

The brass section was greatly increased; trombones were now a fixed member of the orchestra. In addition, the valve mechanism and key system were perfected, increasing the flexibility of wind instruments in general. The choice of wind instruments, including woodwind, increased. The number of percussion instruments also grew, allowing more colorful effects. As before, the number of string players had to increase to balance out the orchestra.

One of the more innovative composers was Wagner; he exploited the new developments in wind instruments. Breaking away from the traditional double wind, he experimented with triple wind, and in *The Nibelung*, he used 4 flutes, oboes, clarinets and bassoons, and 8 horns together with a wide variety of brass instruments for a total of 36 wind players. He also scored for 2 sets of timpani, 6 harps and 64 strings.

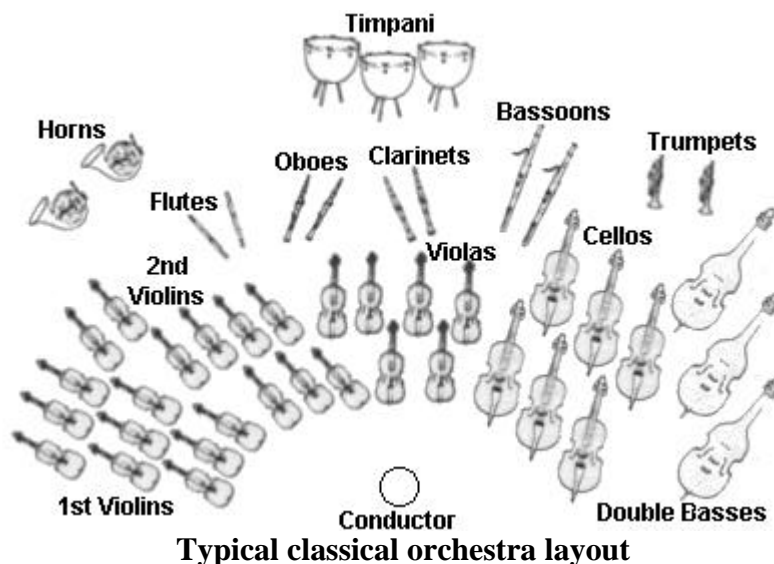
In the latter part of the 19th century the orchestra was often enlarged, German composers like Strauss and Mahler having followed Wagner's cue. French composers, however, used smaller orchestras, emphasizing instead clarity and distinctive timbres.

The 20th century was a time of innovation; traditional views of the orchestra were challenged. John Cage, an American composer, used the piano in such a way as to simulate a whole percussion ensemble. Other composers such as Webern combined the tone sounds of instruments in different ways. Electronic methods were also used to create new sounds and effects.

The end of the 17th century and the beginning of the 18th saw the beginnings of the Classical period. The woodwinds took their place as a proper section, usually combined in pairs. The use of a pair of horns gradually replaced the continuo, filling out the texture of the orchestra. This combination of instruments is known popularly as the 'Classical Orchestra'; this is because most works of this period, including Haydn's last symphonies and Beethoven's earlier ones, were composed for this particular combination.

A famous orchestra of this time period was the Mannheim Orchestra, which numbered 46 players in 1782, comprising of skilled musicians who were considered the best in Europe. Mozart was said to have been influenced by the performance of their clarinetist, leading him to use the clarinet in his works as often as he could. The Orchestra had a reputation for elegant and precise performances and was also renowned for its use of effective variations in dynamics.

Mozart influenced the development of the Orchestra in his own way. His works led to the acceptance of the woodwinds as a complete and independent section of the orchestra, as well as causing the decline in the use of the continuo. He also experimented with the timbres of the various instruments, mixing them in new ways. Haydn, too, had a hand in this stage of the evolution of the orchestra.



Towards the end of the Classical period Beethoven brought about some innovations in orchestral arrangement; these included the addition of instruments such as the piccolo, double bassoon, bass drum. The scores for cello and bass in his works were separated, which was uncommon for that time. It is mainly due to him that the standard woodwind section was fixed to be the 'double wind' configuration, with 2 of each instrument. His brass section was also enlarged, for example his 9th Symphony required 4 horns. These changes required a larger string section to balance the overall sound of the orchestra, and this in turn led to an increase in the power of the orchestra.

In the Romantic period not only was there a marked change especially in the size of the orchestra, there was also a change in the style of music they performed. Composers tended to experiment with the harmonies, leading to the use of discords to heighten emotional effects. Melodies also became more song-like.

History of the Symphony Orchestra

There probably would have been orchestras of some sort ever since musical instruments were invented, with a group of musicians playing together. However the roots of the symphony orchestra as we know it can be traced back to the 17th century.

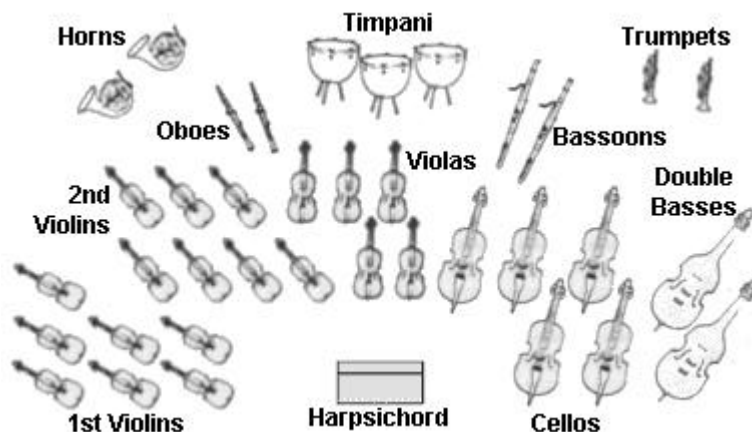
In the early 17th century there existed small groups of musicians that played a random assortment of instruments. However, the organization of these groups varied.

It was only when Monteverdi established the opera genre in Italy that a standard was first set for a group of musicians playing together. Monteverdi ensured that the singers had a body of accompanying instruments, most of which were viols, predecessors of today's stringed instruments.

The importance of string groups was increased when Lully, court composer to Louis XIV of France, established a string orchestra called the '24 Royal String Players.' String groups formed following that had a maximum of some 25 players, but a smaller group was the norm as most composers usually wrote for strings or woodwind and a single keyboard instrument.

Towards the latter part of the 17th and early 18th centuries, Italian violinists-composers such as Correlli, Torelli, Tartini and Vivaldi established the concerto grosso and the solo string concerto, and the development of these greatly bolstered the importance of string orchestras.

The early composers wrote simple pieces, placing emphasis on treble and bass lines. The first and second violins played in unison a third apart, and the violas (and often the double bass) doubled the cello part. Other instruments like recorders, horns or timpani, were added as required by each composer, sometimes as soloists, or to provide special effects. There was also a harpsichord continuo, which 'continually' filled in the harmony, reinforced by a single cello, the basso continuo.



Typified late 17th - and early 18th - century orchestra

Compared to the early part of the 17th century, the orchestral sounds were definitely fuller and richer. The size of the orchestra grew to about 35 members, however this still varied widely in different areas. It was during this period that instrumental music grew in stature to match that of vocal music.