

Measure for Measure_ Extend

In the explore part students measure height of element of building. They can calculate the maximum volume of the it with formula of the volume of a parallelepiped.

Your students have to try to calculate the internal volume of the building. The Cathedral of Palermo has a module flooring that is useful in the calculation of the area. In general, Christian churches respect the 1: 2 proportion between the transept and the central nave, so it could be useful to measure the first and check the proportion. This is a helpful information seeing as it is not always possible to reach behind the main altar because the area could be closed to the public for the presence of the consecrated host in the tabernacle (a light is often turned on to signal it).

So if they have a measure of module they can calculate length and wide of building (we imagine that it has got rectangular base).

For the height, students can use the laser meter or the quadrant as they did outdoors, always remembering to add their height. In this case it is interesting to make more measurements and decompose the area of the base again into smaller portions. So multiple students teams will make many measurements to understand if ceilings are more or less the same height and if it is right to choose the ceiling lower to calculate volume. Also this activity involve the concept of media and it is possible to use template upload in explain part.

After finding the two volumes, a first approximation is to average the two values to find a value that approaches the real volume occupied by the building. Palermo Cathedral has a series of projecting sides, for example the transept, it could be interesting to stimulate the students to observe it and rethink how to calculate the volume in light of these observations.

Another example of activity to do, it is to compare the height of the cathedral with the roof of the buildings in front or on the side. Working in pairs, one of two students raises their arms so that the tips of their hands ideally touch the top of the two buildings. The second student checks that the height of the hands is the same and indicates to the partner if and how to move to achieve this. At this point we can make an estimate on the distances of the two buildings compared to the boy and this allows us to understand the distribution of the space around us, even if in a modern historical context for example, the Cathedral has remained an important element.

If they like, students can make a sketch or draw Cathedral, highlighting a detail or a corner of the building that most affected them, perhaps repeating the drawing with a different light.

Authors: Giulia Cordone and Valeria Greco