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James J. Madden* (madden@math.lsu.edu), 222 Prescott Hall, LSU, Baton Rouge, LA 70803.

State mathematics standards and deep mathematical structure. Preliminary report.

Curriculum standards for mathematics have been prepared by many states and professional organizations. Assumptions about the structure of what is to be learned and the principles by which content is organized are implicit in these documents. Where do these assumptions come from? To what extent are they consistent with the organizing principles and classification schemes that mathematicians use to describe mathematical knowledge? This talk will examine several specific examples taken from standards for high-school algebra and geometry with an eye to answering the question: *How can an advanced perspective on elementary mathematics help standards documents achieve their intended purpose?* (Received January 30, 2008)