

BUILDING UPWARDS: FROM GOTHIC CATHEDRAL TO CONTEMPORARY SKYSCRAPERS

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Topic of the lesson: THE GOTHIC CATHEDRAL

Duration of lesson: 2 hours

LESSON PLAN

ACTIVITIES/TASKS	CONTENTS	SUBSIDIES/MULTIMEDIAL SUPPORTS
Brainstorming	What do you know about Gothic Cathedral?	Paper blackboard
Fill in the gaps using the following words	Gothic context	photocopies
Reading and understanding	Charateristic of the French Gothic model	text
Matching the key words with the right definition (working in pairs)		Cards activities
Watching a video	Engineering models: Gothic Cathedral by University of Waterloo	lim
Choose the best answer to complete the sentence		photocopies

Key words:

Cathedral , Nave, Transept, Pillar, Apse, Pointed arch, Ribbed vaults, Load-bearing walls, Buttress Flying buttress.

Outcomes: Draw the section of a Gothic Cathedral and indentify the key words on it.

THE GOTHIC CATHEDRAL

ALLEGATO N° 1

Characteristic of the French Gothic Model

During the 12th and 13th centuries the cathedral had been the catalyst of every artistic effort. Here the emergence of a new architectural language, later named Gothic, was marked by the introduction of new distinguishing features on the level of construction, spatial organization and decoration.

The transformation began in the Ile-de France (the Parisian region) and was pushed forward by the desire to celebrate God and to express the divine through astonishingly tall buildings. This search increased the interest for the technical aspects of construction and resulted in a new structural organism consisting in a framework of **pillars, pointed arches** and **ribbed vaults** which soon replaced the ancient building system based on thick **load-bearing walls**.

The thrusts (reaction forces) caused by loads from above (the masonry, the roof) were concentrated on points (such a pillars) and transferred outward, where they were counterbalanced by massive **buttresses** and **flying buttress**.

In this way the Gothic structure freed itself of massive walls and transformed the building into a more flexible and transparent system.

Several changes in plan and elevation occurred.

The reduction of wall partitions ended in a greater continuity between the **nave**, the **transept** and the **choir**.

Once the walls had lost some of their load-bearing function, it moreover became possible to expand the windows to a great extent. Spaces between the walls were thus covered with polychrome glasses that brought coloured sun rays into the church interior. Illumination became a fundamental both in terms of spatial aesthetic quality and in term of figurative representation of the sacred.

GLOSSARY

Cathedral	the principal Christian church in a diocese, built in the bishop's administrative center and housing his throne.
Nave	central and principal part of a Christian church, extending from the entrance to the transept
Transept	the arm of a cruciform church, perpendicular to the nave.
Pillar	a masonry support made up of stone, often square or rectangular in plan and capable of carrying very heavy architectural loads. Often also compound pillar.
Apse	a large semicircular or polygonal (and usually vaulted) niche . in a Christian church , it contains the altar.
Pointed arch	an arch having pointed apex, used in Gothic architecture to support the weight of the vaulted ceilings. Thanks to its shape, this kind of arch placed less stress on the walls, which can be thus made thinner.
Ribbed vaults	a vault made by connecting diagonal arches, reaching from corner to corner, with other arches that cross over the sides.
Buttress	an external support structure used to transfer the weight of walls and roof outwards and down to the ground.
Load-bearing walls	a wall that bears the weights of the building above.
Flying buttress	it is attached to the exterior walls by an arch or an half-arch.