962-B1-162   **David Fowler*** (`dfowler@unlserve.unl.edu`), 118 Henzlik, University of Nebraska-Lincoln, Lincoln, NE 68588-0355. *The Fractal Dimension of the Blues.*

Plotting pitch height against time for a single-note blues guitar solo results in a discrete approximation to a (possibly) fractal curve. One can then conjecture that the fractal dimension of the curve yields some measure of the complexity of the musical phrase. The resulting calculations imply that the complexity of a blues phrase is greater than for a simple musical scale or arpeggio and comparable to phrases from other musical genres. This student project combines mathematics with some interesting psycho-physical problems in musical perception. The mathematical background of this problem, involving the derivation of a power law through log-log plots, uses standard calculating techniques. Unlike some "modeling" problems, however, fractal modeling does not always result in a unique solution. The instructional advantages and disadvantages of using classroom problems that lack unique solutions will be addressed, along with a brief summary of some recent opinions about the validity of fractal modeling. (Received August 17, 2000)