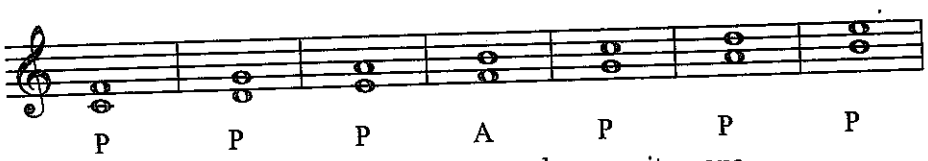
Lesson 24: Fourths and fifths, unisons and octaves

In this lesson you will learn about perfect intervals, fourths and fifths, unisons and octaves, interval inversion, and enharmonically equivalent intervals.

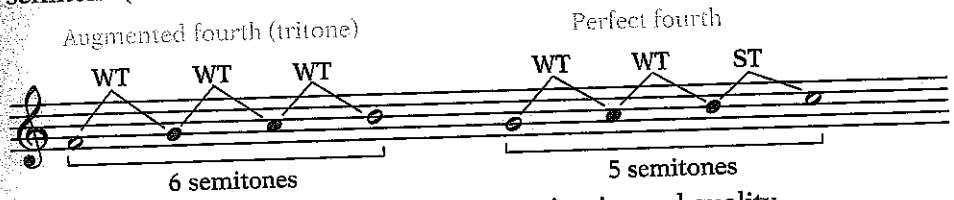
Because of the relative purity of their sound, unisons, fourths, fifths, and octaves are *perfect* intervals. Perfect intervals cannot be major or minor. They can only be *diminished* (if compressed by a semitone), *perfect*, or *augmented* (if expanded by a semitone).

The seven natural fourths are all perfect, except for F–B, which is augmented.

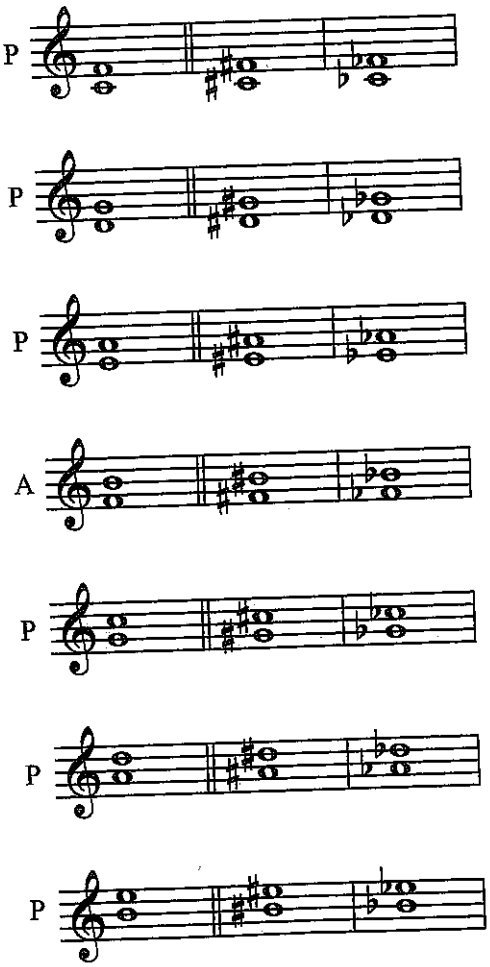
Natural fourths



The augmented fourth is sometimes called the *tritone* because it spans three whole tones (it contains six semitones, or exactly one half of the twelve-semitone octave). Perfect fourths, in contrast, span two whole tones and a semitone (or five semitones).



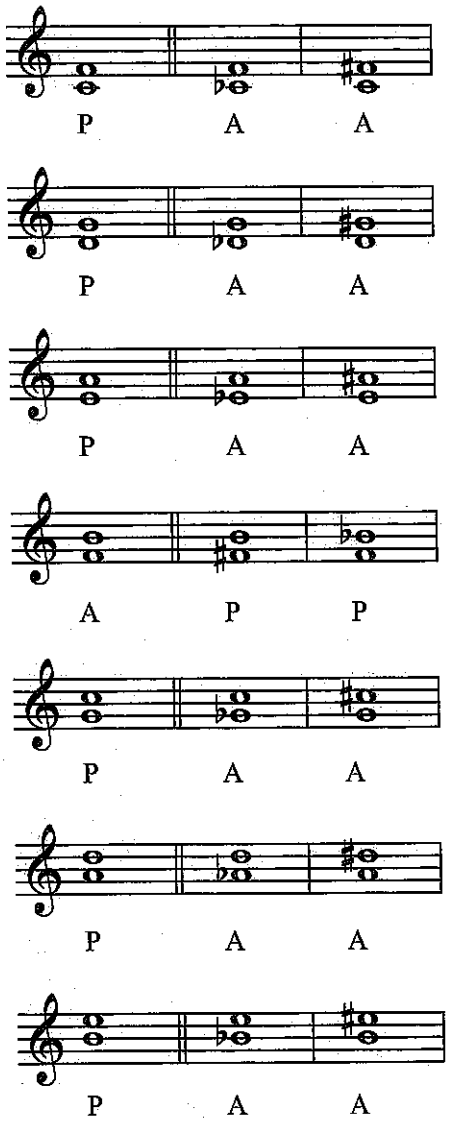
Transposing a natural fourth preserves its size and quality.



Natural fourths transposed

If a perfect fourth is expanded by a semitone, it becomes augmented; if a perfect fourth is compressed by a semitone, it becomes diminished. Diminished fourths are rare, however, and we will concentrate only on perfect and augmented fourths here.

Perfect and augmented fourths

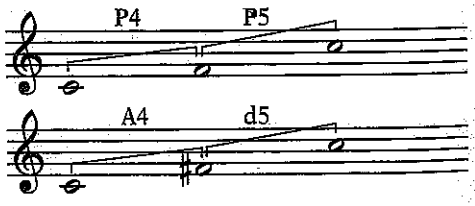


Fourths invert to fifths. Perfect intervals invert to perfect intervals and (as with seconds, thirds, sixths, and sevenths) diminished intervals invert to augmented intervals, and vice versa.

Inverting fourths and fifths

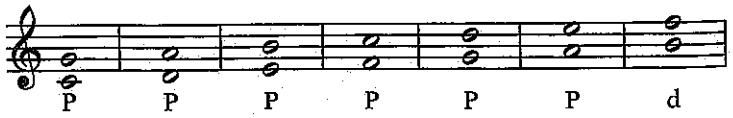
Perfect 4th ↔ Perfect 5th

Augmented 4th ↔ Diminished 5th

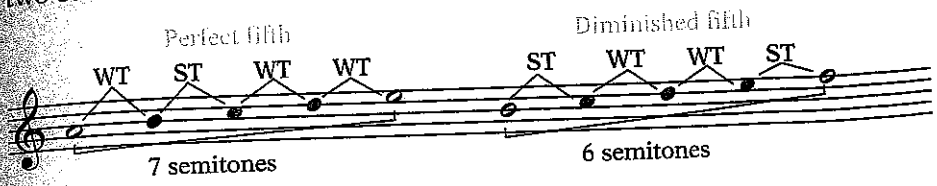


All the natural fifths are perfect except for B–F, which is diminished.

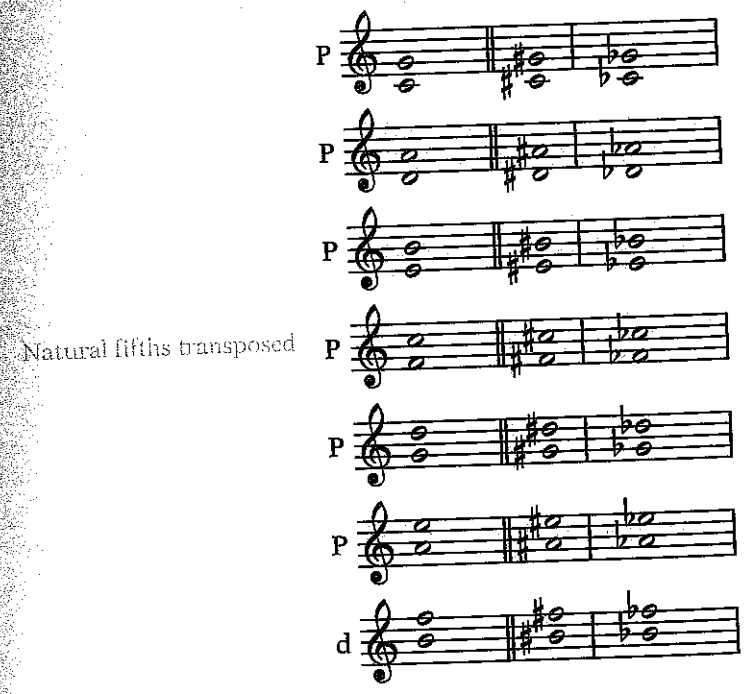
Natural fifths



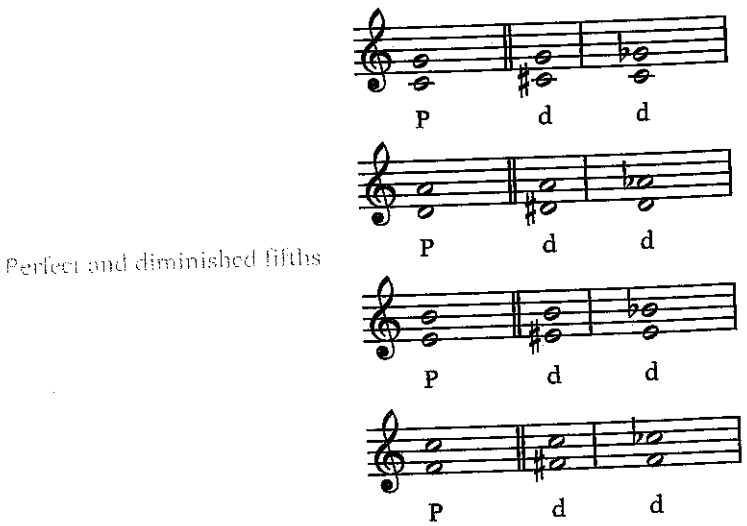
A perfect fifth contains seven semitones (or three whole tones and a semitone); a diminished fifth contains six semitones (or two whole tones and two semitones).



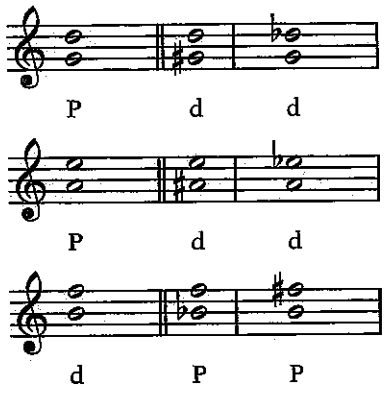
Transposing a natural fifth preserves its size and quality.



If a perfect fifth is expanded by a semitone, it becomes augmented; if it is compressed by a semitone, it becomes diminished. Augmented fifths are rare, however, and we will be concerned here only with perfect and diminished fifths.



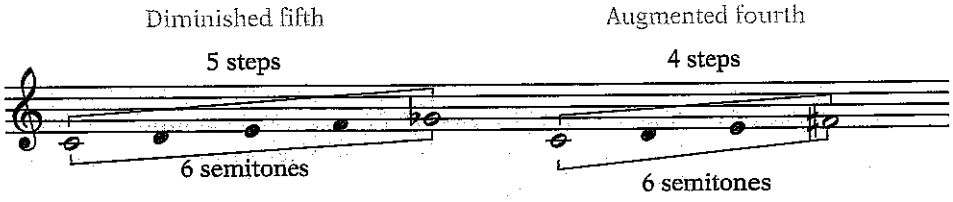
Perfect and diminished fifths (cont.)



In sum, while fourths and fifths may be diminished, perfect, or augmented, we will be concerned here only with perfect and augmented fourths and with diminished and perfect fifths.

	Diminished	**Perfect**	**Augmented**
Fourths (number of semitones)	~~C♯–F~~ 4	C–F 5	C–F♯ 6
Fifths (number of semitones)	C♯–G 6	C–G 7	~~C–G♯~~ 8

A diminished fifth and an augmented fourth both contain six semitones. They are thus enharmonically equivalent. They are the same absolute size but span a different number of steps.

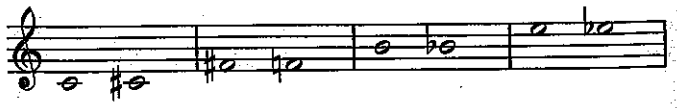


Two notes on the same pitch create a perfect unison.

Perfect unisons

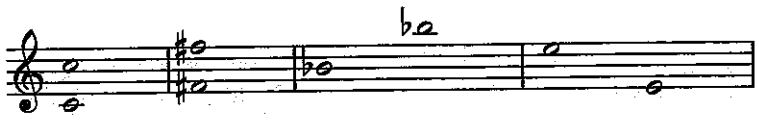
If one of the notes is a semitone higher than the other, but still maintains the same letter name, then the interval is an *augmented unison* (there is no such thing as a diminished unison). Normally, we will just refer to such intervals as *chromatic semitones*.

Augmented unisons (chromatic semitones)



The octave is like the unison. A perfect octave is a single note repeated an octave higher or lower.

Perfect octaves



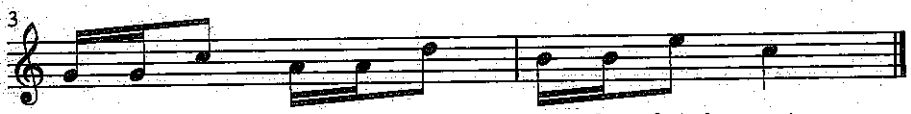
As with the other perfect intervals, compressing a perfect octave by a semitone produces a diminished octave; expanding a perfect octave by a semitone produces an augmented octave. But diminished and augmented octaves will not be discussed further here.

Lesson 24: In-class activities

1. Singing. Sing the following melodies. The lyrics identify the qualities of the natural fourths and fifths.

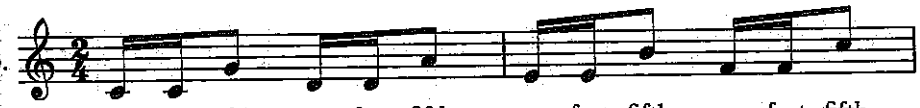
a.

Per - fect fourth, per - fect fourth, per - fect fourth, aug - men-ted fourth,

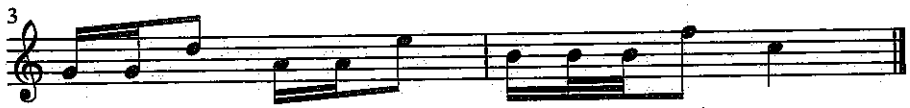


per - fect fourth, per - fect fourth, per - fect fourth, yes!

b.



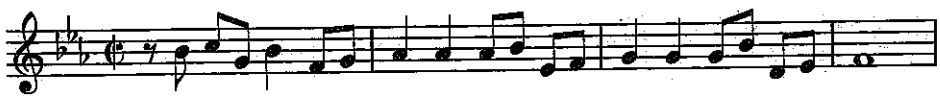
Per - fect fifth, per - fect fifth, per - fect fifth, per - fect fifth,



per - fect fifth, per - fect fifth, di - min-ished fifth, yes!

2. Singing. Sing the following melodies. Identify the qualities of the fourths and fifths.

a. Arlen, "Over the Rainbow" (the downward leaps arrive on successively lower notes: G–F–E♭–D).



b. Chopin, Prelude in C minor (this bass line moves mainly in fourths and fifths).