Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
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Mathematics and Architecture Design

Guide for Curriculum Unit 93.01.07
by Winnifred Morgan

This unit covers a study of architecture and its unique relationship to Mathematics. It incorporates the study of such mathematical concepts as ratios, proportions, scales, symmetry and similarity in its endeavor to highlight the unique inter-relationship between the two disciplines.

The introduction highlights some of the basic causes of concern among educators regarding the non-integration of the curriculum which allows Mathematics and Architecture to be treated as either or as polarities, thus causing students to be at a disadvantage when it comes to making intelligent decisions relating to architectural problems of daily living. Briefly stated, the major concern is that, if the gap is to be bridged between ideas from Architecture and Mathematics, the curriculum must be changed to facilitate this process. In addition, the teacher must pose tasks that will engage the student's intellect and foster better understanding of mathematical concepts and procedures while simultaneously stimulating students to make the necessary connections between the two disciplines.

The next section gives definitions and explains the mathematical concepts of elementary Geometry and states their unique relationship to architecture. There is also a brief history of architecture as it emerged in the Western World. An explanation of the basic elements of architecture and the design vocabulary are also included. Activities include lesson plans on ratio and proportion as they relate to architectural designing, model building, and the need for mathematical accuracy in measuring, and lastly analysis of buildings from drawings.

(Recommended for Art, Algebra II, Geometry, Mechanical Drawing, Grades 11 or 12)

Key Words

Architecture Basic Design Geometry History Mexican General