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*Mathematics Curriculum Standards and Deep Mathematical Structure.* Preliminary report.

Curriculum standards define the mathematics that is deemed important by stakeholders in education, but they serve many other purposes as well. They coordinate the work of teachers in different locations and across time, they inform students what is required for state tests, and so forth. Curriculum standards are expected to perform these functions under a wide range of conditions and to be interpreted in a common manner by people with many different backgrounds. Is there a conflict between the robustness that this requires and fidelity to the mathematics itself? In this talk, I will present some examples of mathematics curriculum standards in which coherence and depth appear to have been sacrificed for the sake of robustness, and I will show how coherence and depth can be restored without sacrificing robustness. Mathematics teachers, as interpreters, critics and sometimes authors of standards, need sufficient understanding of deep mathematical structures to be able to reconcile robustness and depth in a similar manner. (Received August 26, 2008)