Instruments of the Orchestra: The Four Families

An orchestra sorts its instruments into **four families** by how each one starts its sound. For each instrument the chart shows its clefs, whether its part **sounds as written**, and about how far its written notes reach.

HOW EACH FAMILY MAKES ITS SOUND

Strings A string vibrates. The player draws a bow across it or plucks it.

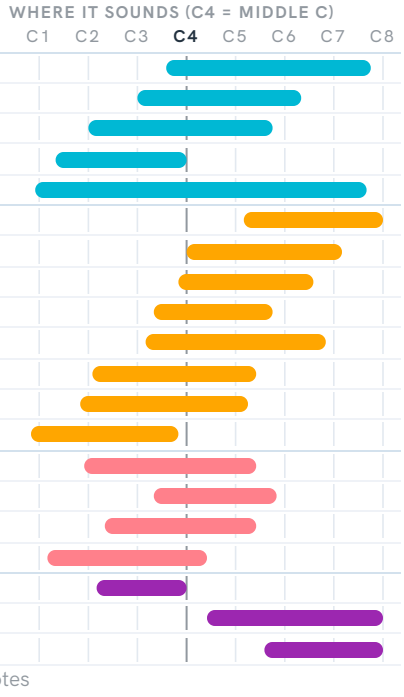
Woodwinds Air vibrates. The player blows across an edge (flute, piccolo) or through one reed (clarinet, saxophone) or two (oboe, English horn, bassoon).

Brass The player buzzes the lips against a mouthpiece. Valves or a slide change the length of the tube.

Percussion The player strikes it with sticks, mallets or beaters, or clashes two cymbals together.

THE CHART

	INSTRUMENT	CLEF(S)	SOUNDS	WRITTEN RANGE
STRINGS	**Violin**	treble	as written	G3–A7
	Viola	alto, treble	as written	C3–E6
	Cello	bass, tenor, treble	as written	C2–A5
	Double bass	bass	**an octave lower**	E2–C5
	Harp	treble + bass	as written	C♭1–G♯7
WOODWINDS	**Piccolo**	treble	**an octave higher**	D4–C7
	Flute	treble	as written	C4–D7
	Oboe	treble	as written	B♭3–G6
	English horn	treble	**perfect 5th lower**	B3–E6
	Clarinet in B♭	treble	**major 2nd lower**	E3–C7
	Bass clarinet in B♭*	treble	**major 9th lower**	E♭3–G6
	Bassoon	bass, tenor	as written	B♭1–E♭5
	Contrabassoon	bass	**an octave lower**	B♭1–B♭4
BRASS	**Horn in F**	treble, bass	**perfect 5th lower**	F♯2–C6
	Trumpet in B♭**	treble	**major 2nd lower**	F♯3–C6
	Trombone	bass, tenor	as written	E2–F5
	Tuba	bass	as written	D1–F4
PERCUSSION	**Timpani (set of five)**	bass	as written	D2–C4
	Xylophone	treble	**an octave higher**	F3–C7
	Glockenspiel	treble	**two octaves higher**	G3–C6
	Snare drum, bass drum, cymbals	—	no definite pitch: they play rhythms, not notes	



Sounds: "as written" means the part is written at concert pitch. A **transposing** instrument reads one note and sounds another; a written C on a B♭ instrument sounds B♭, on an F instrument F (Handout 392). *In bass clef, a bass clarinet part sounds a major 2nd lower. **Trumpet in C sounds as written.
Written range: approximate, for orchestral players: the notes two orchestration references both give. Some instruments go further, such as a flute with a B foot (down to B3) or a double bass with a fifth string or a low extension. A standard set is four timpani; a small fifth drum adds the notes up to C4.

SORT THE FAMILIES

Cover the chart. Write each instrument in its family box. Sort by **how the sound starts**, not by what the instrument is made of. Then uncover the chart and circle each instrument in your boxes that the chart shows does **not** sound as written.

Flute · Tuba · Harp · Glockenspiel · Saxophone · Viola · Horn in F · Snare drum · English horn · Double bass · Timpani · Trombone

STRINGS	WOODWINDS	BRASS	PERCUSSION

MIDDLE C IN EACH CLEF

Four clefs, one note: C4 (more in Handout 390).



Treble clef
C4: one ledger line below



Alto clef
C4: middle line



Tenor clef
C4: 4th line



Bass clef
C4: one ledger line above

TRY IT To sound **A4** (the A above middle C), which **written** note does each player read? Use the Sounds column backward.
Clarinet in B♭ _____ Horn in F _____ English horn _____

Answers — Strings: Harp, Viola, Double bass · Woodwinds: Flute, Saxophone, English horn · Brass: Tuba, Horn in F, Trombone · Percussion: Glockenspiel, Snare drum, Timpani. Circled: Glockenspiel, Horn in F, English horn, Double bass (the saxophone, not on the chart, transposes too). Try it: Clarinet in B♭ B4, Horn in F E5, English horn E5.

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