar quickly.

Minor triad

Scale degree 1 = C (the root of the chord)

Scale degree b3 = Eb (the minor 3rd of the chord)

Scale degree 5 = G (the 5th of the chord)

1. Find your home note without the help of your instrument. If not concert C, using interval thinking, mentally go to C and lock it in your brain and sing or whistle the C.
2. Check to make sure this is the correct pitch by playing C on the piano. It should be by now or at least very close.
3. Think of the minor 3rd of the chord (Eb). Sing or whistle the note and keep in mind the name of the note and then check with the piano.
4. Think of the 5th of the chord (G). Sing or whistle the note and then check with the piano.
5. Play the chord on the piano and then go back to step 1 through step 4 one more time as to lock into your brain.

A minor 3rd should be very easy to hear since it is darker than a major chord sound.

Diminished triad

Scale degree 1 = C (the root of the chord)

Scale degree b3 = Eb (the minor 3rd of the chord)

Scale degree b5 = Gb (the b5th of the chord)

1. Find your home note without the help of your instrument. If not concert C, using interval thinking, mentally go to C and lock it in your brain and sing or whistle the C.
2. Check to make sure this is the correct pitch by playing C on the piano. It should be by now or at least very close.
3. Think of the minor 3rd of the chord (Eb). Sing or whistle the note and keep in mind the name of the note and then check with the piano.
4. Think of the flat 5th of the chord (Gb). Sing or whistle the note and then check with the piano.
5. Play the chord on the piano and then go back to step 1 through step 4 one more time as to lock into your brain.

This chord is very dark sounding and will be easy to recognize quickly.

Chord extensions

Ok, the next step is to add extensions.

Note: I am voicing from the root up. In performance land, so many voicing possibilities for each chord, which surely requires another tutorial. So for now we will build up the chords from the root up as to learn to recognize the intervals and sound.

Note: I am going to mention the typical chord structures but there are more — yea, that would require another tutorial.

Practice the following as in the above triads and all keys.

The Pretty Major Chord Family

The key to pretty voicings is adding the 2nd, 6th, and 7th degree of the scale.

Major 2 pretty shapes

Chord structure	Typical chord name	Formula	Notes
"2" chord	C 2	1 2 3 5	(C D E G)
"add 9"	C add 9	1 3 5 9	(C E G D)

Major 6th pretty shapes

Chord structure	Typical chord name	Formula	Notes
Major 6th	C6	1 3 5 6	(C E G A)
Major 6/9	C 6/9	1 3 5 6 9	(C E G A D)
Major 6/7/9	C maj 6/7/9	1 3 5 6 7 9	(C E G A B D)

Major 7th pretty shapes

Chord structure	Typical chord name	Formula	Notes
Major 7th	C maj 7th	1 3 5 7	(C E G B)
Major 9th	C maj 9	1 3 5 7 9	(C E G B D)
Major 6, major 7 and 9	C maj 6/7/9	1 3 5 6 7 9	(C E G A B D)

The Dominant Family

In general, these chords typically want to resolve to another chord. Since these are “C” chords, the typical resolution would be an “F” chord shape.

Major dominant shapes

Chord structure	Typical chord name	Formula	Notes
7th	C7	1 3 5 b7	(C E G Bb)
9th	C 9	1 3 5 b7 9	(C E G Bb D)
Flat 5 th (with b7)	C7 b5	1 3 b5 b7	(C E Gb Bb)
Flat 9 th (with b7)	C7 b9	1 3 5 b7 b9	(C E G Bb Db)
Flat 5 th /9 (with b7)	C9 b5	1 3 b5 b7 9	(C E Gb Bb D)
Flat 5 th /flat 9 th (with b7)	C7 b5 b9	1 3 b5 b7 b9	(C E Gb Bb Db)
Sharp 5th	C #5 (C aug)	1 3 #5	(C E G#)
Sharp 5th/7	C 7 #5	1 3 #5 b7	(C E G# Bb)
Sharp 5th/7/9	C 9 #5	1 3 #5 b7 9	(C E G# Bb D)
7 th Sharp 9	C 7 #9	1 3 5 b7 #9	(C E G Bb D#)
Sharp 5th/7/#9	C 7 #5 #9	1 3 #5 b7 #9	(C E G# Bb D#)
6/7	C 6/7	1 3 5 6 b7	(C E G A Bb)
7 th 9 #11	C7 #11	1 3 5 b7 9 #11	(C E G Bb D F#)
13th	C13	1 3 5 b7 9 #11 13	(C E G Bb D F# A)
13 th b9	C 13 b9	1 3 5 b7 b9 13	(C E G Bb Db F# A)

Minor shapes

Chord structure	Typical chord name	Formula	Notes
Minor 7th	C min 7	1 b3 5 b7	(C Eb G Bb)
Minor 7 th /9 th	C min 9	1 b3 5 b7 9	(C Eb G Bb D)
Minor 7 th /9 th /11 th	C min 11	1 b3 5 b7 9 11	(C Eb G Bb D F)
Minor 7 th /9 th /11 th /13th	C min 13	1 b3 5 b7 9 11 13	(C Eb G Bb D F A)
Minor 6th	C min 6	1 b3 5 6	(C Eb G A)
Minor 6 th /9 th	C min 6/9	1 b3 5 6 9	(C Eb G A D)
Minor 6 th /9 th /11th	C min 6/9/11	1 b3 5 6 9 11	(C Eb G A D F)
Minor 7 th /b5	C min 7 b5	1 b3 b5 b7	(C Eb Gb Bb)
Minor 7 th /b5/9 th	C min 9 b5	1 b3 b5 b7 9	(C Eb Gb Bb D)

Diminished shapes

In the diminished 7th chord, every note in the chord is a minor third away from each other — this leads to the fact every note in the chord could be the root, b3, b5, and bb7. What I am saying is the root of the chord could be C – Eb – Gb – A.

Chord structure	Typical chord name	Formula	Notes
C diminished 7	C dim 7	1 b3 b5 bb7	(C Eb Gb A)

Adding extensions past the above typically turns the chord into other chord names — yea another tutorial is needed for such information.

The diminished 7th chord could also be a dominant 7 flat 9 chord. There is no root of the chord in these voicings! Note these are the same notes as in the above diminished chord! Here are the examples:

Chord structure	Typical chord name	Formula	Notes
7 th flat9	B 7 b9	b9 3 5 7	(C D# F# A)
7 th flat9	D 7 b9	b7 b9 3 5	(C Eb F# A)
7 th flat9	F 7 b9	5 b7 b9 3	(C Eb F# A)
7 th flat9	Ab 7 b9	3 5 7 b9	(C Eb Gb A)

Suspended shapes

There is no 3rd in this following chord shape — the 2nd is used instead.

Suspended shapes

Chord structure	Typical chord name	Formula	Notes
Sus 2	C sus 2	1 2 5	(C D G)

There is no 3rd in this following chord shape — the 4th is used instead. Ok, the 11th may be used instead depending upon how the chord is built.

Suspended shapes

Chord structure	Typical chord name	Formula	Notes
Sus 4	C sus	= 1 4 5	(C F G)
7 th Sus 4	C 7 sus	= 1 4 5 b7	(C F G Bb)
Sus 4/7/9/11	C 7/11	= 1 5 b7 9 11	(C G Bb D F)

So many other chords and voicings but as noted, that is another tutorial.

Chapter 4: Sight Singing

This will be a very short chapter since you now have the tools to nail the concept!

When I was in college in musicianship class (most all quality musicians) many of the students had trouble with sight singing — not me! I nailed this stuff since I had spent the time to learn relative pitch. I did not need to practice the many exercises in the book used for the class since I had done my homework years beforehand learning *relative pitch*.

Since you are comfortable with recognizing the note intervals in all keys, sight singing music notation is cake!!!

So why care about sight singing? Hey, you can look at written melodies and learn without the help of your instrument!

Double flats and double sharps

When seeing double flats, don't panic — simply shift your thinking back a whole step. Except for C and F, all other double flats are natural notes back one whole step. Here is the table and very easy to remember.

C double flat = Bb
 D double flat = C
 E double flat = D
 F double flat = Eb
 G double flat = F
 A double flat = G
 B double flat = A

Yea, when seeing double sharps, don't panic — simply shift your thinking up a whole step. Except for E and B, all other double sharp are natural notes up one whole step. Here is the table and very easy to remember.

C double sharp = D
 D double sharp = E
 E double sharp = F#
 F double sharp = G
 G double sharp = A
 A double sharp = B
 B double sharp = C#

Chapter 5: Locking in Interval Thinking in All Keys

This section is the reference section regarding “Chapter 2: Working With Interval Thinking”.

Keep this in mind — in sharp keys requiring double sharps and flat keys requiring double flats, I am not going to note since that thinking is not practical for quick note recognition.

The layout is twofold — *note names* and *chord structure thinking*. We will follow notes up the scale and not worry about chord structure thinking in full AFTER one example in the key of C. (Yea, I noted the following layout in above sections. *Redundancy is a good thing in this case*).

Regarding chord structures, there are some notes that have two names — the #4 and b5 are the same note with different names but there is no #4 noted in chord structures. There are others as you will see in the following.

Key of C with chord structure notes

Scale degree 1 = C (the root of the chord)

Scale degree flat 2 (b2) = Db (never noted in chord names)

Scale degree 2 = D

Scale degree flat 3 = Eb

Scale degree 3 = E

Scale degree 4 = F

Scale degree #4 = F# (never noted in chord names)

Scale degree flat 5 = Gb (same note as #4)

Scale degree 5 = G

Scale degree #5 = G#

Scale degree flat 6 (b6) = Ab (never noted in chord names and same note as #5)

Scale degree 6 = A

Scale degree flat 7 (dominant 7) = Bb

Scale degree 7 = B

Scale degree 8 = C (never noted in chord names)

Scale extensions

Scale degree flat 9 (b9) = Db

Scale degree 9 = D

Scale degree #9 = D#

Scale degree flat 10 (b10) = Eb (never noted in chord names)

Scale degree 10 = E (never noted in chord names)

Scale degree 11 = F

Scale degree #11 = F#

Scale degree flat 12 (b12) = Gb (same note as #11 and never noted in chord names)

Scale degree 12 = G (never noted in chord names).

Scale degree flat 13 (b13) = Ab (rarely noted in chord names)

Scale degree 13 = A

Scale degree flat 14 (b14) = Bb (never noted in chord names)

Scale degree 14 = B (never noted in chord names).

The following simply uses chromatic notes going up the scale for one octave and will not show chord extension numbers. Simply learn the extension steps above and adapt as needed.

After the key of "C" we will work in a cycle of 4ths starting with the flat keys and then in a cycle of 5ths for the sharp keys.

Key of C

Scale degree 1 = C
Scale degree flat 2 = Db
Scale degree 2 = D
Scale degree flat 3 = Eb
Scale degree 3 = E
Scale degree 4 = F
Scale degree #4 = F#
Scale degree 5 = G
Scale degree #5 = G#
Scale degree 6 = A
Scale degree flat 7(dominant 7) = Bb
Scale degree 7 = B
Scale degree 8 = C

Flat keys:

Key of F (one flat in the key signature)

Scale degree 1 = F
Scale degree flat 2 = Gb
Scale degree 2 = G
Scale degree flat 3 = Ab
Scale degree 3 = A
Scale degree 4 = Bb
Scale degree #4 = B
Scale degree 5 = C
Scale degree #5 = C#
Scale degree 6 = D
Scale degree flat 7(dominant 7) = Eb
Scale degree 7 = E
Scale degree 8 = F

Key of Bb (two flats in the key signature)

Scale degree 1 = Bb
Scale degree flat 2 = B (Cb is harmonically correct)
Scale degree 2 = C
Scale degree flat 3 = Db
Scale degree 3 = D
Scale degree 4 = Eb
Scale degree #4 = E
Scale degree 5 = F
Scale degree #5 = F#
Scale degree 6 = G
Scale degree flat 7(dominant 7) = Ab
Scale degree 7 = A
Scale degree 8 = Bb

Key of Eb (three flats in the key signature)

Scale degree 1 = Eb
Scale degree flat 2 = E (Fb is harmonically correct)
Scale degree 2 = F
Scale degree flat 3 = Gb
Scale degree 3 = G
Scale degree 4 = Ab
Scale degree #4 = A
Scale degree 5 = Bb
Scale degree #5 = B
Scale degree 6 = C
Scale degree flat 7(dominant 7) = Db
Scale degree 7 = D
Scale degree 8 = Eb

Key of Ab (Four flats in the key signature)

Scale degree 1 = Ab
Scale degree flat 2 = A (Bbb is harmonically correct)
Scale degree 2 = Bb
Scale degree flat 3 = B (Cb is harmonically correct)
Scale degree 3 = C
Scale degree 4 = Db
Scale degree #4 = D
Scale degree 5 = Eb
Scale degree #5 = E
Scale degree 6 = F
Scale degree flat 7(dominant 7) = Gb
Scale degree 7 = G
Scale degree 8 = Ab

Key of Db (five flats in the key signature)

Scale degree 1 = Db
Scale degree flat 2 = D (Ebb is harmonically correct)
Scale degree 2 = Eb
Scale degree flat 3 = E (Fb is harmonically correct)
Scale degree 3 = F
Scale degree 4 = Gb
Scale degree #4 = G
Scale degree 5 = Ab
Scale degree #5 = A
Scale degree 6 = Bb
Scale degree flat 7(dominant 7) = B (Cb is harmonically correct)
Scale degree 7 = C
Scale degree 8 = Db

Key of Gb (six flats in the key signature)

Scale degree 1 = Gb
 Scale degree flat 2 = G (Abb is harmonically correct)
 Scale degree 2 = Ab
 Scale degree flat 3 = A (Bbb is harmonically correct)
 Scale degree 3 = Bb
 Scale degree 4 = Cb
 Scale degree #4 = C
 Scale degree 5 = Db
 Scale degree #5 = D
 Scale degree 6 = Eb
 Scale degree flat 7(dominant 7) = E (Fb is harmonically correct)
 Scale degree 7 = F
 Scale degree 8 = Gb

Key of Cb (seven flats in the key signature)

Kind of useless in our thinking but here goes anyway.

Scale degree 1 = Cb
 Scale degree flat 2 = C (Dbb is harmonically correct)
 Scale degree 2 = Db
 Scale degree flat 3 = D (Ebb is harmonically correct)
 Scale degree 3 = Eb
 Scale degree 4 = Fb
 Scale degree #4 = F
 Scale degree 5 = Gb
 Scale degree #5 = G
 Scale degree 6 = Ab
 Scale degree flat 7(dominant 7) = A (Bbb is harmonically correct)
 Scale degree 7 = Bb
 Scale degree 8 = Cb

Sharp keys:

Key of G (one sharp in the key signature)

Scale degree 1 = G

Scale degree flat 2 = Ab

Scale degree 2 = A

Scale degree flat 3 = Bb

Scale degree 3 = B

Scale degree 4 = C

Scale degree #4 = C#

Scale degree 5 = D

Scale degree #5 = D#

Scale degree 6 = E

Scale degree flat 7(dominant 7) = F

Scale degree 7 = F#

Scale degree 8 = G

Key of D (two sharps in the key signature)

Scale degree 1 = D

Scale degree flat 2 = Eb

Scale degree 2 = E

Scale degree flat 3 = F

Scale degree 3 = F#

Scale degree 4 = G

Scale degree #4 = G#

Scale degree 5 = A

Scale degree #5 = Bb (A# is harmonically correct)

Scale degree 6 = B

Scale degree flat 7(dominant 7) = C

Scale degree 7 = C#

Scale degree 8 = D

Key of A (three sharps in the key signature)

Scale degree 1 = A
Scale degree flat 2 = B \flat
Scale degree 2 = B
Scale degree flat 3 = C
Scale degree 3 = C \sharp
Scale degree 4 = D
Scale degree #4 = D \sharp
Scale degree 5 = E
Scale degree #5 = F (E \sharp is harmonically correct)
Scale degree 6 = F \sharp
Scale degree flat 7(dominant 7) = G
Scale degree 7 = G \sharp
Scale degree 8 = A

Key of E (four sharps in the key signature)

Scale degree 1 = E
Scale degree flat 2 = F
Scale degree 2 = F \sharp
Scale degree flat 3 = G
Scale degree 3 = G \sharp
Scale degree 4 = A
Scale degree #4 = B \flat (A \sharp is harmonically correct)
Scale degree 5 = B
Scale degree #5 = C (B \sharp is harmonically correct)
Scale degree 6 = C \sharp
Scale degree flat 7(dominant 7) = D
Scale degree 7 = D \sharp
Scale degree 8 = E

Key of B (five sharps in the key signature)

Scale degree 1 = B
Scale degree flat 2 = C
Scale degree 2 = C#
Scale degree flat 3 = D
Scale degree 3 = D#
Scale degree 4 = E
Scale degree #4 = F (E# is harmonically correct)
Scale degree 5 = F#
Scale degree #5 = G (F## is harmonically correct)
Scale degree 6 = G#
Scale degree flat 7(dominant 7) = A
Scale degree 7 = A#
Scale degree 8 = B

Key of F# (six sharps in the key signature)

Scale degree 1 = F#
Scale degree flat 2 = G
Scale degree 2 = G#
Scale degree flat 3 = A
Scale degree 3 = Bb (A# is harmonically correct)
Scale degree 4 = B
Scale degree #4 = C (B# is harmonically correct)
Scale degree 5 = C#
Scale degree #5 = D (C## is harmonically correct)
Scale degree 6 = D#
Scale degree flat 7(dominant 7) = E
Scale degree 7 = F (E# is harmonically correct)
Scale degree 8 = F#

Key of C# (seven sharps in the key signature)

Scale degree 1 = C#
Scale degree flat 2 = D
Scale degree 2 = D#
Scale degree flat 3 = E
Scale degree 3 = E#
Scale degree 4 = F#
Scale degree #4 = G (F## is harmonically correct)
Scale degree 5 = G#
Scale degree #5 = A (G## is harmonically correct)
Scale degree 6 = A#
Scale degree flat 7(dominant 7) = B
Scale degree 7 = B#
Scale degree 8 = C#

The Wrap Up

I am to the point where after finding my *home note*, I rarely need to think about intervals — the note names and chords pop into my brain very similar to *perfect pitch*. In time, the same will happen for you!!!

Long term gratification is the key — simply practice the techniques and have fun!!!