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Mathematical Connections in Art, Music, and Science

Constructing a Piano A Key is Provided by Leonhard Euler

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Developing a scale for a keyboard instrument involves a certain set of criteria. "Dividing the octave" is a general problem in which one must decide how many notes should be in an octave in order to preserve a certain harmonic structure. The background of this problem and the contributions of Leonhard Euler, history's most prolific mathematician, will be presented. Other schemes for structuring the octave will be briefly considered.