The Learning and Teaching Geometry (LTG) project has created and field-tested, video-based PD materials in the domain of geometry. The LTG PD is aimed at supporting teachers to meet the challenges of teaching geometric similarity in accordance with the new U.S. Common Core State Standards, which require defining and applying similarity from a transformations-based approach. The LTG PD contains 54 hours of PD that are aligned with the definitions and applications of similarity presented in the CCSS. Three pre/post instruments were used to examine impacts of the Foundation Module on teachers’ MKT related to geometric similarity: a content assessment and two sets of embedded assessments. Overall, the LTG PD materials were shown to significantly impact treatment teachers’ MKT as well as their students’ geometry knowledge.