¶3.1

Lecture 3: Scales and Keys



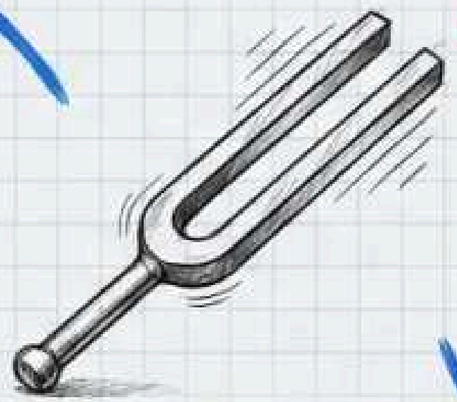


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¶ 3.2

The Major Scale Pattern

Key Signatures



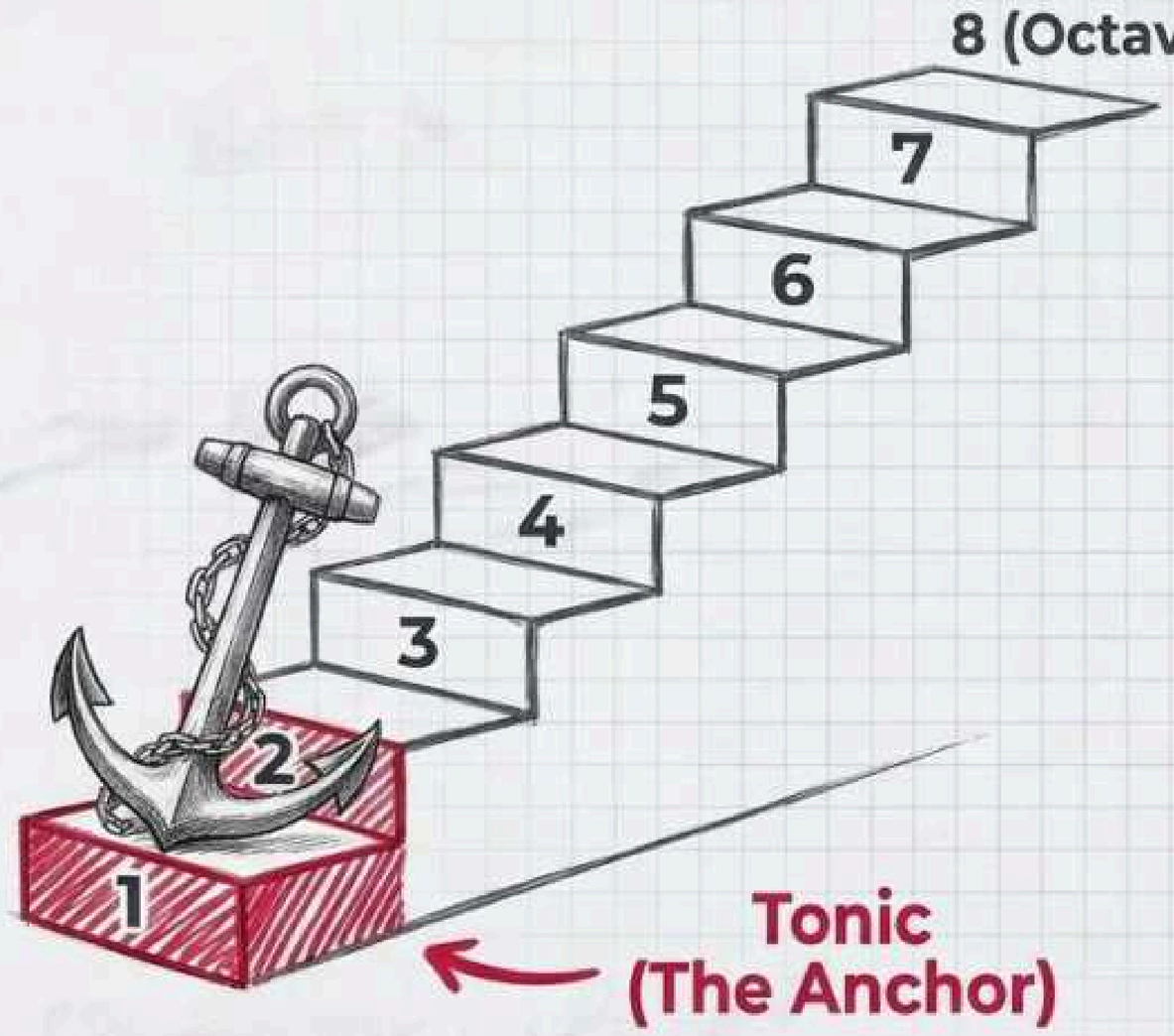
12 Available Notes

The Circle of Fifths

Minor Scales vs. Major Scales

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¶3.3



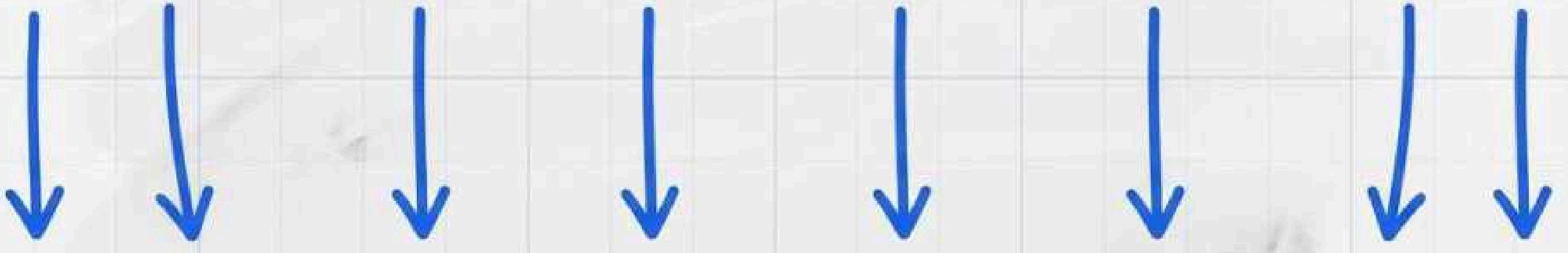
- **Scale:** An ordered set of notes within an octave.
- **Scale Degree:** The number of each note (1-7).
- **Building Blocks:** Built from whole steps and half steps; the pattern decides the character.

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¶ 3.4

The Major Scale Formula

W + W + H + W + W + W + H



doh re mi fah soh lah tee doh

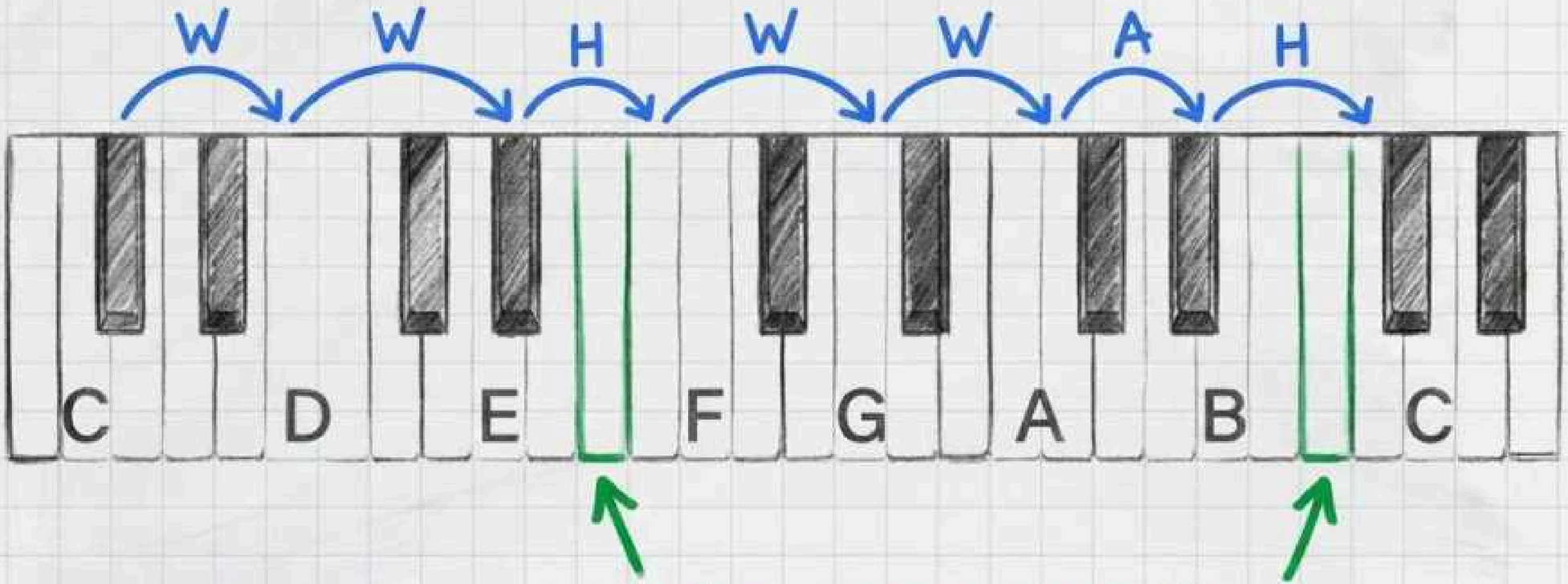
(Tonic)

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C Major: The Easiest Example

¶ 3.5

Uses exclusively white keys.



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Forcing the Pattern (Starting on G)

¶ 3.6

The Problem: G - A - B - C - D - E - F - G

Problem: E to F is a half step. The major formula demands a whole step.

The Solution: G - A - B - C - D - E - F# - G

Solution: Raise F to F# to force the required W step.
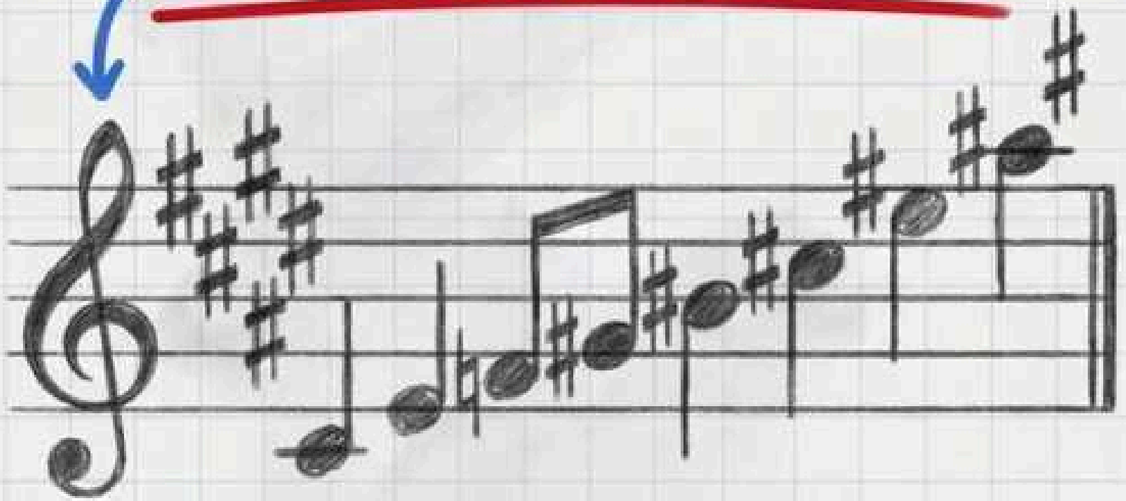
The final step (F# to G) becomes the required H step.

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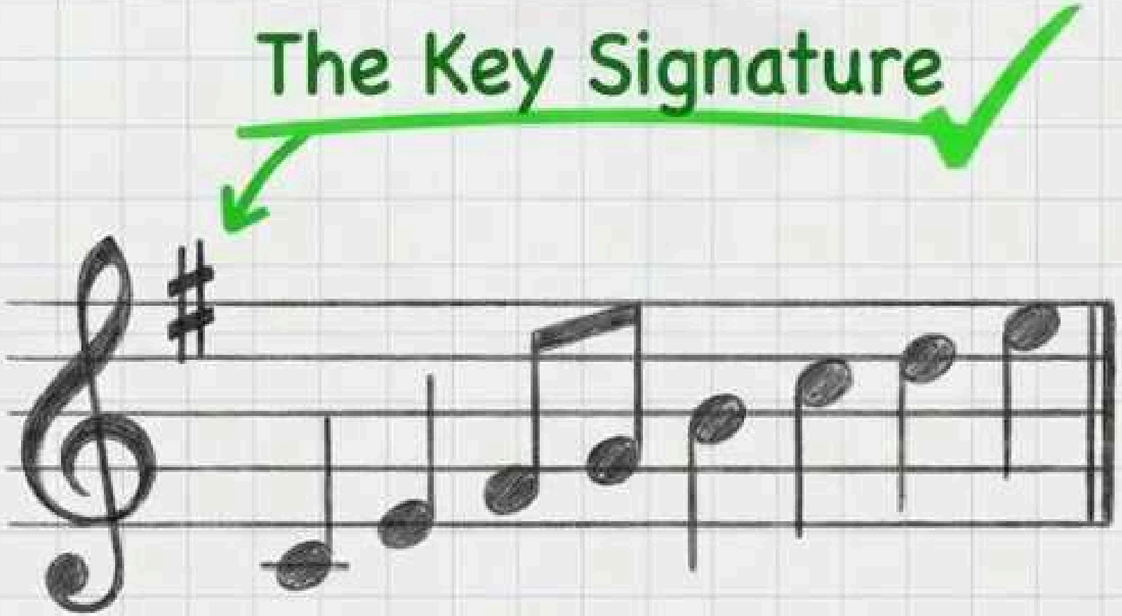
The Efficiency of Key Signatures

¶ 3.7

Inefficient & Cluttered



The Key Signature ✓

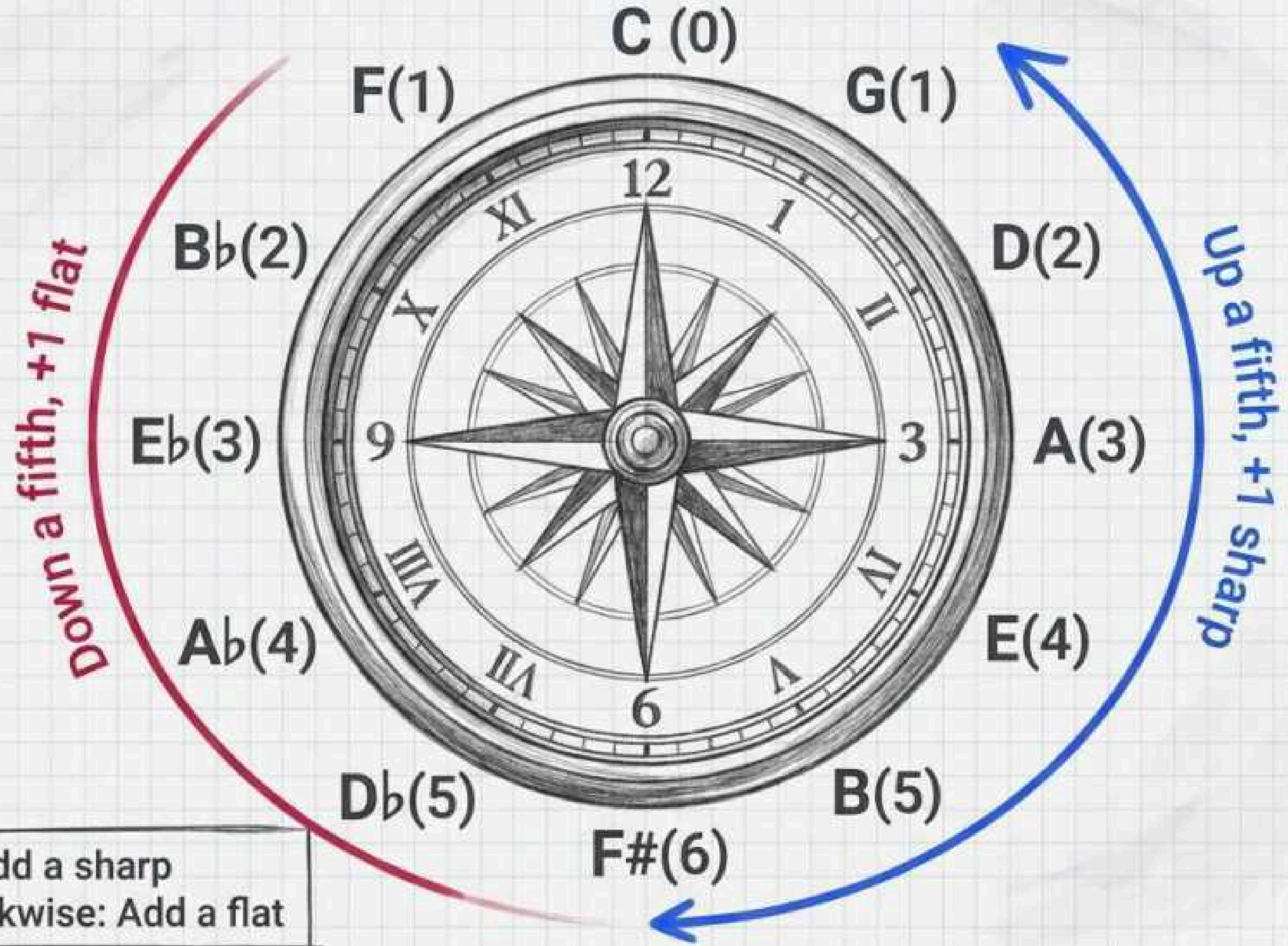


- Collects all required sharps/flats at the start of the staff.
- Saves writing the same accidental over and over.
- Instantly tells the player which key the music is in (e.g., One sharp on F = Key of G Major).

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The Circle of Fifths

¶ 3.8



- Clockwise: Add a sharp
- Counter-Clockwise: Add a flat

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¶3.9

The Hacker's Matrix

The Order of Arrival

F - C - G - D - A - E - B (Sharps) <---> B - E - A - D - G - C - F (Flats)

Shortcut: Finding the Tonic in Sharps

Last Sharp + ½ Step = Tonic

Example: Keys with F# and C# → C# + ½ = D Major.

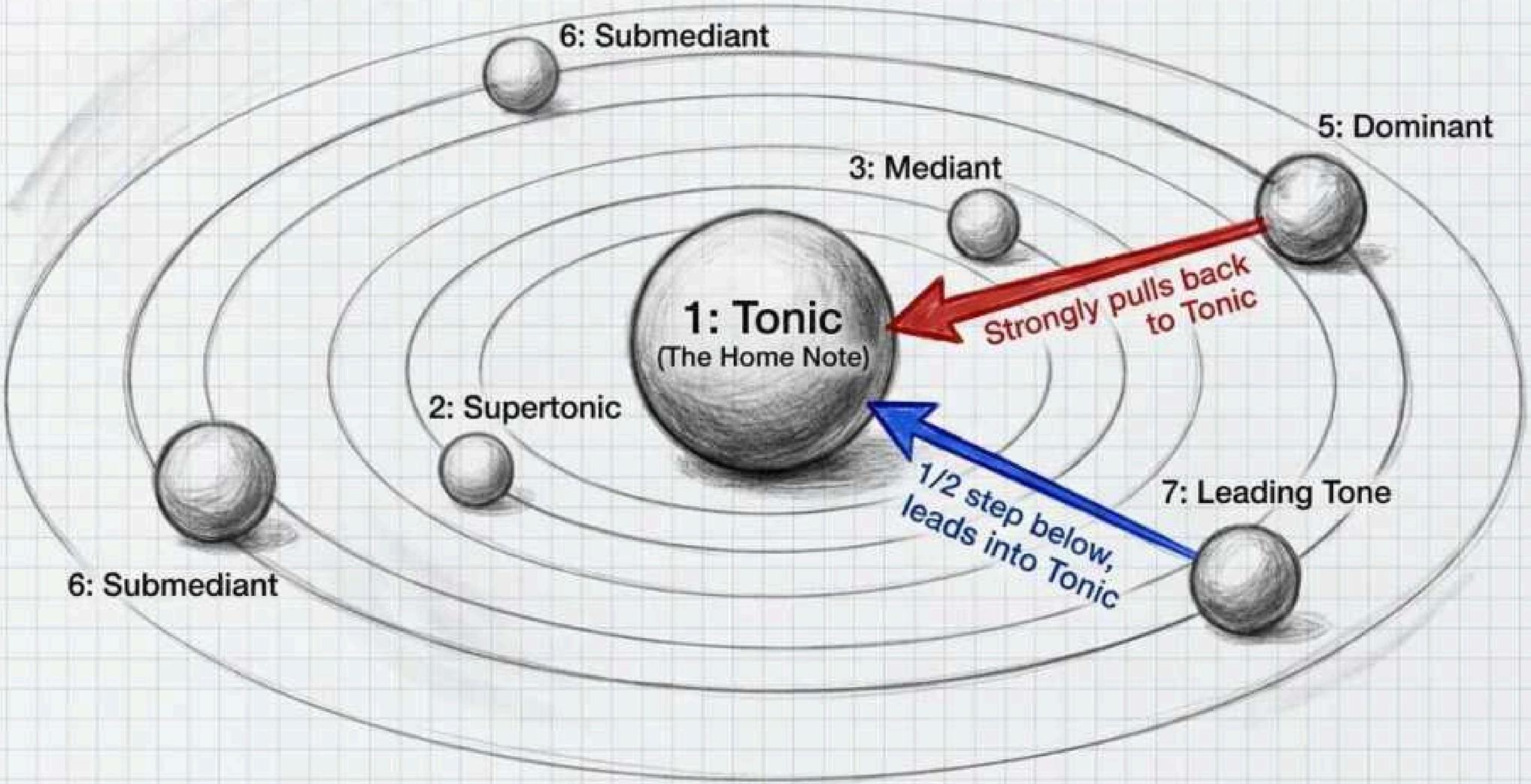
Shortcut: Finding the Tonic in Flats

Second-to-last Flat = Tonic

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¶ 3.10

Taxonomy of Scale Degrees



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The Natural Minor Pattern (A Darker Colour)

¶ 3.11

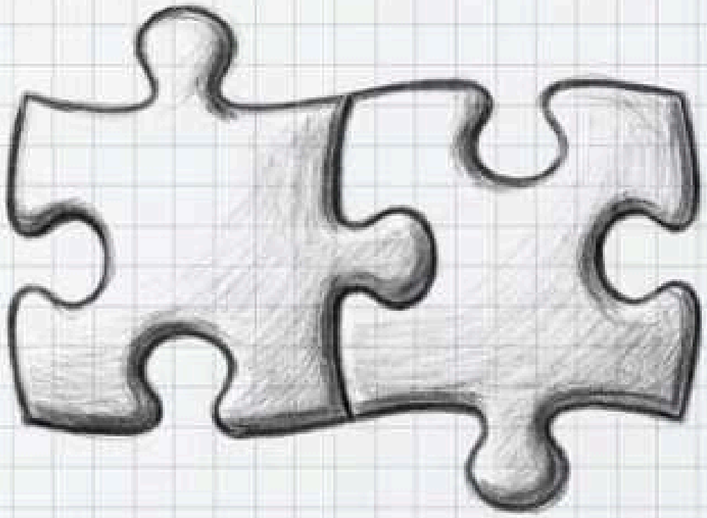


Modification: The 3rd, 6th, and 7th degrees are lowered by a 1/2 step compared to the major scale.
Example: A Minor (A-B-C-D-E-F-G) requires zero sharps or flats.

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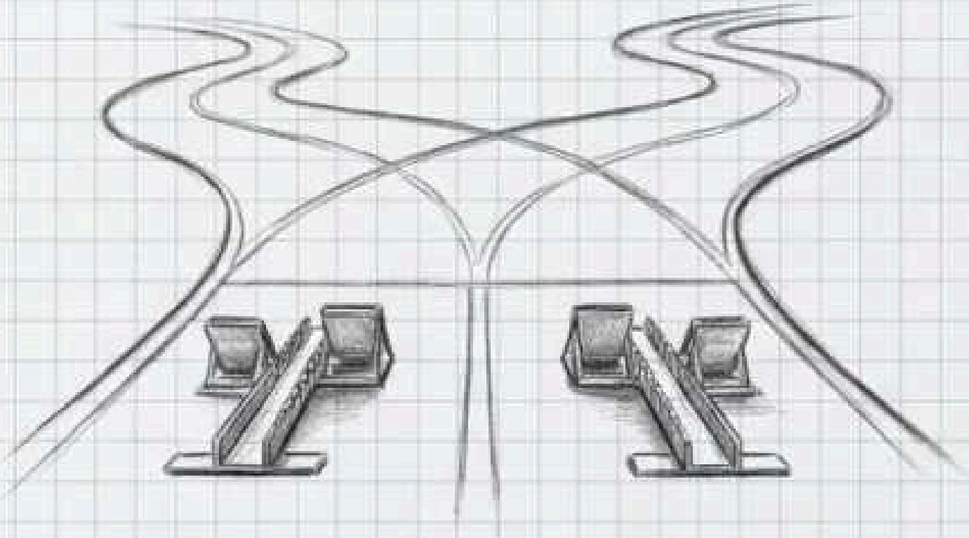
¶3.12

Relative Minor



- Shares the key signature.
- Begins on the 6th degree of the major.
- Example: C Major <---> A Minor (both use all white keys).

Parallel Minor



- Shares the same tonic.
- Different key signature.
- Example: C Major (0 flats) <---> C Minor (3 flats).

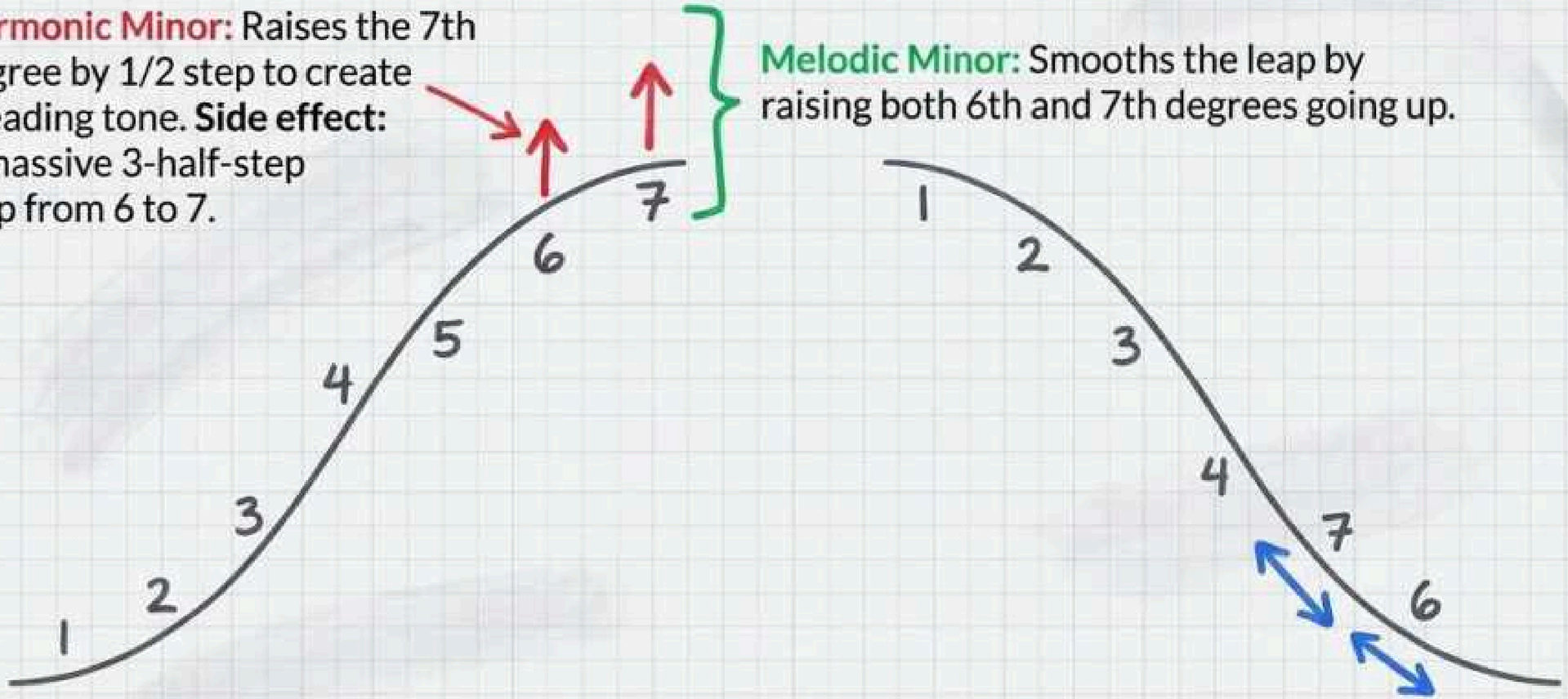
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¶ 3.13

Evolutionary Variations of Minor

Harmonic Minor: Raises the 7th degree by 1/2 step to create a leading tone. **Side effect:** A massive 3-half-step leap from 6 to 7.

Melodic Minor: Smooths the leap by raising both 6th and 7th degrees going up.

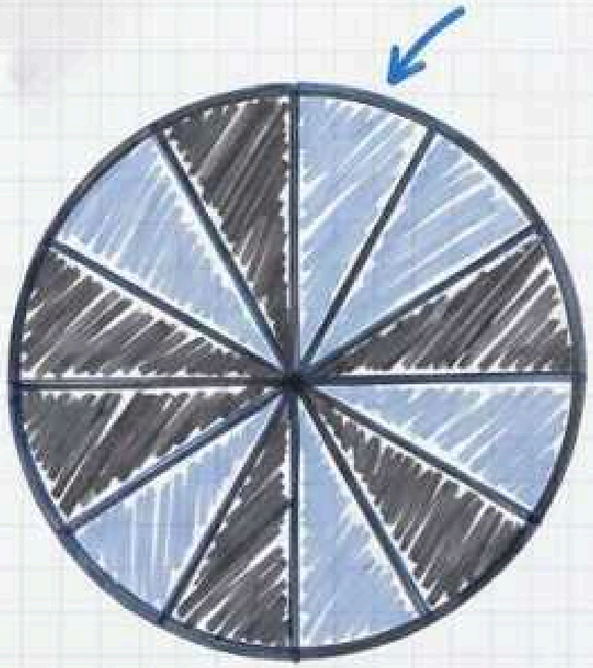


...but reverts back to natural minor coming down.

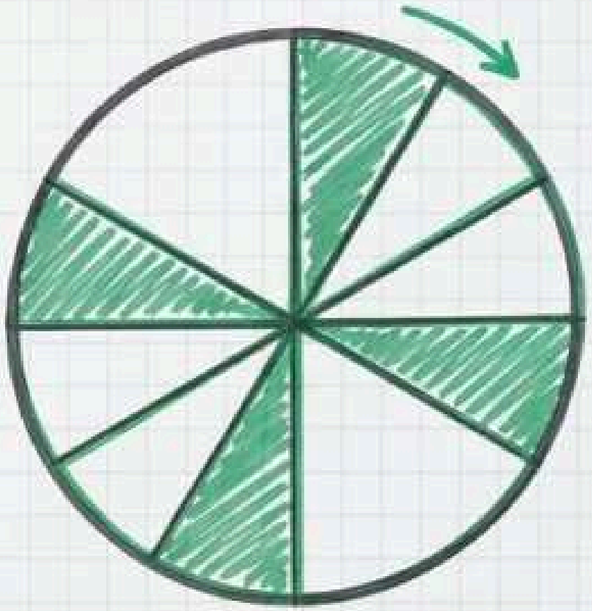
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¶ 3.14

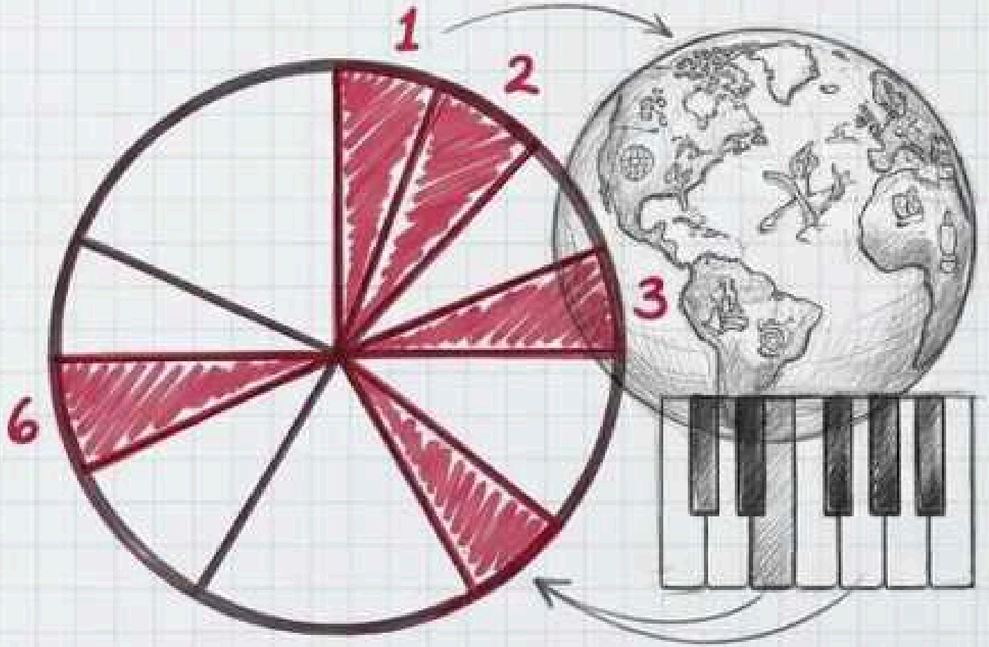
The Multiverse of Scales



Chromatic:
Uses all 12 semitones.



Whole-Tone:
Uses only whole steps (6 notes).

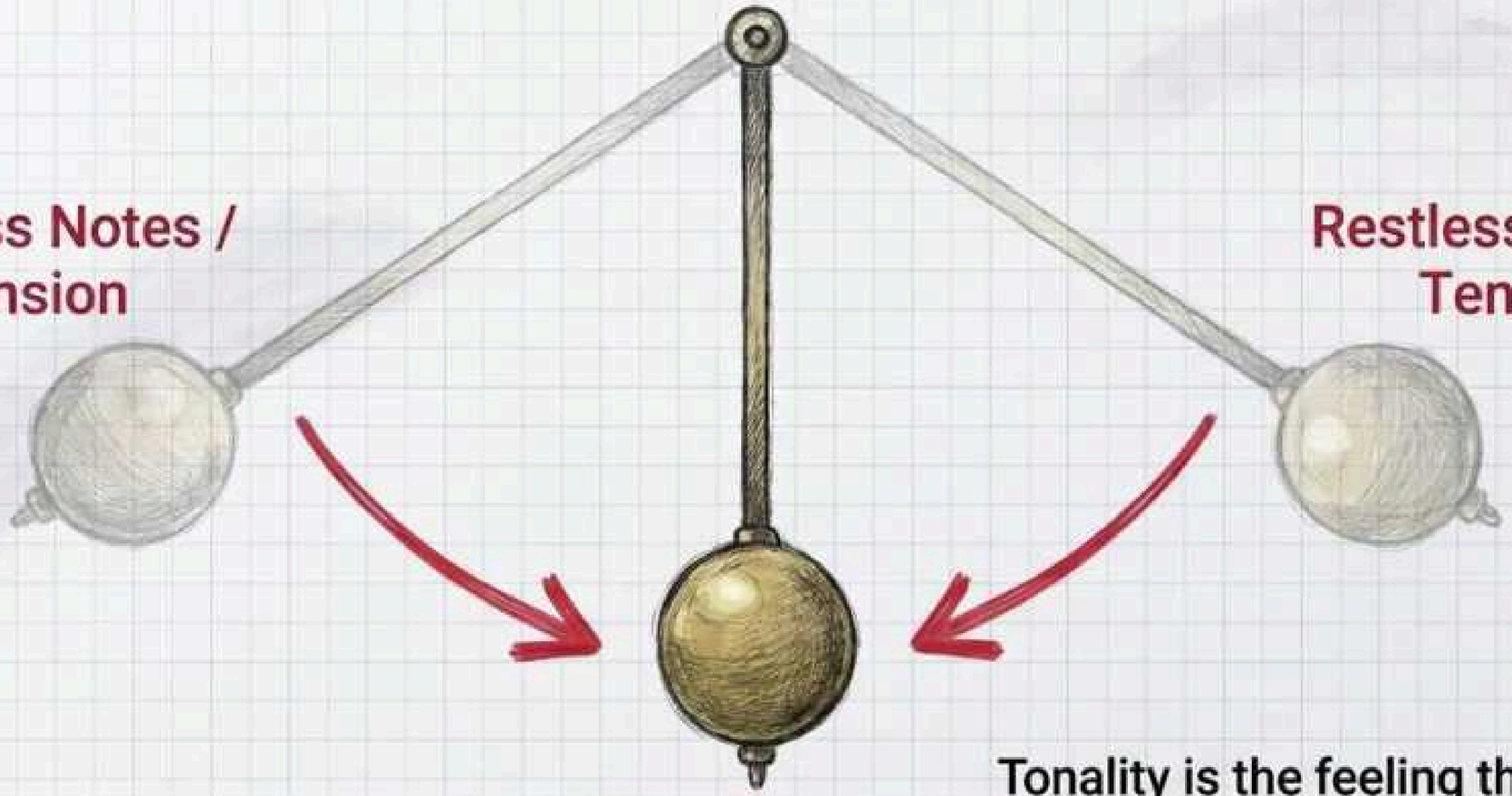


Pentatonic: Uses 5 notes (Degrees 1, 2, 3, 5, 6). Found in folk music globally; physically represented by the piano's black keys.

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¶ 3.15

The Physics of Tonality



Equilibrium
(Doh / Resting Place)
- A sense of home

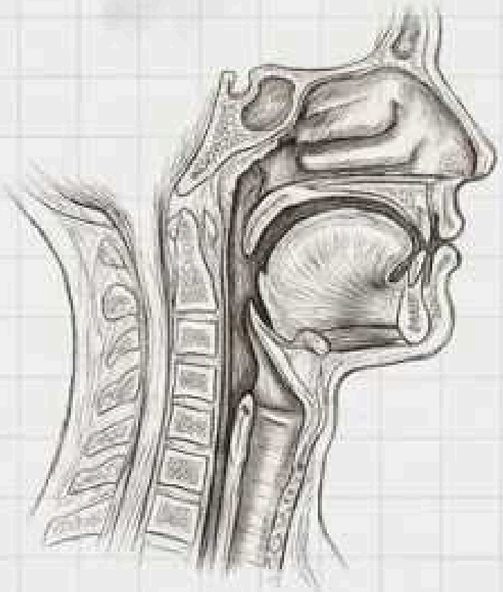
Tonality is the feeling that some notes are restful while others are restless.

Ear Training: Sing solfege and notice which notes pull you back to the center.

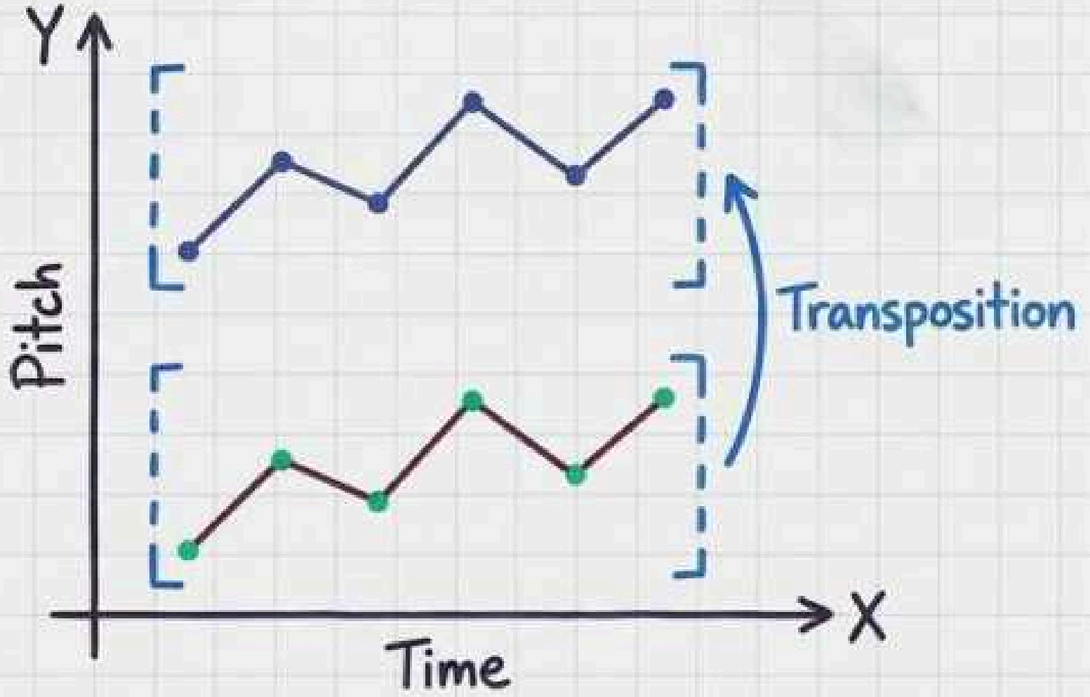
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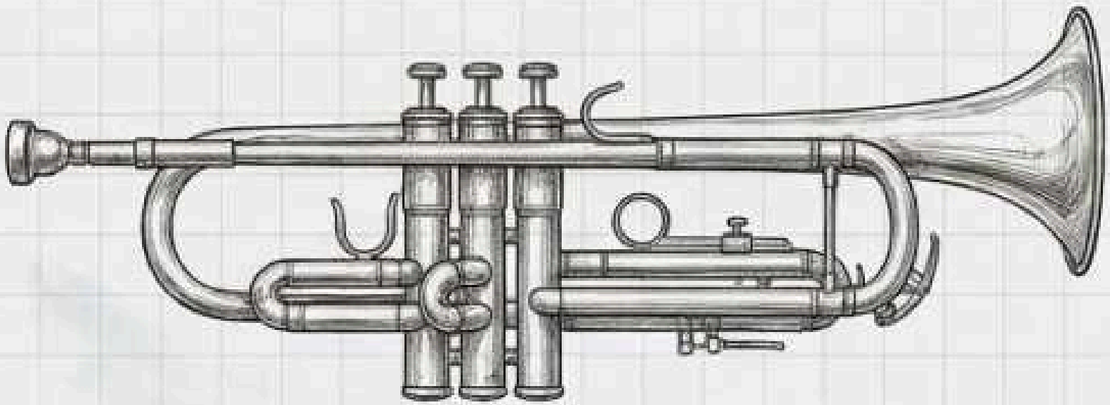
¶ 3.16

The Practicality of Transposition



Why change keys?
To match a singer's physical range or suit specific band instruments.





Shifting every note by the exact same distance. The tune remains recognizable because the pattern of steps defines the melody, not the starting pitch.

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¶ 3.17

Diagnostic Toolkit: Finding the Key

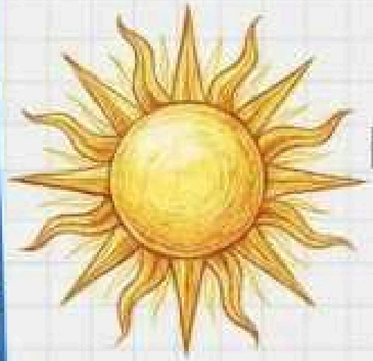
Step 1: Check Key Signature

(Example: 1 sharp = Either G Major OR E Minor)

Step 2: Check the Anchor

Look at the opening/closing chords and final note. Does it settle on G or E?

Step 3: Check the Tone



Bright sound = Major (G)



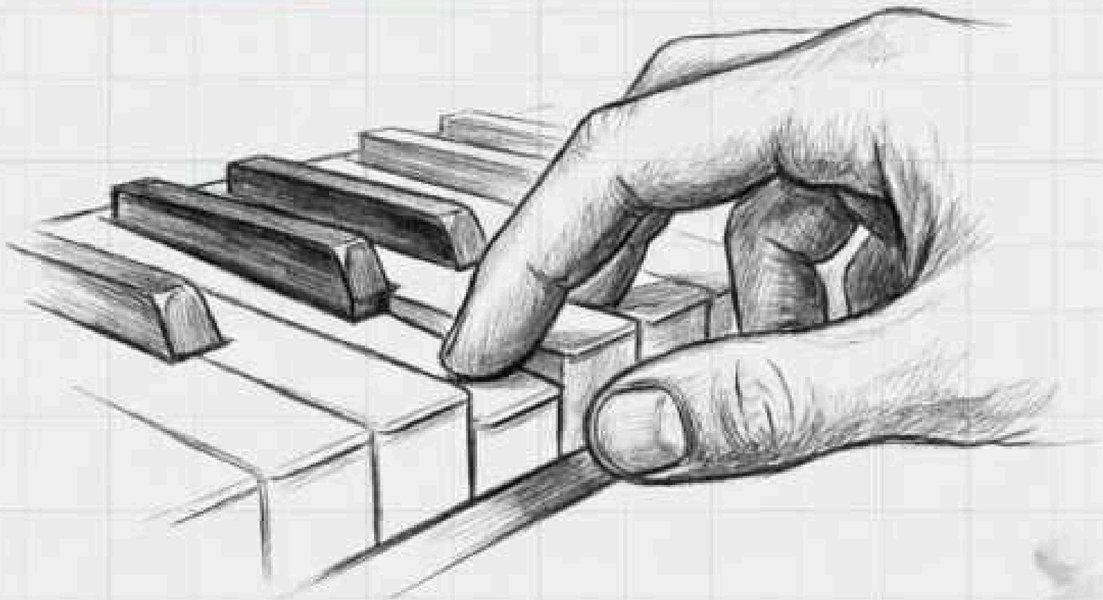
Dark sound = Minor (E)

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¶ 3.18

Practical Application: Pick a song you know. Find its first and last note on a keyboard.

Ask yourself: Does the last note feel like home?



Up Next (Lecture 4): Δ Notes $=$ Intervals (Distances)

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