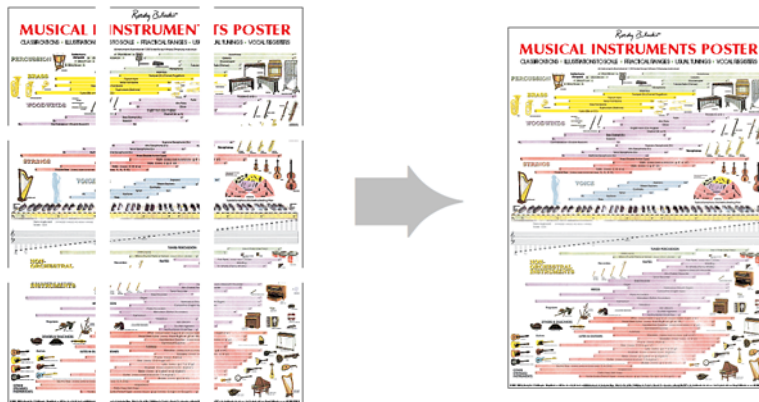


Roedy Black's

MUSICAL INSTRUMENTS POSTER

The Home-Printable Wall Chart

Free (Sponsored) Version



by

Wayne Chase

For information on how musical instruments work (including the human voice), see

How Music REALLY Works!

The Essential Handbook for Songwriters, Performers, and Music Students, 2nd Edition

by Wayne Chase

www.HowMusicReallyWorks.com

ALSO BY WAYNE CHASE

How Music REALLY Works!

The Gold Standard Song List

Roedy Black's Complete Guitar Chord Poster

Roedy Black's Complete Keyboard Chord Poster

Roedy Black's Guitar & Keyboard Scales Poster

Roedy Black's Chord Progression Chart

Roedy Black's

MUSICAL INSTRUMENTS POSTER

The Home-Printable Wall Chart

Free (Sponsored) Version

Wayne Chase

Roedy Black

Roedy Black Publishing (1987) Inc.
Vancouver, BC, Canada • Blaine, WA, USA

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Chase, Wayne

Roedy Black's Musical instruments poster [electronic resource] : the home-printable wall chart, free sponsored version / Wayne Chase.

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46800 - Unit D, 2405 Pine Street
Vancouver, British Columbia, Canada, V6J 5G6
604-228-8444
604-228-8424 fax
info@roedyblack.com
www.RoedyBlack.com

Visit this publication's websites:
www.HowMusicReallyWorks.com
www.CompleteChords.com

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Readme.1st

Welcome to the free (sponsored) version of the *Musical Instruments Poster: The Home-Printable Wall Chart*.

This free version is identical to the paid version, except that this free version has promotional watermarks (transparent text) superimposed on most of the images (see Part 1 below). You can use this free version to explore the images in detail and print sample pages, before deciding whether you want to upgrade to the paid version.

This PDF has some unusual characteristics. For instance, it contains pages that vary greatly in size. This could cause some navigation confusion unless you read Part 2 (“Recommended Settings for Easy Viewing and Navigation”) and adjust your Acrobat Reader.

The same applies to printing. To avoid frustration, please read Part 3 (“Recommended Settings for Printing”) before you print any pages.

Also, please note that all of the underlined Web links in this PDF are active. If your computer is connected to the Internet, you can click on any of the links to open the Web pages.

In general, you will probably have the best possible experience with the *Musical Instruments Poster* PDF if you take a few minutes to read the next 17 pages (up to the end of Part 9) before you start exploring and printing the poster images.

Enjoy the *Musical Instruments Poster* PDF, a companion to the book, *How Music REALLY Works!*

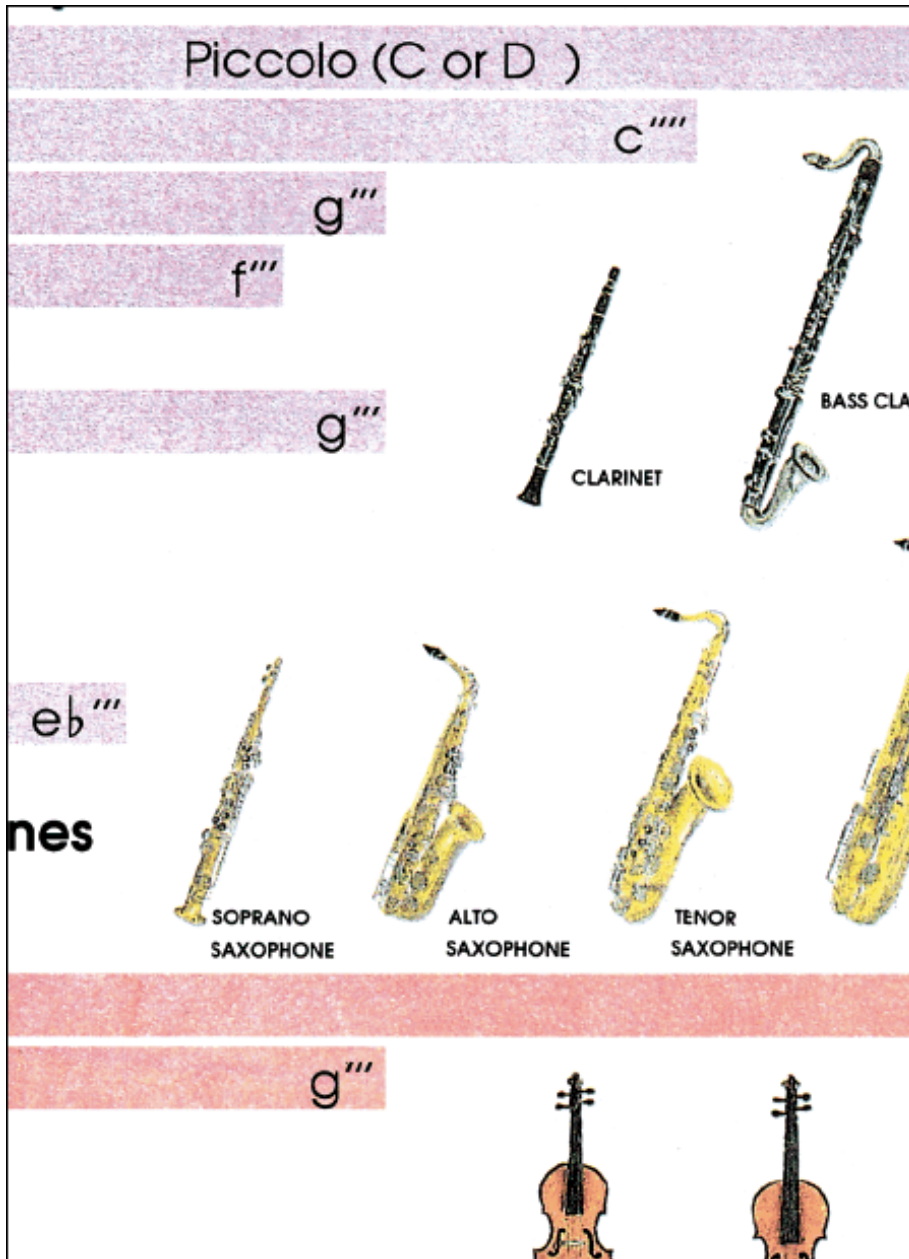
www.HowMusicReallyWorks.com

1. How This Free Version Differs from the Paid Version

This free sponsored version of the *Musical Instruments Poster* PDF (ISBN 1-897311-41-9) has watermarks (transparent promotional text) superimposed on the images, like this:



The paid version (ISBN 1-897311-42-7) is identical to the free version except that the paid version has *no* superimposed promotional text, like this:



You may find the free version useable “as is,” despite the superimposed promotional text. However, if you find that the text watermarks are too intrusive, you can download the modestly-priced paid version—without the promotional text on the images (ISBN 1-897311-42-7)—via this Web page:

www.howmusicreallyworks.com/Downloads.html.

2. Recommended Settings for Easy Viewing and Navigation

For easy viewing and navigation of this PDF, please set up your Acrobat Reader as follows.

Toolbar Setting

In your Acrobat Reader menu (at the top of this window) click on “View,” then “Toolbars.” Make sure the following three items are checked: “Basic,” “File,” and “Help.” (Others may also be selected.)

Magnification Percentage

Within the toolbar at the top of this window, there’s a small white box that shows you the magnification percentage. This percentage is adjustable. You will get best viewing results if the magnification percentage is set at 100%. If the percentage shown is a number other than 100%, click on the teeny little arrow just to the right of the small box showing the magnification percentage. A drop-down menu will appear. Select “100%.”

Page Thumbnails in the Navigation Pane

If page thumbnails are not already visible on the left side of the Acrobat Reader, that means the Navigation Pane is closed. To open it, click on the “Page” tab on the far left. Or, click on “View” in the Acrobat Reader menu, then “Navigation Tabs,” then select “Pages.”

The Acrobat Reader should now be divided into two panes, the narrow Navigation Pane on the left (which contains a page-numbered thumbnail of each page), and the large Document Pane. It's a good idea to make the Navigation Pane as narrow as possible, without cutting off the thumbnails (so to speak). Move your mouse over the vertical bar between the Navigation Pane and the Document Pane. The cursor will change to two small parallel bars. Hold down the left button on your mouse and move the vertical bar so that the Navigation Pane is just wide enough for the thumbnails to be completely visible.

Navigating with Your Computer Keyboard

If you would like to navigate through this PDF using your computer keyboard instead of the page thumbnails in the Navigation Pane, here's how:

- Ctrl-Home** Takes you to Page 1 of the document
- Ctrl-End** Takes you to the last page of the document
- Ctrl-Shift-n** Enter the page number you want to go to. (It's handy to remember that the Table of Contents is Page 5.)

Page View vs Continuous View

There are two recommended modes of document viewing to choose from, "Page View" and "Continuous View." To select either one, click on "View," in the menu at the top of this window. Then select "Page Layout," then either "Single Page" or "Continuous."

If you are scrolling through this PDF and the screen suddenly comes up grey, with no document in the Document Pane, drag the blue scroll bar at the bottom of this window to the middle of the window. The document will reappear. The pages in this PDF vary in size, and are centre-justified. Areas to the left and right of small pages are grey. This only applies in Continuous View, not Page View.

Viewing the Entire *Musical Instruments Poster* on One Screen

This PDF has two very large pages that show the whole chart in two different sizes. These two large images are on Pages 24 and 36.

Here's an easy way to navigate these two big images. First, in the Navigation Pane, click on the thumbnail for either Page 24 or Page 36. On the thumbnail, you will see a small red rectangle showing you which part of the large image is visible in the Document Pane. Move your mouse cursor over any of the four edges of the small red rectangle. The cursor will change to a "hand" icon. Now hold down the left button on your mouse and drag the red rectangle around the thumbnail. The image in the Document Pane will move accordingly.

3. Recommended Settings for Printing

All of the pages in this PDF, except Pages 24 and 36, will print normally in either colour or black-and-white, using an ordinary home printer. As for Pages 24 and 36, these are the two large views of the poster. Don't try to print either of these two pages. Instead, to print the entire image you see on Page 24, print Pages 26 through 34. To print the entire image you see on Page 36, print Pages 38 through 57.

Here's how to set up your printer:

1. Open the print window by clicking on "File" in the Acrobat Reader menu, then "Print." Or just use your keyboard: Ctrl-p.
2. In the print window, in the "Page Handling" section, set "Print Scaling" to "None."
3. Also in the "Page Handling" section, check "Auto-Rotate and Center." Do not check the other box.

These print settings are good for this entire e-book (except, of course, Pages 24 and 36).

4. Two Sizes: Size "A" (Regular) and Size "B" (Megasize)

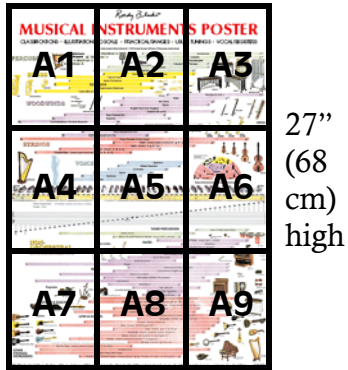
This PDF contains two sizes of the *Musical Instruments Poster*.

- **Size "A"** (Regular Size): 19" (49 cm) wide x 27" (68 cm) high.
This is the large image on Page 24, which is meant for viewing, not printing. However, you can print this entire image in sections. For printing purposes, Size "A" is divided into 9 sections (i.e., 9 pages that you can print using your home printer). The sections are labelled A1, A2, etc., up to A9.
- **Size "B"** (Megasize): 29" (73 cm) wide x 40" (102 cm) high.
This is the large image on Page 36, which is meant for viewing, not printing. However, you can print this entire image in sections. For printing purposes, Size "B" is divided into 20 sections (i.e., 20 pages that you can print with your home printer). The sections are labelled B1, B2, etc., up to B20.

Here is how the two sizes compare to each other, and where each section is located on each poster size. You may wish to print out the next page as an "overview map" of all the sections of both poster sizes.

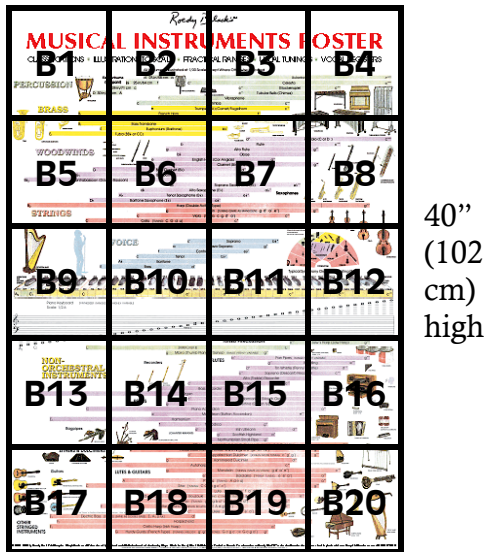
Size "A" (Regular Size, Pages 26 to 34)

19" (49 cm) wide



Size "B" (Megasize, Pages 38 to 57)

29" (73 cm) wide



5. Deluxe Edition: The Ultra-High-Resolution Laminated Print

You'll find that the images in this PDF are clear, but not razor sharp. That's because a PDF with ultra-high-resolution images would be humongous in size (hundreds of megabytes). This would have several practical disadvantages:

- Problems with downloading
- Problems with viewing—unreasonable amount of time required to open each page
- Problems with printing—unreasonable amount of time required to print each image

You will find that the image resolutions (especially the Size "B" images) in this PDF are clear enough for all practical purposes.

However, if you would like to get an ultra-high-resolution laminated print of the *Musical Instruments Poster* (Size "A", suitable for framing, ISBN 1-897311-40-0), you can order a copy by phone, online, fax, or mail. Click on this link for the order page:

www.completechords.com/Pages_Pathway_Order_Forms/Order_Page.htm

Because of the high cost of production and shipping, the ultra-high-resolution laminated print of the *Musical Instruments Poster* is significantly more expensive than the paid PDF version (the one without the watermarks), ISBN 1-897311-42-7, which is available at:

www.howmusicreallyworks.com/Downloads.html

6. **About the *Musical Instruments Poster***

The *Musical Instruments Poster* provides information for mixing, arranging, and producing recorded or live music:

- Comparative pitch ranges of more than 70 popular musical instruments (by note and frequency)
- Six vocal registers (three male, three female) aligned for comparison with each other, and for reference by note and frequency: bass, baritone, tenor, contralto, mezzo-soprano, soprano
- Tuning directions for 23 of the most popular stringed instruments
- 88-note Great Staff (Grand Staff), with each note aligned to its frequency and piano key position
- Specific pitch frequencies (cycles per second or Hertz) for all 88 notes
- Instrument families classified, sub-classified (e.g. percussion, brass, woodwinds, strings, etc.), and illustrated to the same scale

Equalization (EQ) and Range Guide for Sound Mixing, Arranging, and Songwriting

If you arrange, record, or mix music (home recordings, live music, or studio recordings), you are aware of the importance of equalization (EQ). To do it accurately, you need to know the frequencies (number of cycles per second) of the notes associated with the pitch ranges of each musical instrument and each voice range.

Each musical instrument and vocal register has a different range. The *Musical Instruments Poster* displays the frequency (number of vibrations per second, or Hertz) for each note playable on each instrument, including the various human vocal registers.

Sometimes you may use a multi-octave electronic instrument such as a synthesizer to replicate the sound of some other instrument, one you don't normally play, such as a bass clarinet or mandolin. That means you need to take care not to play outside the unfamiliar instrument's natural range. The *Musical Instruments Poster* shows which notes (referenced to an 88-key piano)—and which corresponding frequencies—define the natural ranges of most popular instruments. So, even if you have never played the instrument you are emulating with your electronic keyboard, you can at least make sure you're playing exclusively within the emulated instrument's natural range.

Tuning Directions for 23 Popular Stringed Instruments

The *Musical Instruments Poster* provides tuning information for the orchestral stringed instrument family (violin, viola, cello, double bass) and for the orchestral harp.

As well, the poster shows how to tune a variety of folk and popular instruments, such as the guitar, sitar, banjo, pedal steel guitar, and Appalachian dulcimer. The notes corresponding to the open pitch of each string are displayed on each instrument's "range bar."

The *Musical Instruments Poster* also identifies special tuning relationships. For example, the violin and the mandolin are normally tuned identically.

Ranges of Musical Instruments and Human Voices

The poster shows the pitch ranges for more than 70 instruments in all (see the full list below). It also displays the practical ranges of human voices (vocal registers) for bass, baritone, tenor, contralto, mezzo-soprano, and soprano voices.

A horizontal bar shows the range of each musical instrument and vocal register. The left end of each bar, representing the lowest note normally playable on a given instrument, aligns vertically with its corresponding key on the piano. The right end of each bar, representing the highest note normally playable, aligns with its corresponding piano key. (For some instruments, some musicians are able to play higher and lower notes than those displayed on the *Musical Instruments Poster*. This also applies to vocal ranges.) Each end of each range bar displays the name of the note aligned with the respective piano keys.

The 88-key piano keyboard displayed across the middle of the poster visually aligns with the range bars of all the instruments and voices. The left and right ends of each instrument's range bar align exactly with their corresponding piano keys.

Just below the piano keyboard is the Great Staff (or Grand Staff). It shows the pitches of all 88 piano notes, aligned directly beneath each corresponding key of the piano keyboard. This alignment extends to the uppermost and lowermost notes of the ranges of all musical instruments (and vocal registers) on the poster.

List of Instruments and Voices Featured on the *Musical Instruments Poster*

The upper half of the *Musical Instruments Poster* shows all the instruments of the symphony orchestra, and their ranges:

ORCHESTRAL INSTRUMENTS

Tuned Percussion

- Xylophone
- Celesta
- Lyra Glockenspiel
- Orchestral Glockenspiel
- Tubular Bells (Chimes)
- Vibraphone
- Marimba
- Timpani (Kettledrums)

Brass

- Trumpet
- Cornet
- Flugelhorn
- French Horn
- Tenor Trombone
- Bass Trombone
- Euphonium
- Tuba

Woodwinds

- Piccolo
- Flute

- Alto Flute
- Oboe
- English Horn (Cor Anglais)
- Clarinet
- Bass Clarinet
- Bassoon
- Contrabassoon
- Soprano Saxophone
- Alto Saxophone
- Tenor Saxophone
- Baritone Saxophone

Strings

- Violin
- Viola
- Cello
- Double Bass
- Harp
- Piano

HUMAN VOICES

Female

- Soprano
- Mezzo-Soprano
- Contralto (Alto)

Male

- Tenor
- Baritone
- Bass

The lower half of the poster shows a variety of popular non-orchestral instruments:

NON-ORCHESTRAL INSTRUMENTS

Tuned Percussion

- Jew's Harp (Jaw Harp)
- Steel Drums
- Mbira (Thumb Piano)

Winds

- Pan Pipes
- Whistling
- Tin Whistle (Penny Whistle)
- Soprano (Descant) Recorder
- Alto (Treble) Recorder
- Tenor Recorder
- Bass Recorder
- Organ
- Harmonica
- Concertina (English Type)
- Piano Accordion
- Melodeon (Button Accordion)
- Harmonium
- Melodica
- Uilleann (Irish) Pipes
- Highland (Scottish) Pipes
- Northumbrian (English) Pipes

Strings

- Zither
- Pedal Steel Guitar
- Appalachian Dulcimer
- Hammered Dulcimer
- Autoharp
- Mandolin
- Balalaika
- P'i-p'a
- Sitar
- Lute
- Bouzouki
- Banjo
- Guitar (Various Types)
- Ukulele
- Electric Bass
- Harpsichord
- Celtic (Irish) Harp
- Hurdy Gurdy (French Type)

Colour-coded Range Bars and Scaled Illustrations

Colour-coded range bars identify instrument families:

- Grey-green bars show tuned percussion instrument ranges
- Yellow bars show brass instrument ranges
- Purple bars show woodwind instrument ranges
- Red bars show stringed instrument ranges
- Blue bars show human vocal ranges

Except in a few cases (noted on the poster), each instrument is illustrated at 1/30 scale on poster size “A” (regular size). This includes a 1/30-scale silhouette of a person, so you can compare the size of any instrument relative to the size of a person. As well, there is a diagram of a typical symphony orchestra seating plan.

On poster size “B” (megazine), the illustrations are at 1/20 scale.

7. How to Get the Most from the *Musical Instruments Poster*

The *Musical Instruments Poster* is a companion to the book, *How Music REALLY Works!: The Essential Handbook for Songwriters, Performers, and Music Students, 2nd Edition*, by Wayne Chase (ISBN 1-897311-55-9, print; or ISBN 1-897311-56-7, PDF).

If you want to understand everything on the *Musical Instruments Poster*, consult the following chapters of *How Music REALLY Works!*, 2nd Edition:

- Chapter 3 on how musical instruments work
- Chapter 4 on scales and intervals
- Chapter 5 on keys and modes
- Chapter 9 on vocal ranges
- Chapter 11 on vocal technique, sound, and style

8. How Music REALLY Works!

If you don't yet have a copy of *How Music REALLY Works!*, 2nd Edition, you can preview the first 6 full chapters for free at this website:

www.howmusicreallyworks.com

For Performers, Students, and Instructors

Most aspiring professional musicians and instructors can sing or play an instrument with considerable proficiency. **But they don't understand much about how music itself really works.**

If you want to get ahead as a musician and/or instructor, then singing or playing an instrument expertly is not enough.

If you aim to make a living (or at least part of your living) in music as a performer and/or instructor, you'll do a lot better if you understand the important aspects of how music works. For example:

- What separates a brilliant melody from an ordinary one?
- How do great chord progressions work?
- What makes a lyric emotionally powerful?
- How is it possible to create a unique, original, signature sound and style?

All of these topics, and a lot more, are extensively and clearly covered in *How Music REALLY Works!*, 2nd Edition, **the world's single most useful and authoritative book for performers, songwriters, and music students.**

How Music REALLY Works!, 2nd Edition, is equally useful whether you read music or play by ear (like most performers and songwriters). You don't need to know how to read music. In fact, the book has *no music notation*—instead, everything you need to know about creating emotionally powerful music **AND lyrics** is spelled out in clear English, with hundreds of illustrations and examples.

If you don't already have it, you can purchase *How Music REALLY Works!*, 2nd Edition, in print or PDF format, from this order page (phone, online ordering, fax, or mail):

www.howmusicreallyworks.com/Pages_Ordering/Order_Page.html

For Songwriters

How Music REALLY Works!, 2nd Edition, is particularly useful for songwriters.

The sad truth is, 99.9% of songwriters **fail to rise above mediocrity**. Frankly, they're simply *clueless* about effective songwriting technique. They have no knowledge of the techniques required to write brilliant melodies, effective chord progressions, and powerful lyrics.

If you write songs as a solo artist or member of a band, you're one in a pack of millions. Anybody can write mediocre songs—which is exactly why the world's awash in second-rate, forgettable songs.

Writing *brilliant* songs takes real know-how—which is what you need if you expect to break away from the pack and get noticed.

With *How Music REALLY Works!*, 2nd Edition, you can acquire that know-how. You can quickly start learning *effective technique*: how to create brilliant tunes, brilliant chord progressions, and brilliant lyrics.

Click on this link for free access to 470 pages (6 complete chapters):

www.howmusicreallyworks.com

9. **The *Musical Instruments Poster*: Full View, Size "A" (Regular Size)**

The next page is the full-view Size "A" of the *Musical Instruments Poster*. Don't try to print Page 24. It is formatted for viewing, not printing. However, you *can* print the entire image on Page 24, at the same size, section by section. It requires 9 sheets of 8½" by 11" paper. To print the image on Page 24, go to Page 25.

MUSICAL INSTRUMENTS POSTER

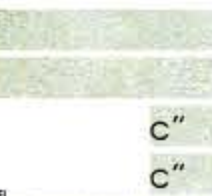
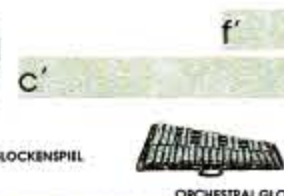
CLASSIFICATIONS • ILLUSTRATIONS TO SCALE • PRACTICAL RANGES • USUAL TUNINGS • VOCAL REGISTERS

All Instruments Illustrated at 1/30 Scale Except Where Otherwise Indicated

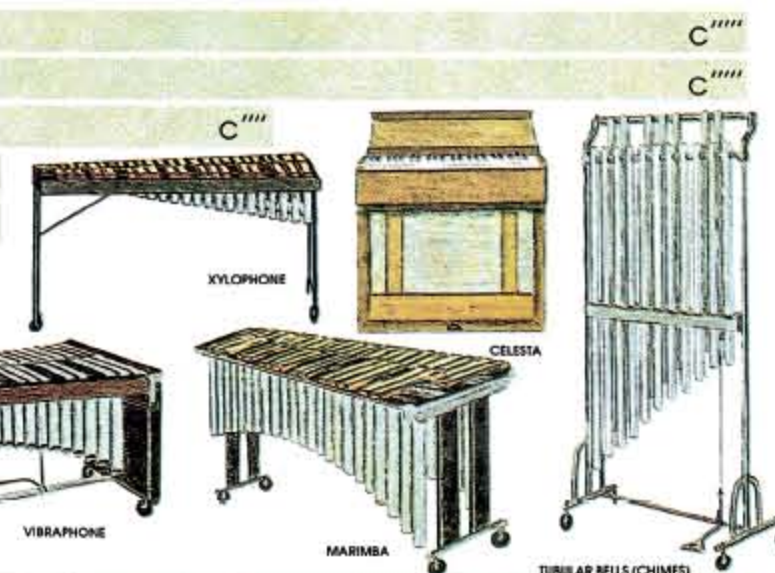
PERCUSSION



Kettle Drums (Timpani)
d 23-in/58 cm a
B₁ 25-in/64 cm f
F 28-in/71 cm c
D 30-in/76 cm A



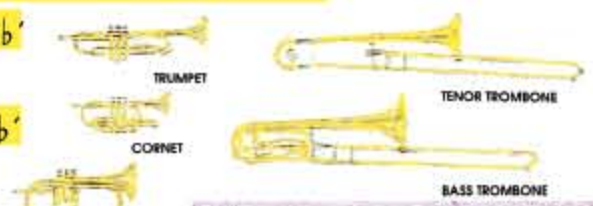
Xylophone
C^{****}
Celesta
Glockenspiel
Tubular Bells (Chimes)
f^{***}
f^{***}



BRASS



BRASS
B₁ French Horn
E Tenor Trombone
B₁ Bass Trombone
E Euphonium (Baritone)
E₁ Tuba (BB₁ or CC)
f^{***}
f^{***}
f^{***}
f^{***}
f^{***}



WOODWINDS



WOODWINDS
b Flute
g Alto Flute
b^b Oboe
e English Horn (Cor Anglais)
d Clarinet (B₁ or A)
D Bass Clarinet (B₁)
B₂ Bassoon
B₂ Contrabassoon (Double Bassoon)
b^b Soprano Saxophone (B₁)
a^b Alto Saxophone (E₁)
D₁ Tenor Saxophone (B₁)
B₂ Baritone Saxophone (E₁)
g Harp (Double Action Type)



STRINGS



STRINGS
g Violin [TUNING (SAME AS MANDOLIN): g d' a' e']
c Viola [TUNING: c g d' a']
C Cello [TUNING: C G d a]
E₁ Double Bass [TUNING (SAME AS ELECTRIC BASS): E₁ A₁ D G]
d'



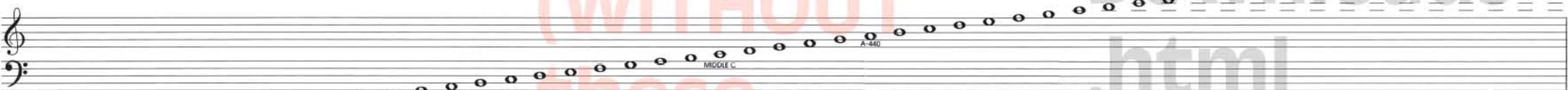
VOICE



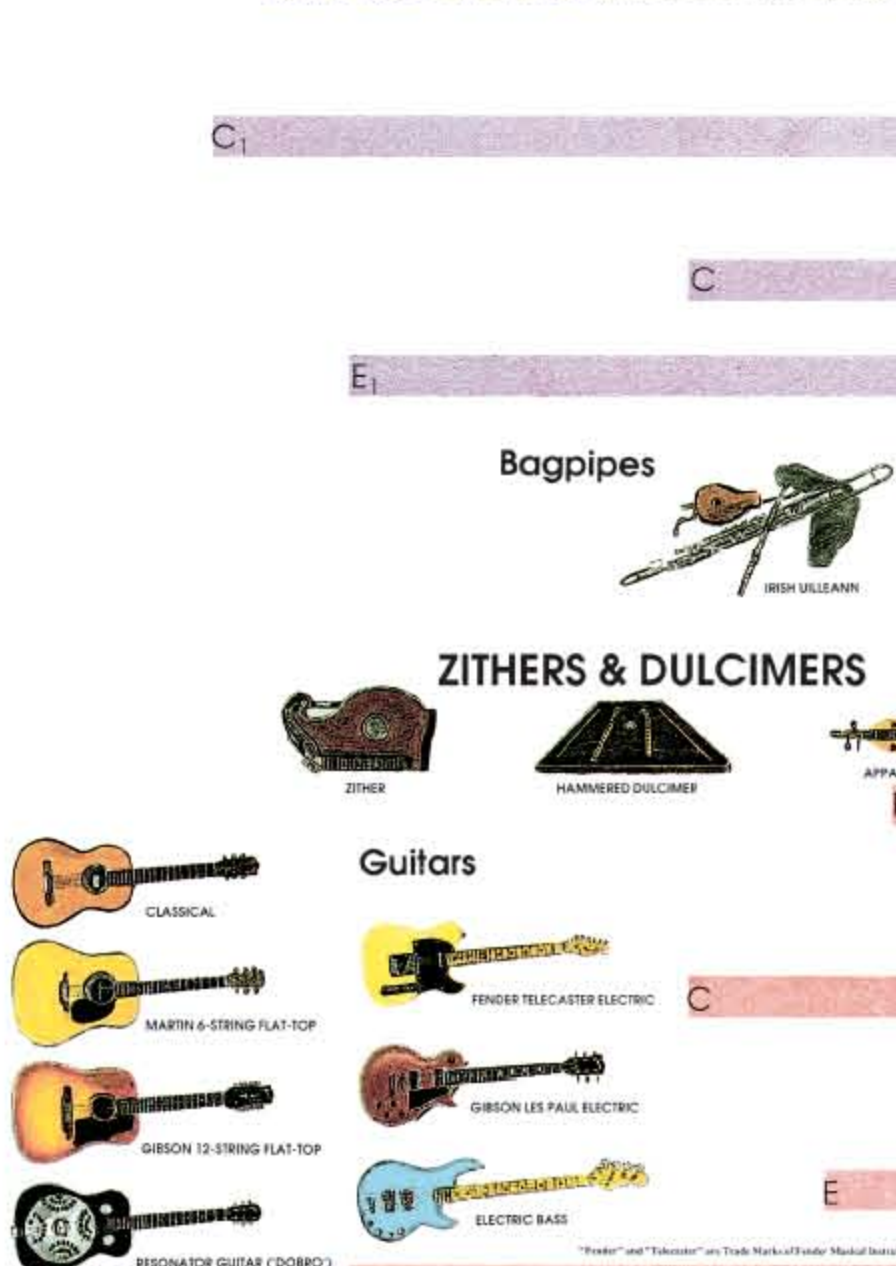
VOICE
c' Soprano
a Mezzo-Soprano
f Contralto
c Tenor
A^b Baritone
E Bass
b^b Soprano Saxophone (B₁)
a^b Alto Saxophone (E₁)
D₁ Tenor Saxophone (B₁)
B₂ Baritone Saxophone (E₁)
g Harp (Double Action Type)



Piano Keyboard Scale: 1/2.6 SYNTHESIZER RANGES ARE HIGHLY VARIABLE



NON-ORCHESTRAL INSTRUMENTS



TUNED PERCUSSION
c^{***} Jew's Harp (Jaw Harp) g^{***}
c^{***} Steel Drums
g Mbira (Thumb Piano or Sansa) RANGE HIGHLY VARIABLE g^{***}
b^b Pan Pipes RANGE HIGHLY VARIABLE g^{***}
g Whistling e^{***}
d^{***} Tin Whistle (Penny Whistle) d^{***}
c^{***} Soprano (Descant) Recorder c^{***}
f^{***} Alto (Treble) Recorder f^{***}
c^{***} Tenor Recorder c^{***}
f^{***} Bass Recorder f^{***}
c^{***} Organ
g Harmonica (Mouth Organ)
c^{***} Concertina (English type)
c^{***}
e^{***} Piano Accordion
e^{***} Melodeon (Button Accordion)
e^{***}
f^{***} Harmonium
f^{***} Melodica g^{***}
d^{***} Irish Uilleann (CHANTER RANGES) d^{***}
g Scottish Highland a^{***}
f^{***} Northumbrian Small-Pipe g^{***}
c^{***} Zither [VIENNA TUNING: c g g' d' a' / MUNICH TUNING: c g d' a' a'] d^{***}
B Pedal Steel Guitar [TUNING: B d e f# g# b e' g# e' b' f#] g^{***}
c^{***} Appalachian Dulcimer [IONIAN MODE TUNING: c' g' g'] g^{***}
g Hammered Dulcimer d^{***}
f^{***} Autoharp c^{***}
g Mandolin [TUNING (SAME AS VIOLIN): g d' a' e'] c^{***}
e' Balalaika ['PRIMA' TUNING: e' e' d'] a^{***}
A P'i-p'a [TUNING: A d e a] a^{***}
c Sitar [TUNING: C G f c g c' c'] g^{***}
g Lute [TUNING: g c' f' a' d' g'] f^{***}
d Bouzouki [TUNING (COMPARE GUITAR): d g b e'] e^{***}
c Banjo [TUNING: g' c g b d' OR g' d g b d'] c^{***}
E Guitar [TUNING (COMPARE BOUZOUKI): E A d g b e'] c^{***}
c' Ukulele [TUNING: g' c' e' a'] a^{***}
E₁ Electric Bass [TUNING (SAME AS DOUBLE BASS): E₁ A₁ D G] d^{***}
F₁ Harpsichord f^{***}
E₁ Celtic Harp (Irish Harp) a^{***}
G Hurdy-Gurdy (French Type) [TUNING, MELODY: g' g' / DRONES: G c g c' OR G c g d'] g^{***}



10. **The *Musical Instruments Poster*: Section-by-Section, Size "A" (Regular Size)**

The next 9 pages (pp. 26 to 34) contain the entire Size "A" poster (the image on Page 24), one page at a time. Have a look at some of the next 9 pages before you print out the whole thing.

When you're ready to print, click on "File," then "Print" to bring up the print screen. In the "Print Range" section, select "Pages from" and enter the page numbers 26 to 26, to print the first page as a test. Make sure "Print Scaling" says "None," and "Auto-Rotate and Scaling" has a check mark.

Then click "OK."

The first section, section "A1" should print.

If you're satisfied with it and you want to print the other 8 sections, change the numbers in "Pages from" to 27 to 34.

A1	A2	A3
A4	A5	A6
A7	A8	A9

MUSICAL INSTRUMENTS

CLASSIFICATIONS & ILLUSTRATIONS

PERCUSSION



KETTLEDRUM

**Kettledrums
(Timpani)**

B \flat 25-

F 28-in/71 cm c

D 30-in/76 cm A

BRASS



TUBA



EUPHONIUM (BARITONE)



FRENCH HORN

B \flat_1

E

B \flat_1 Bass

E

E $_1$ Tuba (B $\flat\flat$ or C)

WOODWINDS



PICCOLO



FLUTE



ALTO FLUTE



ENGLISH HORN (COR ANGLAIS)

D

B \flat_1

B \flat_2

Contrabassoon (Double Bassoon)

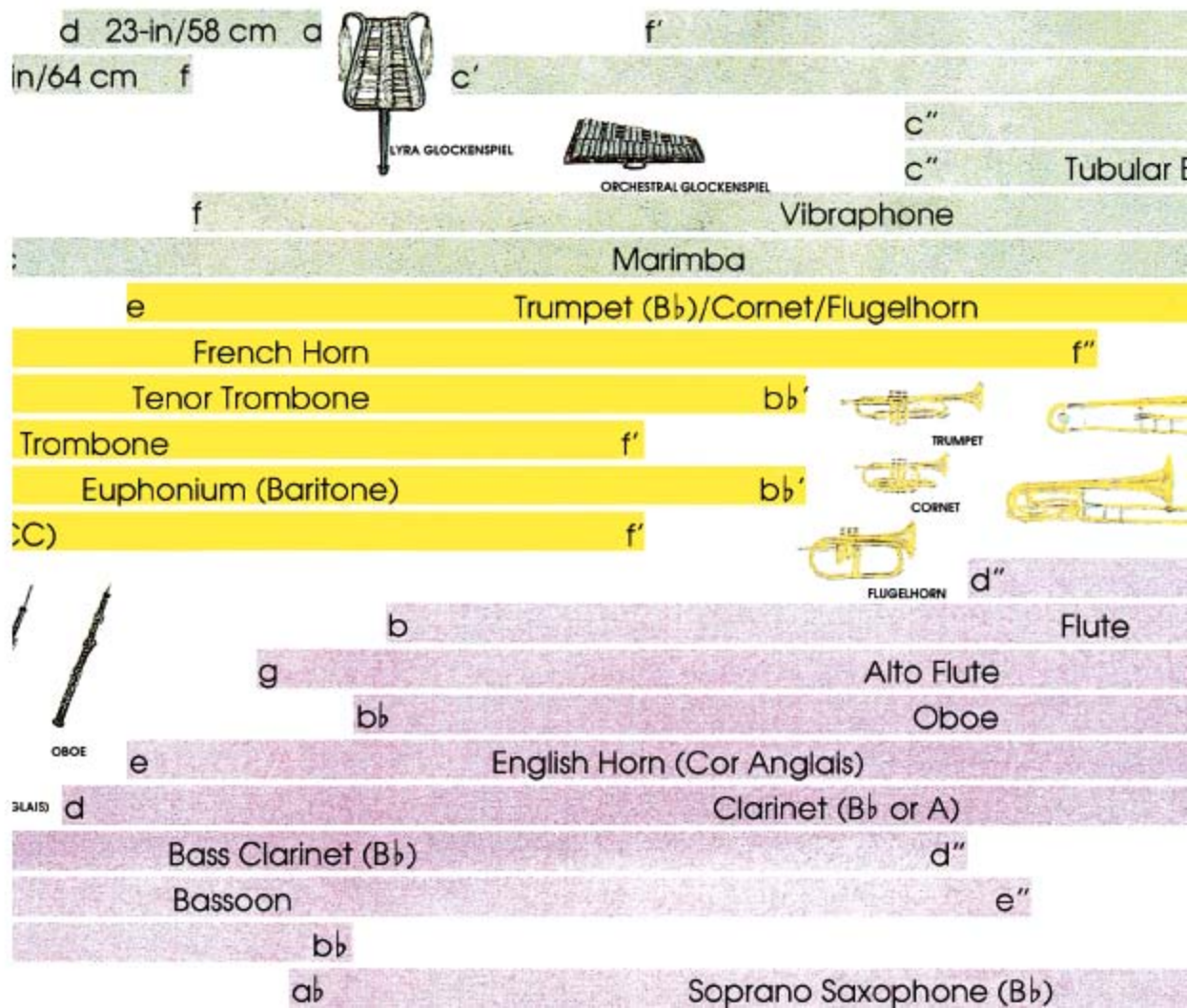
You can download

Roedy Black's™

INSTRUMENTS

TO SCALE • PRACTICAL RANGES • USUALLY

All Instruments Illustrated at 1/30 Scale Except Where Otherwise Indicated



A1	A2	A3
A4	A5	A6
A7	A8	A9

PERCUSSION POSTER™

JAZZ TUNINGS • VOCAL REGISTERS

Percussion Instruments and Tunings:

- Xylophone: C⁴
- Celesta: C⁴
- Glockenspiel: C⁴
- Bells (Chimes): f³, f⁴
- Vibraphone: C³, C⁴
- Marimba: C³
- Tubular Bells (Chimes): C⁴

Other Instruments:

- Tenor Trombone
- Bass Trombone
- Piccolo (C or D): C⁵
- Clarinet: C⁴, G³, F³, A², G²
- Bass Clarinet: C³
- Bassoon
- Contrabassoon (Double Bassoon): C²

via this Web

A4

A1	A2	A3
A4	A5	A6
A7	A8	A9

the
"Paid"

B₂

STRINGS



ORCHESTRAL HARP

E₁

C Double Bass [TUNING (SAME AS ELECTRIC BASS)]

D_b

A_b

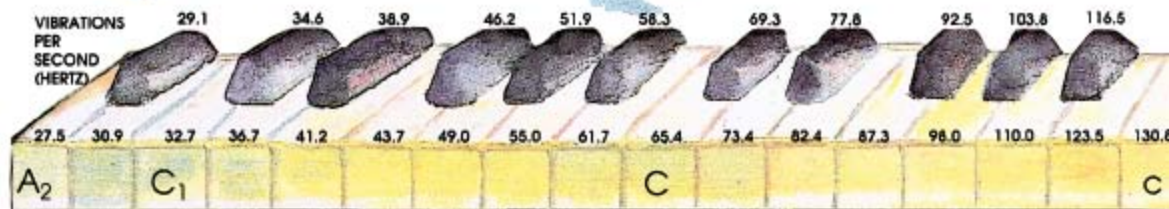
Baritone



VOICE

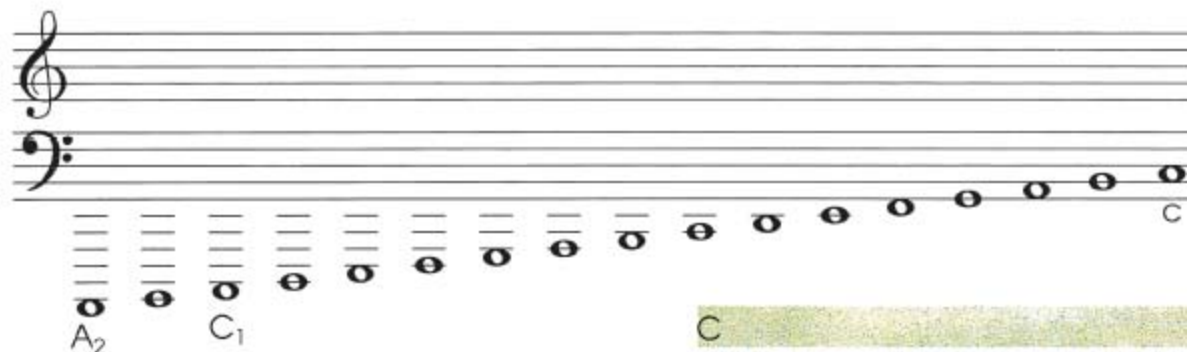
A_b

E



Piano Keyboard Scale: 1/2.6

SYNTHESIZER RANGES ARE HIGHLY VARIABLE



NON-ORCHESTRAL

A1	A2	A3
A4	A5	A6
A7	A8	A9

Alto Saxophone (E \flat) a \flat "

Tenor Saxophone (B \flat) e \flat "

Baritone Saxophone (E \flat) a \flat '

Harp (Double Action Type)

Violin [TUNING (SAME AS MANDOLIN): g d' a' e']

Viola [TUNING: c g d' a']

Cello [TUNING: C G d a] c"

Double Bass [TUNING: E $_1$ A $_1$ D G] d'

Soprano c'

Mezzo-Soprano g'

Contralto e \flat "

Tenor b \flat '

Baritone f'

Bass d'

138.6 155.6 185.0 207.6 233.1 277.2 311.1 370.0 415.3 466.2 554.4 622.2 740.0 830.6

146.8 164.8 174.6 196.0 220.0 246.9 261.6 293.7 329.6 349.2 392.0 440.0 493.9 523.2 587.3 659.3 698.5 784.0

c' a' c"

(WITHOUT)

MIDDLE C A-440

TUNED PERCUSSION

Steel Drums

Mbira (Thumb Piano or Sansa) RANGE HIGHLY VARIABLE g"

Recorders FLUTES b'

d"

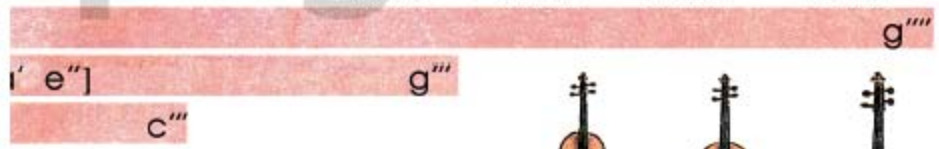
A Companion to *How Music REALLY Works!*, 2nd Edition, by Wayne Chase

This is SIZE "A" (regular size): 19" (49 cm) wide x 27" (68 cm) high.

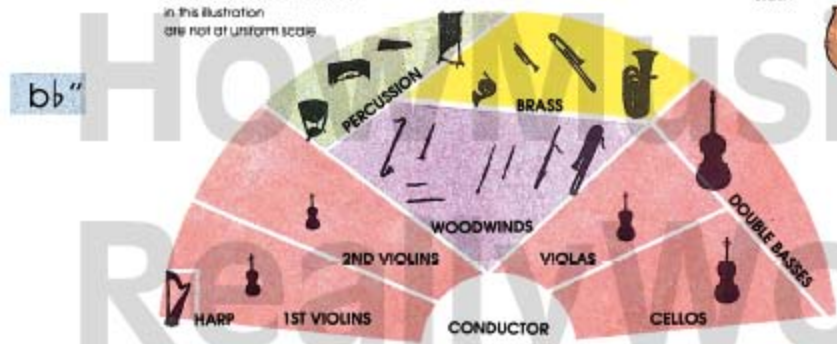
A6

A1	A2	A3
A4	A5	A6
A7	A8	A9

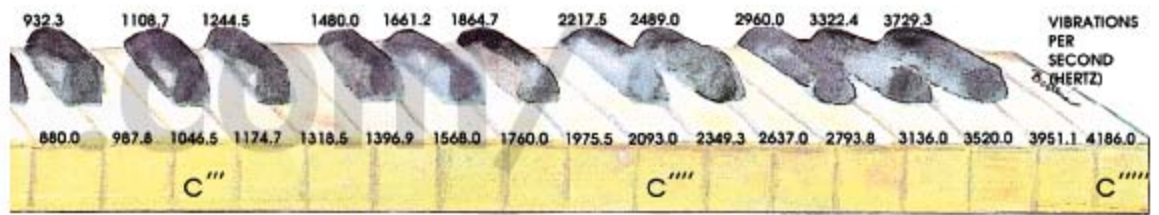
Saxophones



Musical instrument silhouettes in this illustration are not of uniform scale



Typical Symphony Orchestra Seating Plan



Downloads

.html

c^{'''} Jew's Harp (Jaw Harp) g^{'''}



Pan Pipes RANGE HIGHLY VARIABLE g^{'''}

Whistling e^{'''}

Tin Whistle (Penny Whistle) d^{'''}



A7

A1	A2	A3
A4	A5	A6
A7	A8	A9

INSTRUMENTS

C₁

C

E₁

Bagpipes



IRISH ULLEANN



SCOTTISH HIGHLAND

ZITHERS & DULCIMERS



ZITHER



HAMMERED DULCIMER



APPALACHIAN DULCIMER



CLASSICAL



MARTIN 6-STRING FLAT-TOP



GIBSON 12-STRING FLAT-TOP



RESONATOR GUITAR ('DOBRO')

Guitars



FENDER TELECASTER ELECTRIC



GIBSON LES PAUL ELECTRIC



ELECTRIC BASS

LUTES & GU

A

C

E

OTHER STRINGED INSTRUMENTS

E₁

Electric Bass [TUNING (SAME AS DOUBLE

F₁

E₁

G

Hurdy-G

A Companion to *How Music REALLY Works!*, 2nd Edition, by Wayne Chase

This is SIZE "A" (regular size): 19" (49 cm) wide x 27" (68 cm) high.

A8

A1	A2	A3
A4	A5	A6
A7	A8	A9

RECORDERS

- FRANO SCANT) CORDER
- ALTO (TREBLE) RECORDER
- TENOR RECORDER
- BASS RECORDER

EDS

- Organ
- Harmonica (Mou)
- Concertina (English typ)
- Plano Accordion
- Melodeon (Button Accordion)
- Harmonium
- Melodica
- Irish Uilleann
- Scottish Highland
- Northumbrian Small-Pipe

(CHANTER RANGES)

ITARS

- Zither [VIENNA TUNING: c g g' d' a' / MUNICH TUNING: c g g' d' a']
- Pedal Steel Guitar [TUNING: B d e f# g# b e' g#' eb' f#']
- Appalachian Dulcimer [IONIAN MODE: c' g' b' d' f' a' c']
- Hammered Dulcimer
- Autoharp
- Mandolin [TUNING (SAME AS VIOLIN): g' b' d' f']
- Balalaika ['PRIMA' TUNING: e' g' b' d']
- P'i-p'a [TUNING: A d e a]
- Sitar [TUNING: C G f c g c' c']
- Lute [TUNING: g c' f' a' d'' g'']
- Bouzouki [TUNING (COMPARE GUITAR): d g b e']
- Banjo [TUNING: g' c g b d' OR g' d g b d']
- Guitar [TUNING (COMPARE BOUZOUKI): E A d g b e']
- Ukulele [TUNING: g' c' e' a']
- BASS): E₁ A₁ D G] d'
- Harpsichord
- Celtic Harp (Irish Harp)
- Burdy (French Type) [TUNING, MELODY: g' g' / DRONES: G c g c' OR G c g d'] g''

A Companion to *How Music REALLY Works!*, 2nd Edition, by Wayne Chase

This is SIZE "A" (regular size): 19" (49 cm) wide x 27" (68 cm) high.

A9

A1	A2	A3
A4	A5	A6
A7	A8	A9

trano (Descant) Recorder c'''
 order f'''
c'''



c'''
 th Organ) c'''
 e) c'''

a'''
e'''
f'''



d'''
a''



: c g d' a' a'] d'''
g'''
 TUNING: c' g' g'] g'''
d'''
c'''



g d' a' e'] c'''
 NG: e' e' a'] a'''



a'''
a'''
g'''



f'''
e'''



c'''
c'''
a''



f'''
a''



11. **The *Musical Instruments Poster*: Full View, Size "B" (Megasize)**

The next page is the full-view Size "B" of the *Musical Instruments Poster*. Don't try to print Page 36. It is formatted for viewing, not printing. However, you *can* print the entire image on Page 36, at the same size, section by section. It requires 20 sheets of 8½" by 11" paper. To print the image on Page 36, go to Page 37.

MUSICAL INSTRUMENTS POSTER

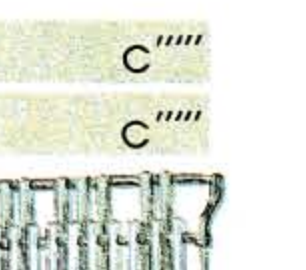
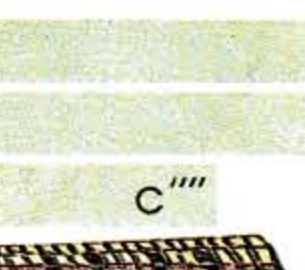
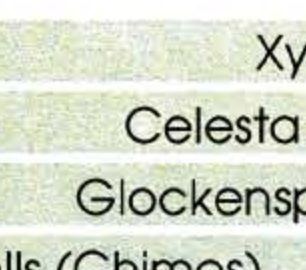
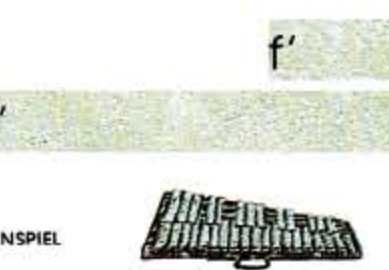
CLASSIFICATIONS • ILLUSTRATIONS TO SCALE • PRACTICAL RANGES • USUAL TUNINGS • VOCAL REGISTERS

All Instruments Illustrated at 1/30 Scale Except Where Otherwise Indicated

PERCUSSION



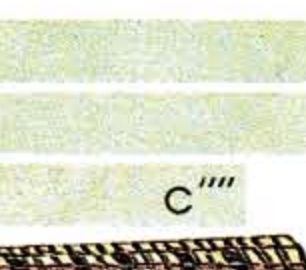
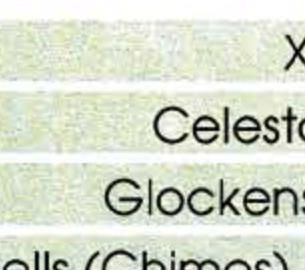
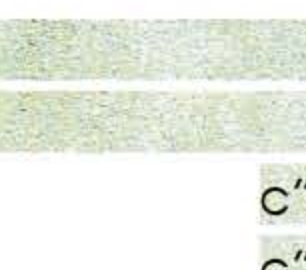
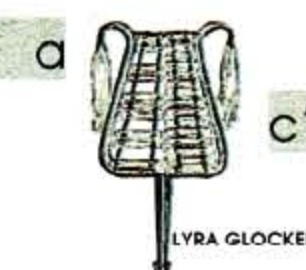
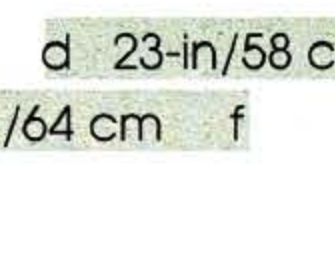
Kettledrums (Timpani)
d 23-in/58 cm a
B₁ 25-in/64 cm f
F 28-in/71 cm c
D 30-in/76 cm A



BRASS



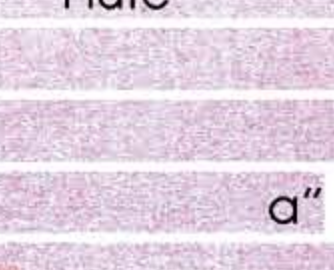
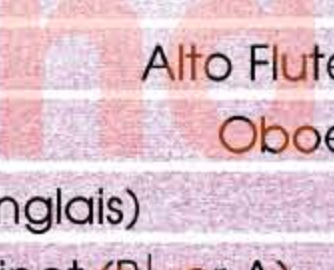
BRASS
B₁ French Horn
E Tenor Trombone
B₁ Bass Trombone
E Euphonium (Baritone)
E₁ Tuba (Bb or CC)



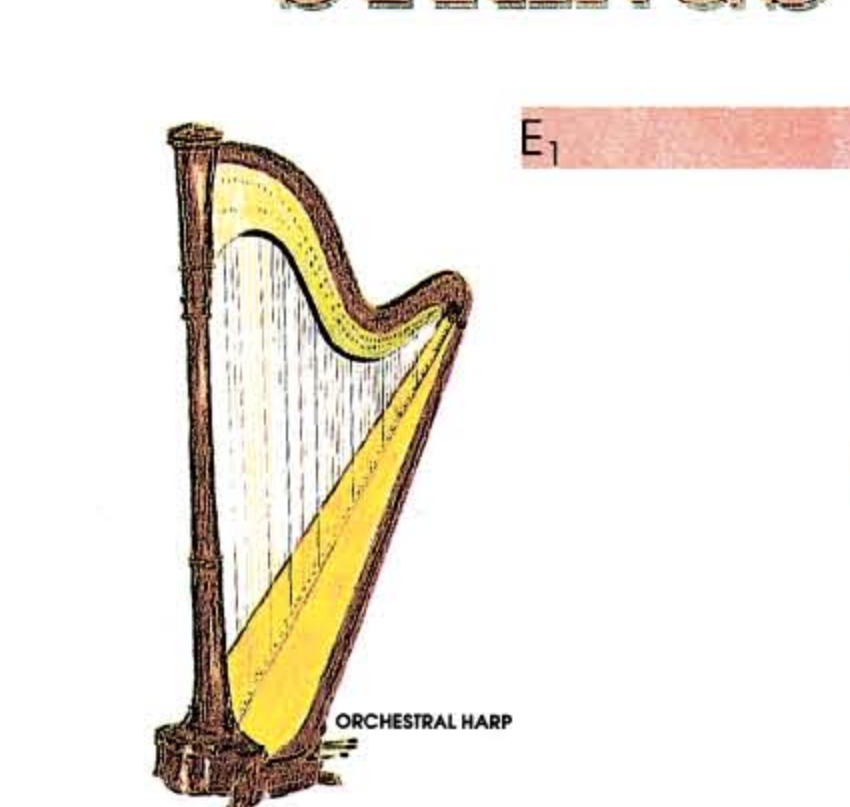
WOODWINDS



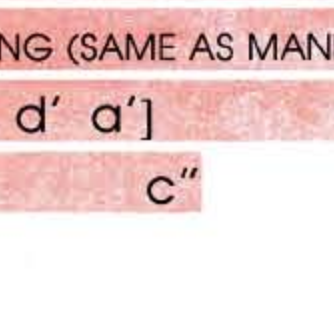
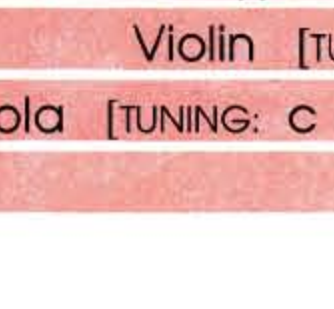
WOODWINDS
Piccolo (C or D)
Flute
Alto Flute
English Horn (Cor Anglais)
Bass Clarinet (Bb)
Bassoon
Contrabassoon (Double Bassoon)



STRINGS



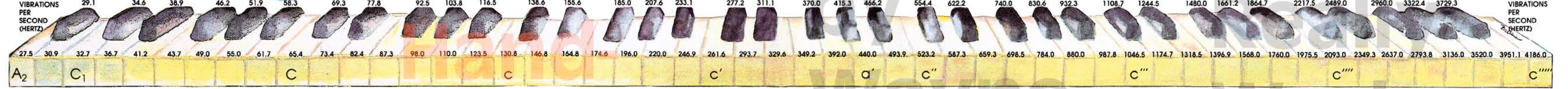
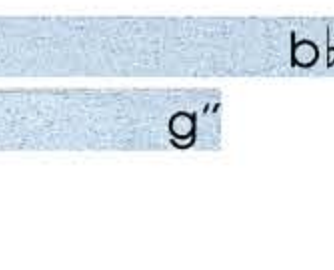
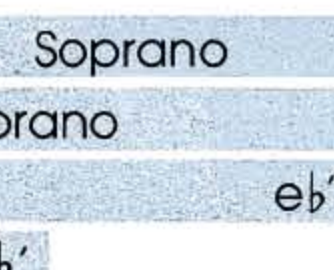
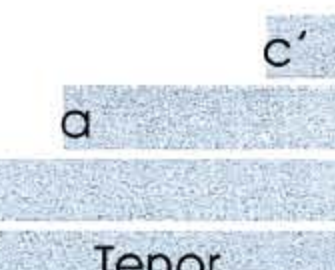
STRINGS
Harp (Double Action Type)
Violin [TUNING (SAME AS MANDOLIN): g d' a' e']
Viola [TUNING: c g d' a']
Cello [TUNING: C G d a]
Double Bass [TUNING (SAME AS ELECTRIC BASS): E₁ A₁ D G]



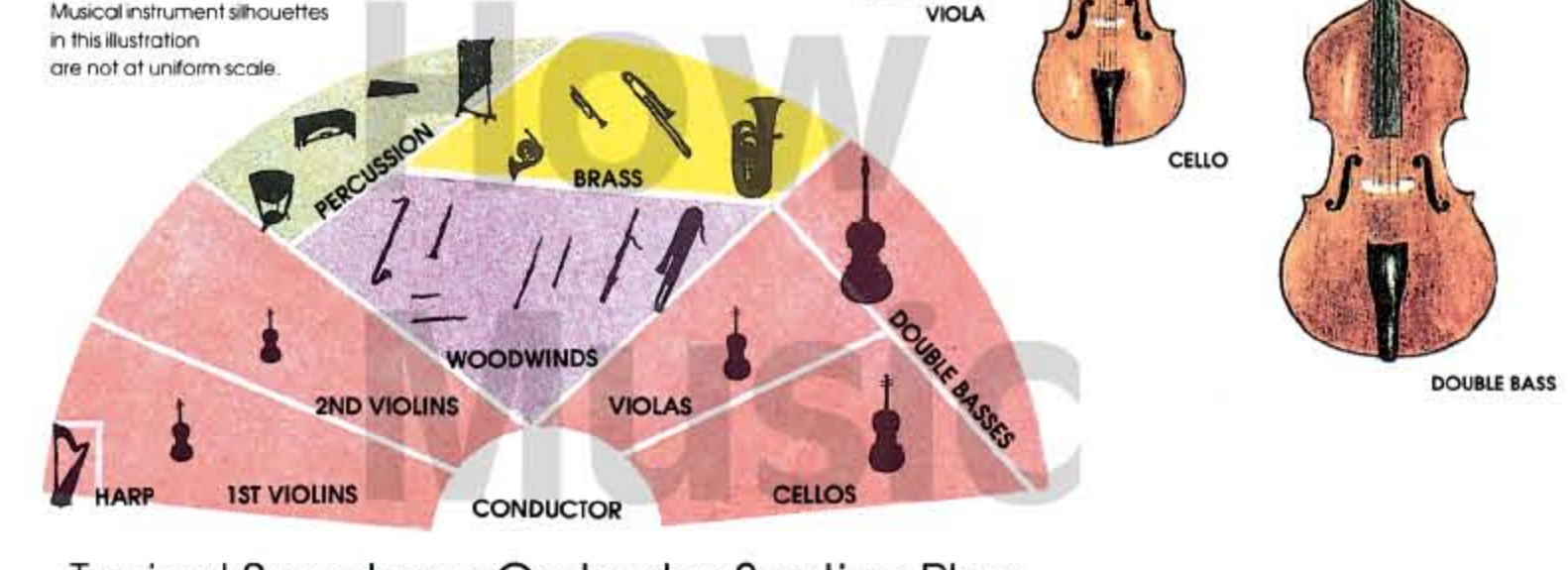
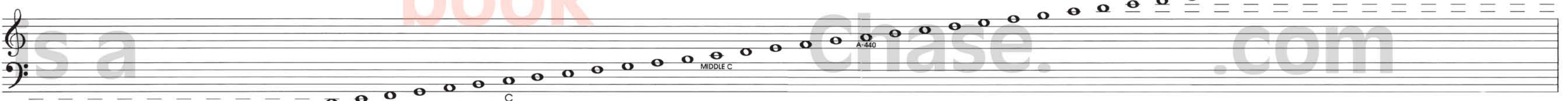
VOICE



VOICE
Soprano
Mezzo-Soprano
Contralto
Tenor
Baritone
Bass



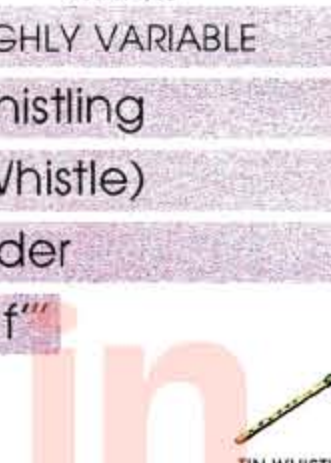
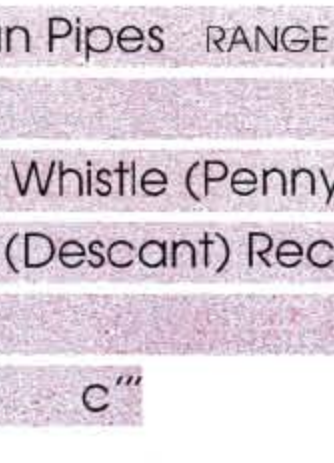
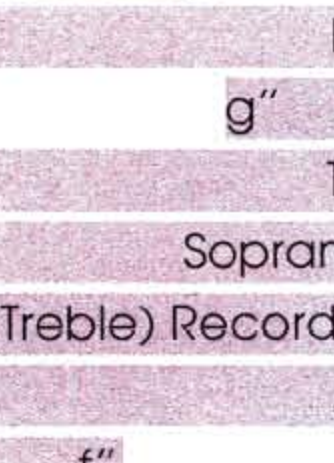
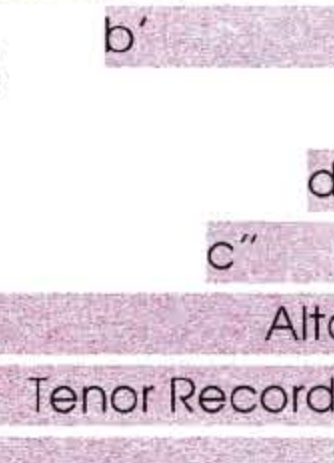
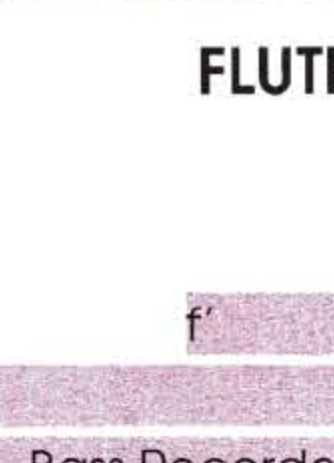
Piano Keyboard Scale: 1/2.6
SYNTHESIZER RANGES ARE HIGHLY VARIABLE



NON-ORCHESTRAL INSTRUMENTS



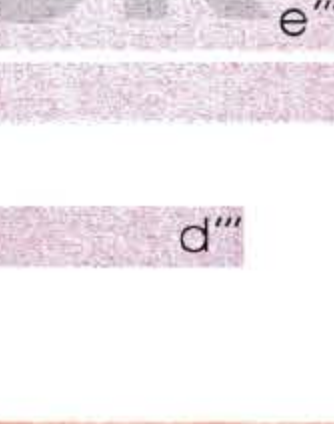
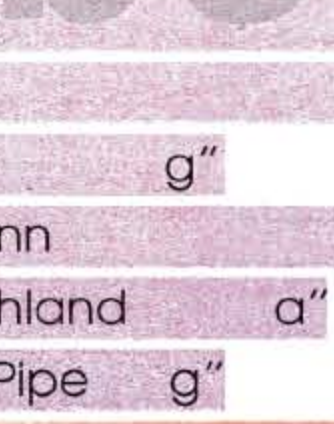
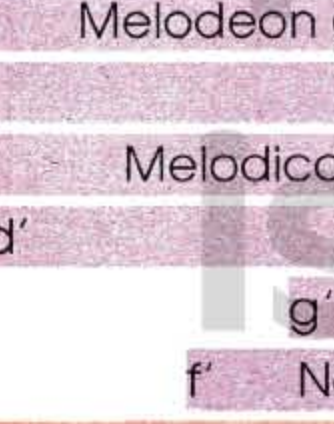
NON-ORCHESTRAL INSTRUMENTS
Bagpipes (Irish Uilleann, Scottish Highland)
Zither
Hammered Dulcimer



ZITHERS & DULCIMERS



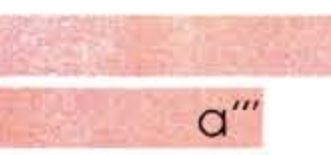
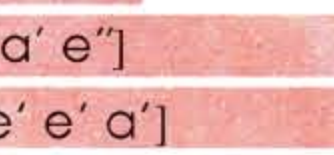
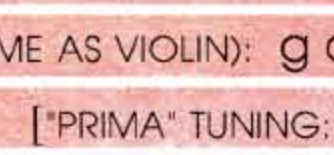
ZITHERS & DULCIMERS
Zither
Hammered Dulcimer



GUITARS



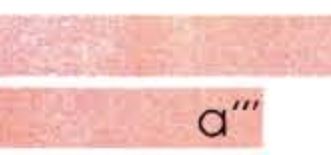
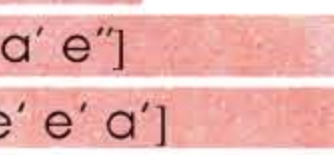
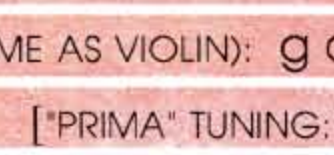
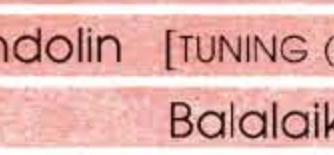
GUITARS
Classical
Fender Telecaster Electric
Martin 6-String Flat-Top
Gibson Les Paul Electric
Gibson 12-String Flat-Top
Resonator Guitar (Dobro)



OTHER STRINGED INSTRUMENTS



OTHER STRINGED INSTRUMENTS
Electric Bass [TUNING (SAME AS DOUBLE BASS): E₁ A₁ D G]
Harpsichord
Celtic Harp (Irish Harp)
Hurdy-Gurdy (French Type) [TUNING, MELODY: g' g' / DRONES: G c g c' OR G c g d']



12. **The *Musical Instruments Poster*: Section-by-Section, Size "B" (Megasize)**

The next 20 pages (pp. 38 to 57) contain the entire Size B poster (the image on Page 36), one page at a time. Have a look at some of the next 20 pages before you print out the whole thing.

When you're ready to print, click on "File," then "Print" to bring up the print screen. In the "Print Range" section, select "Pages from" and enter the page numbers 38 to 38, to print the first page as a test. Make sure "Print Scaling" says "None," and "Auto-Rotate and Scaling" has a check mark.

Then click "OK."

The first section, section "B1" should print.

If you're satisfied with it and you want to print the other 19 sections, change the numbers in "Pages from" to 39 to 57.

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

MUSICA

CLASSIFICATIONS • ILLUSTRATIONS

PERCUSSION



D 30-in/

KETTLEDRUM

Ke
C

This
BRASS



B1

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

Roedy Black

MUSICAL INSTRUMENTS

ILLUSTRATIONS TO SCALE 🍷 PRACTICE

All Instruments Illustrated at 1/30 Scale

Snare Drums

d 23-in/58 cm a

Timpani)

B \flat 25-in/64 cm f

F 28-in/71 cm c

76 cm A



LYRA GLOCKENSPIEL

c'

f

c

e

Trumpet

French Horn


B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

Black's™

MUSICAL INSTRUMENTS

MUSICAL RANGES 🍷 USUAL TUNING

⚠️ Except Where Otherwise Indicated

f'	Xylophone
	Celesta
	c'' Glockenspiel
ORCHESTRAL GLOCKENSPIEL	c'' Tubular Bells (Chimes)
Vibraphone	
Marimba	c'''
Trumpet (B♭)/Cornet/Flugelhorn	c'''
	f''

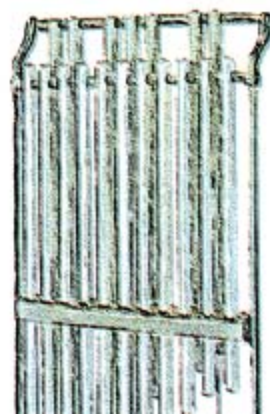
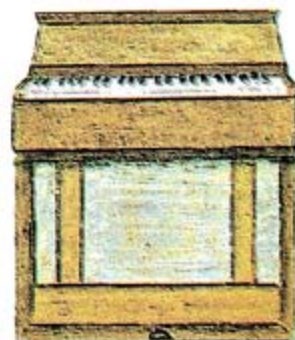
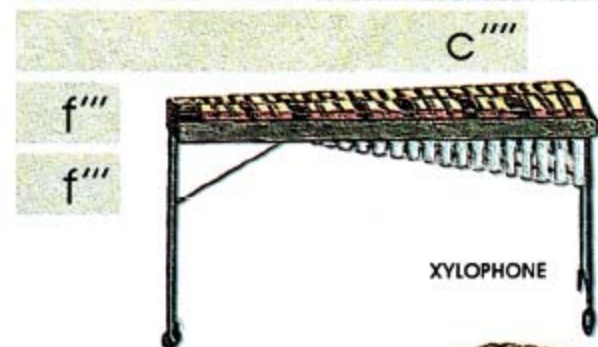
B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

POSTER™

SS 🍀 VOCAL REGISTERS

one C''''

C''''



A Companion to *How Music REALLY Works!*, 2nd Edition, by Wayne Chase

This is SIZE "B" (megazine): 29" (73 cm) wide x 40" (102 cm) high.

B5

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B18
B17	B18	B19	B20



TUBA



EUPHONIUM (BARITONE)



FRENCH HORN

E₁

B₁

E

E

WOODWINDS

D

B_{b1}

B_{b2}

Contrabassoon (Dou

D_b

B₂

STRINGS

C

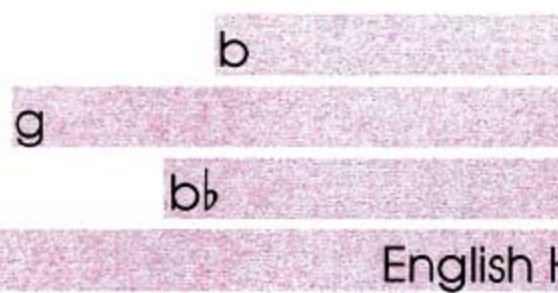
B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

Tenor Trombone

Bass Trombone

Euphonium (Baritone)

Tuba (BB \flat or CC)



ENGLISH HORN (COR ANGLAIS) d

Bass Clarinet (B \flat)

Bassoon

Double Bassoon)

bb

ab

db

Alto Saxophone

Ab

Tenor Saxophone (B \flat)

Baritone Saxophone (E \flat)

Harp (Double Action)

g

c

Viola [

Cello [TUNING: C G d a]

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B7

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B18
B17	B18	B19	B20

bb' f' bb' f'

TRUMPET TENOR TROMBONE
 CORNET BASS TROMBONE
 FLUGELHORN

d''

Flute

Alto Flute

Oboe

Horn (Cor Anglais) a''

Clarinet (Bb or A)

d''

e''

Soprano Saxophone (Bb) eb'''

ophone (Eb) ab''

eb''

ab'

Saxophones

ion Type)

Violin [TUNING (SAME AS MANDOLIN): g d' a' e'']

TUNING: c g d' a'] c'''

c''

A Companion to *How Music REALLY Works!*, 2nd Edition, by Wayne Chase

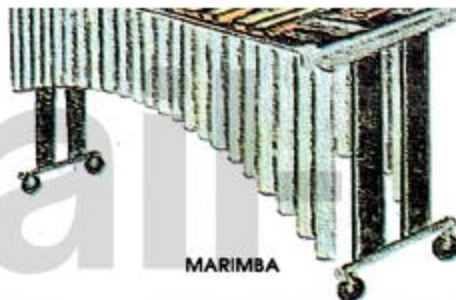
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B8

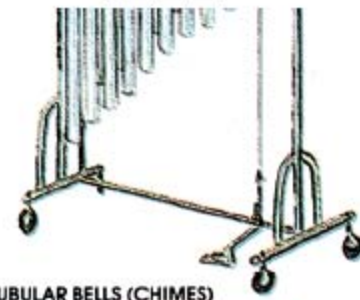
B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20



VIBRAPHONE



MARIMBA



TUBULAR BELLS (CHIMES)

Piccolo (C or D)

C^{''''}

f^{'''}
g^{'''}

C^{''''}



CLARINET



BASS CLARINET

BASSOON



CONTRABASSOON
(DOUBLE BASSOON)

g^{'''}



SOPRANO
SAXOPHONE



ALTO
SAXOPHONE



TENOR
SAXOPHONE



BARITONE
SAXOPHONE

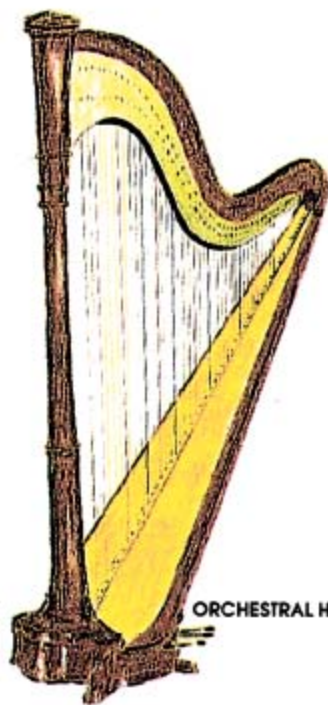
g^{''''}

g^{'''}



B9

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

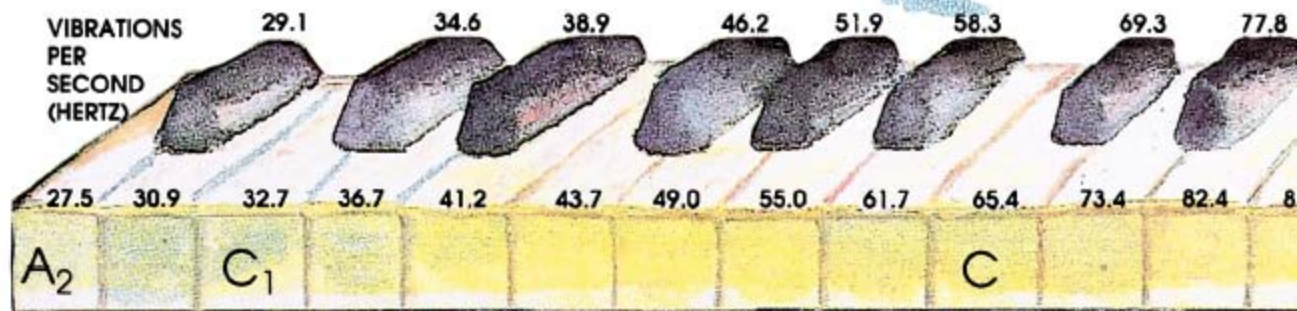


ORCHESTRAL HARP

E₁ Double Bass [TUNING]



E



Piano Keyboard
 Scale: 1/2.6

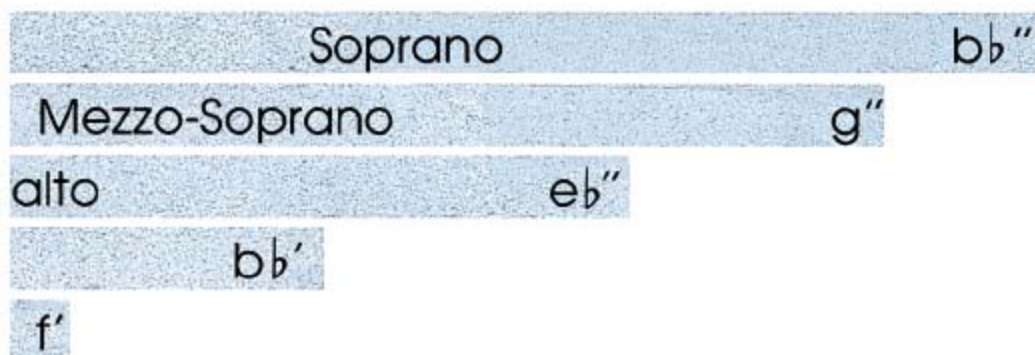
SYNTHESIZER RANGES



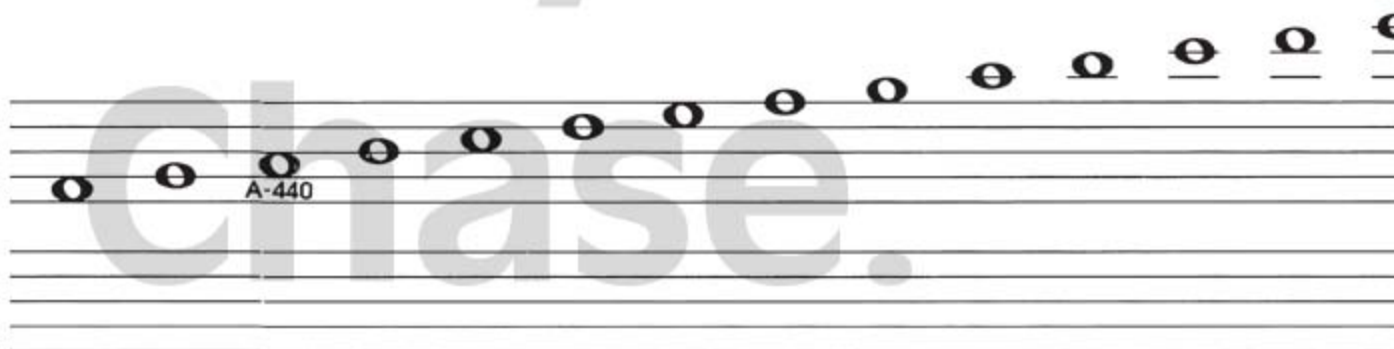
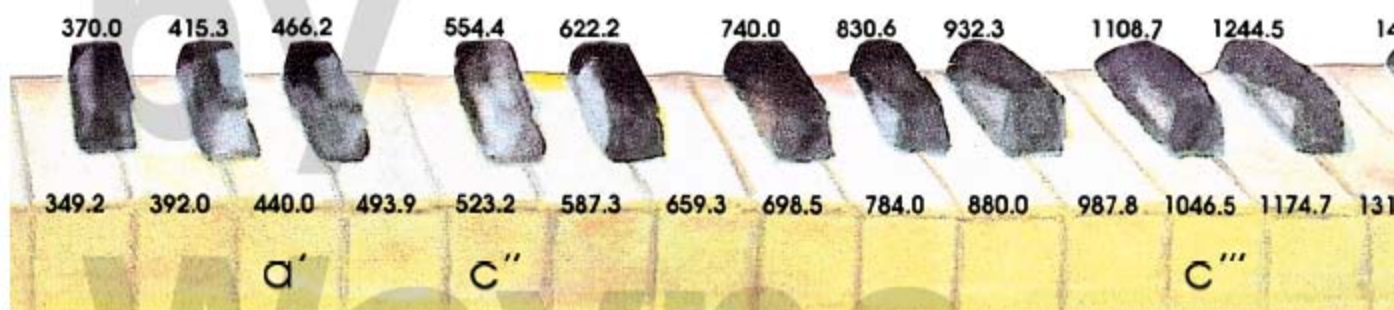
isa a

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

Musical instrument silhouettes in this illustration are not at uniform scale.



Typical Sy



B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20



NON-ORCHESTRAL INSTRUMENTS



to the **Bagpipes**



IRISH UILLEANN

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

Steel Drums

Mbira (Thumb Piano)

Recorders



SOPRANO
(DESCANT)
RECORDER



ALTO
(TREBLE)
RECORDER



TENOR
RECORDER



BASS
RECORDER

REEDS

Organ

Harmonium



SCOTTISH
HIGHLAND



NORTHUMBRIAN SMALL-PIPE

(CHANTER RANGES)

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B18
B17	B18	B19	B20

TUNED PERCUSSION

c'''
c'''

(piano or Sansa) RANGE HIGHLY VARIABLE g''

FLUTES

b' Pan Pipes RANGE

g''

d'' Tin Whistle (Penny)

c'' Soprano (Descant) Recorder

f' Alto (Treble) Recorder

Tenor Recorder c'''

Recorder f''

Harmonica (Mouth Organ)

Concertina (English type)

Accordion

Melodeon (Button Accordion) e'''

Melodica g''

Irish Uilleann d'''

g' Scottish Highland a''

f' Northumbrian Small-Pipe g''

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B16

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B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

Jew's Harp (Jaw Harp)

g'''



JEW'S HARP (JAW HARP)
Scale: 1/15



MBIRA



STEEL DRUMS

HIGHLY VARIABLE

g'''

Whistling

e'''

Whistle)

d'''

order

c'''

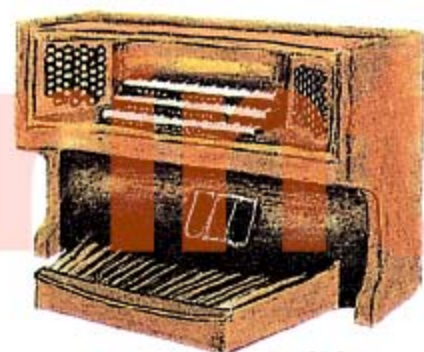
f'''



PAN PIPES



TIN WHISTLE (PENNY WHISTLE)



ORGAN
Scale: 1/60



WHISTLING

c'''

c'''

c'''

a'''



HARMONICA
Scale: 1/15



CONCERTINA

f'''



HARMONIUM
Scale: 1/60



PIANO ACCORDION



MELODEON
(BUTTON ACCORDION)



MELODICA

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

book, ZITHERS & DULCIMERS



ZITHER



HAMMERED DULCIMER



AL



CLASSICAL



MARTIN 6-STRING FLAT-TOP



GIBSON 12-STRING FLAT-TOP



RESONATOR GUITAR ("DOBRO")

Guitars

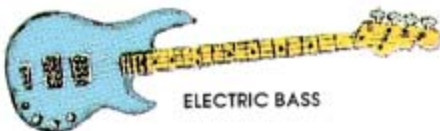


FENDER TELECASTER ELECTRIC

C



GIBSON LES PAUL ELECTRIC



ELECTRIC BASS

E

"Fender" and "Telecaster" are Trade Marks of Fender Musical Instruments Corporation.

E₁ Electric Bass [T

F₁

E₁

OTHER STRINGED INSTRUMENTS

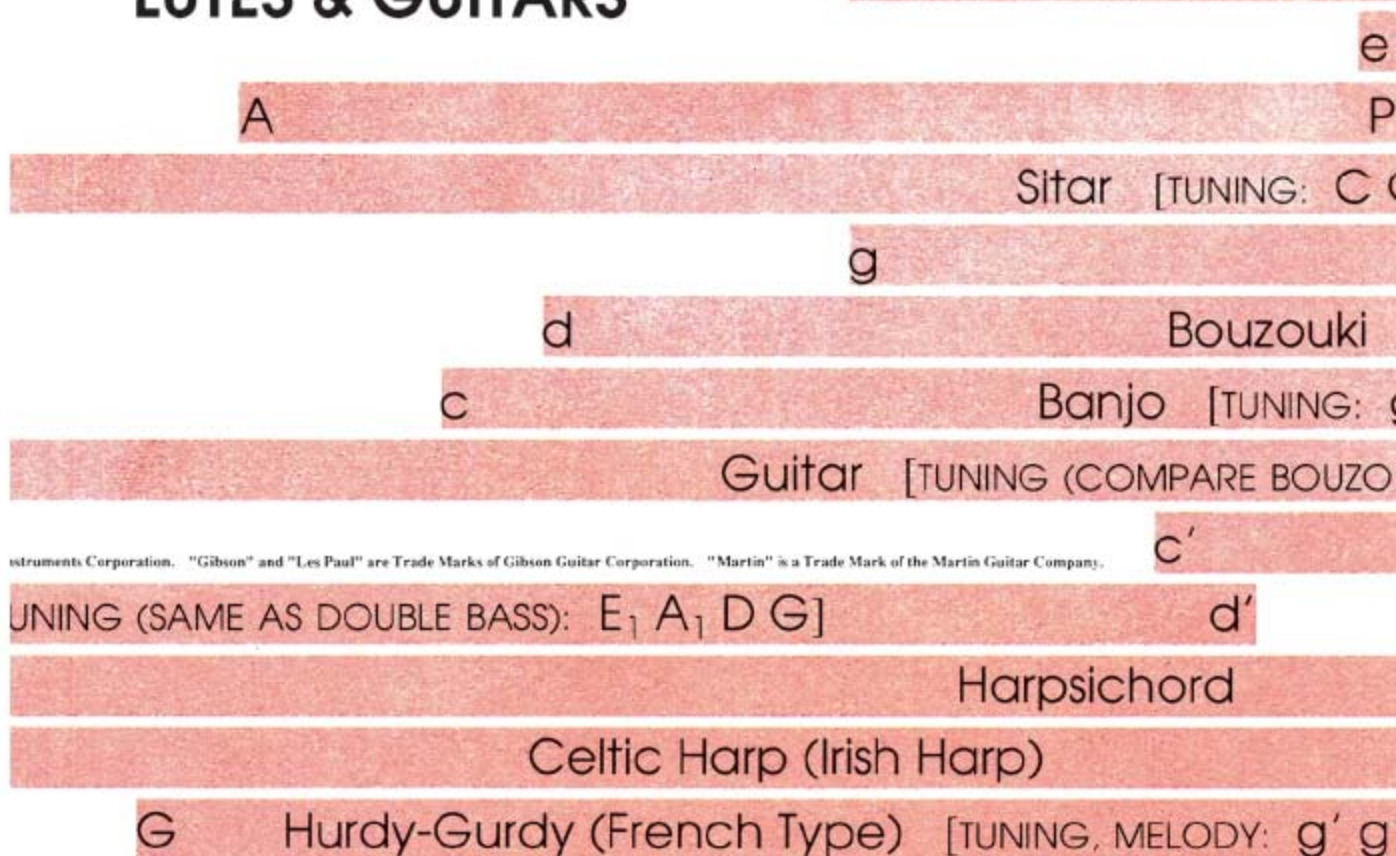
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B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20



PALACHIAN DULCIMER



LUTES & GUITARS



B19

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B18
B17	B18	B19	B20

VIENNA TUNING: c g g' d' a' / MUNICH TUNING: c g d' a' a']

tar [TUNING: B d e f# g# b e' g#' eb' f#']

Appalachian Dulcimer [IONIAN MODE TUNING: c' g' g']

Hammered Dulcimer d'''

c'''

Mandolin [TUNING (SAME AS VIOLIN): g d' a' e'']

Balalaika ["PRIMA" TUNING: e' e' a']

'i-p'a [TUNING: A d e a]

G f c g c' c''

Lute [TUNING: g c' f' a' d'' g'']

[TUNING (COMPARE GUITAR): d g b e'] e'''

g' c g b d' OR g' d g b d'] c'''

UKI): E A d g b e'] c'''

Ukulele [TUNING: g' c' e' a'] a''



a''

/ DRONES: G c g c' OR G c g d'] g''



Roedy Black's MUSICAL INSTRUMENTS POSTER

A Companion to *How Music REALLY Works!*, 2nd Edition, by Wayne Chase

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This is section

B20

B1	B2	B3	B4
B5	B6	B7	B8
B9	B10	B11	B12
B13	B14	B15	B16
B17	B18	B19	B20

d'''

g'''

g'''



AUTOHARP



PEDAL STEEL GUITAR

c'''

a'''

a'''

g'''

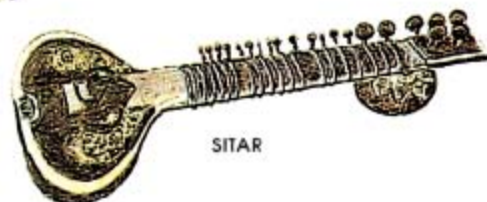
f'''



MANDOLIN



BALALAIKA



SITAR



BOUZOUKI



PI-P'A



LUTE



BANJO

f'''



HARPSICHORD
Scale: 1/60



HURDY-GURDY



CELTIC HARP
(IRISH HARP)

reference books, please visit www.CompleteChords.com or call 1-888-228-8181.

13.

Roedy Black's Chord Progression Chart

The chart on the next page contains the harmonic scales and Nashville Numbers for all major and minor keys.

The Nashville Numbers around the inside of each circle remain constant while the chords around the outside change according to the specific key.

Roedy Black's Chord Progression Chart will save you tons of time and tedious effort, especially when you want to get creative with variant chords and modulations to other keys.

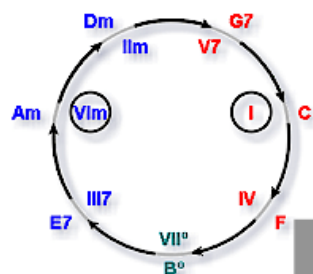
For complete explanations of harmonic scales and Nashville Numbers, consult *How Music REALLY Works!*, 2nd Edition, which covers these topics in detail, with many examples.

Roedy Black's™

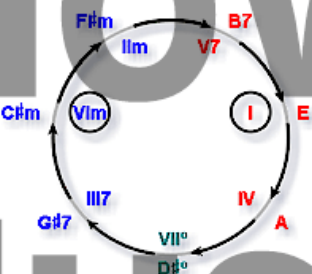
CHORD PROGRESSION CHART™

Harmonic Scales with Nashville Numbers for All Major and Minor Keys

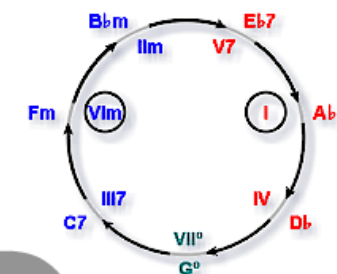
Key of C major / A minor



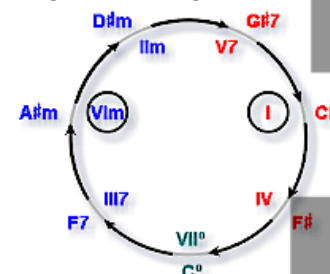
Key of E major / C# minor



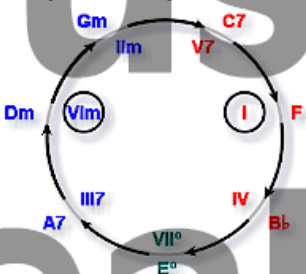
Key of A♭ major / F minor



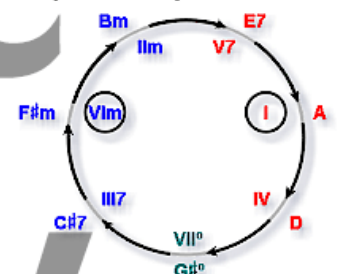
Key of C# major / A# minor



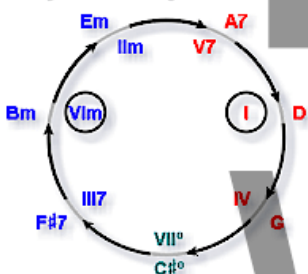
Key of F major / D minor



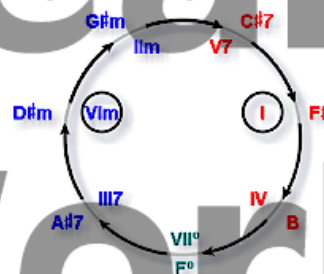
Key of A major / F# minor



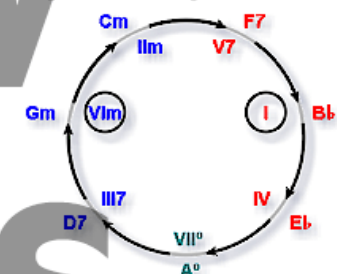
Key of D major / B minor



Key of F# major / D# minor



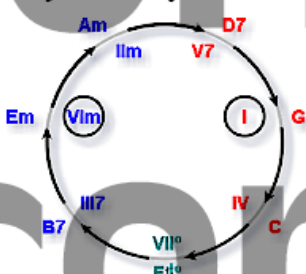
Key of B♭ major / G minor



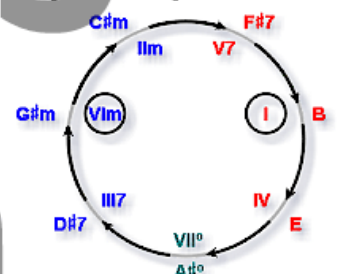
Key of E♭ major / C minor



Key of G major / E minor

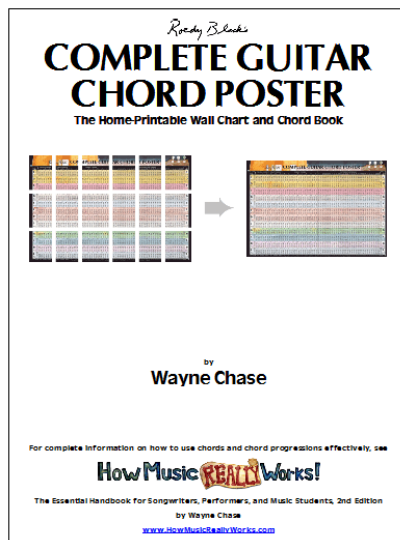


Key of B major / G# minor



For full details on how to use this chart, see *How Music REALLY Works!*, 2nd Edition – Chapter 6

14. Other Music Reference Charts in This Series

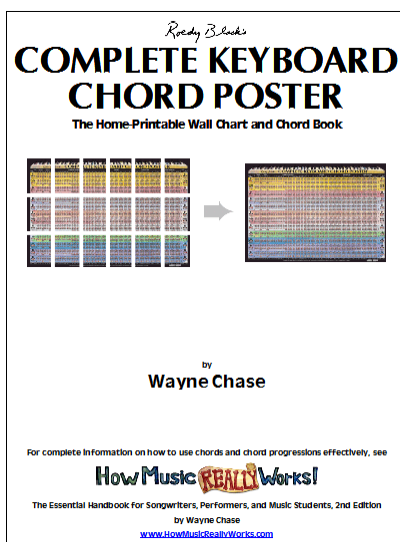


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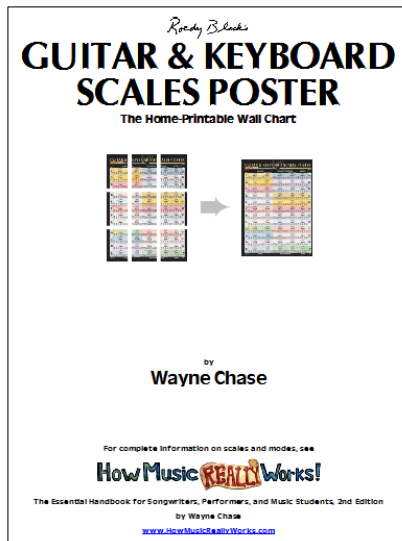


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Guitar & Keyboard Scales Poster

If you play either keyboard or guitar, you will find this chart most useful.

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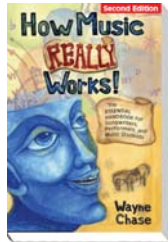
www.howmusicreallyworks.com/Downloads.html

The above charts are companions to the book, *How Music REALLY Works!, 2nd Edition*.

You can read the first 6 chapters for free here:

www.howmusicreallyworks.com

For the book's Table of Contents, see Pages 60 to 64.



The *Musical Instruments Poster* is a companion to the book, *How Music REALLY Works!, 2nd Edition*, by Wayne Chase, which is available in print or PDF:

PRINT: ISBN 1-897311-55-9

PDF: ISBN 1-897311-56-7

at www.howmusicreallyworks.com.

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