

# Music Fundamentals

All the Technical Stuff

# Pitch

- ◆ Highness or lowness of a sound
  - ◆ Acousticians call it *frequency*
  - ◆ Musicians call it *pitch*
- ◆ The example moves from low, to medium, to high pitch.

# Dynamics

- ♦ The *volume* or *loudness* of a sound.
- ♦ Musical terminology is in Italian:
  - ♦ *piano* means “soft”
  - ♦ *forte* means “loud”
  - ♦ *mezzo* qualifies as “medium”
  - ♦ *-issimo* intensifies

# Dynamics

- ♦ *pp* — pianissimo (very soft)
- ♦ *p* — piano (soft)
- ♦ *mp* — mezzo piano (medium soft)
- ♦ *mf* — mezzo forte (medium loud)
- ♦ *f* — forte (loud)
- ♦ *ff* — fortissimo (very loud)

# Dynamics

- ♦ Gradual changes of dynamics are indicated by the terms:
  - ♦ *crescendo* (getting louder)
  - ♦ *decrescendo* (getting softer)

# Beat

- ♦ The underlying pulse which we hear in a piece of music — it isn't necessarily *there* as a sound, but is felt as a pattern.

# Beat

- ◆ In this example, a drum tap is added to bring out the beat.

# Beat

- ◆ This is the same example without the added tap.

# Accent and Meter

- ♦ When one beat seems stronger than the others, the beats tend to fall into patterns: *ONE two ONE two*, or *ONE two three ONE two three*, etc.
- ♦ Those patterns are called a *meter*.

# Meter

- ♦ The example we've been hearing (by J.S. Bach) is in *duple (ONE two)* meter.
- ♦ This version adds taps that reflect the meter.

# Meter

- ◆ Here's an example in *triple* meter (*ONE two three*).

# Meter

- ♦ The same piece, without the taps.

# Rhythm

- ♦ In the most general sense *rhythm* refers to the time element in music.

# Rhythm

- ♦ In a more specific sense, it refers to the arrangements of notes (in time) in a piece of music.
  - ♦ Rhythm is usually structured by the beat and the meter, but it is not the same.

# Rhythm

- ♦ In this example, the rhythm adheres pretty closely to the beat, with only a few departures.



Notes



Strong and weak beats



# Rhythm

- ♦ Rhythm that is placed strongly *against* the beat in some way is called *syncopated rhythm* or just *syncopation*.
- ♦ The following example — the “Maple Leaf Rag” — demonstrates how the notes don’t necessarily fall evenly on the beat.



# Tempo

- ♦ The overall *speed* of a piece of music.
- ♦ Can be measured by the *metronome marks*, which indicate precisely how many beats there should be per second.

# Tempo

- ♦ The Italian terminology to indicate tempo is still in wide use
  - ♦ It isn't as precise as metronome marks
  - ♦ But it allows for more interpretation, latitude, and also carries some emotional connotation.

# Tempo

- ♦ Some standard tempo markings
  - ♦ *Adagio* — slow
  - ♦ *Andante* — walking
  - ♦ *Moderato* — moderate
  - ♦ *Allegretto* — fast-ish
  - ♦ *Allegro* — fast
  - ♦ *Presto* — very fast
- ♦ See the textbook for more

# Intervals

- ♦ An interval is the distance between any two notes.
- ♦ Intervals can be *consonant* or *dissonant*
  - ♦ *Consonant*: the notes are pleasing together
  - ♦ *Dissonant*: the notes clash with each other.

# Intervals

- ◆ Consonant intervals

# Intervals

- ◆ Dissonant intervals

# Intervals

- ♦ *A half-step* is the shortest possible distance between two notes.
- ♦ *A whole-step* is two half-steps.



# Scales

- ◆ Combinations of whole and half steps which together make up the pitches used in a musical composition.

# Scales

- ◆ There are many different kinds, but the most common ones in Western music are:
  - ◆ Chromatic
  - ◆ Major
  - ◆ Minor

# Chromatic Scale

- ♦ Consists of nothing but half steps.

# The Chromatic Scale



# The Major Scale

- ♦ All whole steps, except between notes 3 & 4, and notes 7 & 8.

# The *Major* Scale



# The *Minor* Scale

- ♦ All whole steps except between 2 & 3, and 5 & 6.
- ♦ Typically, the next-to-last note (7th) is raised; Western music prefers a half step between 7th and 8th notes.

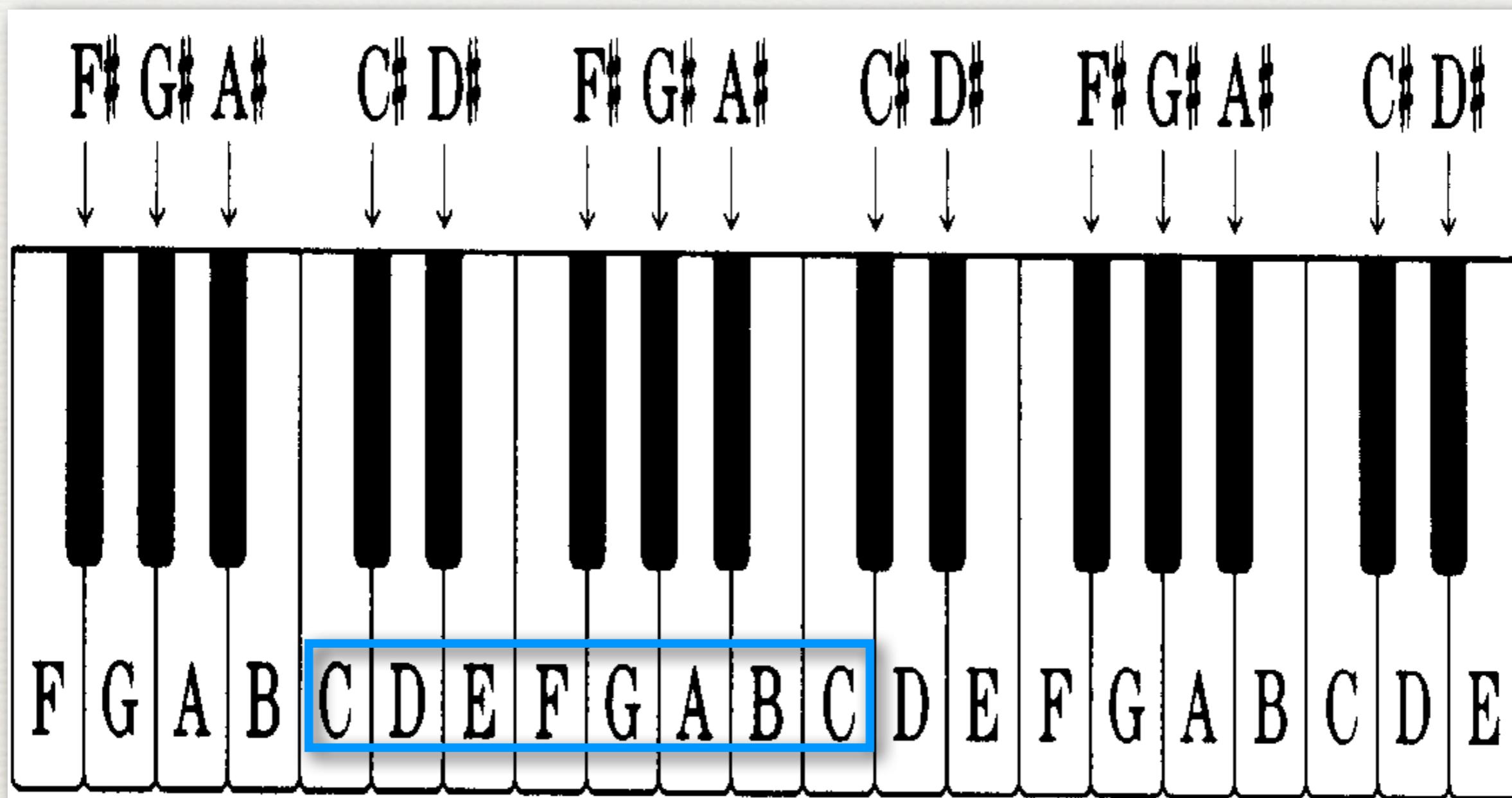
# The *Minor* Scale



# Keyboards and Scales

- ♦ The keyboard (piano, harpsichord, celesta, organ, synthesizer, etc.) evolved along with Western music.
- ♦ It was originally designed around the major scale.

The outlined area is a major scale



# Mode and Key

- ♦ Major and minor *scales* are representations of *mode* — the organization of the tones within a musical composition.

# Mode and Key

- ♦ When a piece of music uses a particular set of notes (those making up the major or minor scales, for example) we say that the piece is *in that mode*.
- ♦ So a piece which employs the set of notes of the major scale is in *major*.

# Mode and Key

- ♦ Mode has a great deal to do with the perceived emotional quality of music.

# Mode and Key

- ♦ “Happy Birthday” in major, as we usually hear it.

# Mode and Key

- ♦ “Happy Birthday” in minor, as we don’t as a rule hear it.

# Mode and Key

- ♦ A *scale* can begin on any note — whether it's major or minor depends on the order of whole and half steps that follows.
- ♦ The note on which the scale begins is the *tonic*.
- ♦ A **key** is a combination of *tonic* and *mode*.

# Mode and Key

- ♦ Bach's First Prelude in C Major

# Mode and Key

- ♦ Bach's First Prelude in A Major

# Mode and Key

- ♦ Pieces of music will sometimes change key during their course
- ♦ This is called **modulation**.

# Texture

- ♦ The term *texture* refers to the blend of various sounds and melodic lines occurring in music.

# Monophony

- ♦ A single unaccompanied melody.

# Polyphony

- ♦ Two or more melodies are heard simultaneously.
  - ♦ The melodies are independent and of approximately equal interest.
  - ♦ Can be *imitative* or *non-imitative*.

# Imitative Polyphony

- ♦ Two melodies; the second (lower) is a copy of the original, just starting at a later time.

# Non-Imitative Polyphony

- ♦ Two melodies; the second (lower) is noticeably different from the original.
- ♦ The second melody may start later than the original, or at the same time.

# Homophony

- ♦ There is only one melody of real interest
- ♦ That melody is combined with other sounds, which act in a supportive role.
- ♦ For example, singing a song while playing chords on a guitar is homophonic texture.