This paper describes aspects of a 45-hour professional development course in coaching knowledge for practicing K-8 mathematics instructional coaches that address the Common Core State Standards mathematical practices. The professional development course is part of a research project investigating knowledge that contributes to successful K-8 mathematics instructional coaching. A coach can be broadly defined as a person who works collaboratively with a teacher to improve that teacher’s practice and content knowledge, with the ultimate goal of affecting student achievement. In seeking to contribute to a comprehensive understanding of the effectiveness of mathematics instructional coaching, this research project offers two types of professional development courses: one in mathematics content knowledge, and one in coaching knowledge. Because of the widespread adoption of the CCSS that has occurred since the research study began, the project has had the opportunity to scrutinize its definition of standards-based instruction for coaches. This paper describes changes to the curriculum of both courses in response to CCSS standards and assessments. (Received September 15, 2011)