The purpose of this study was to examine mathematics preservice teacher (PST) learning about equity and their development of mathematical knowledge for teaching as they participated in an experimental, practice-based methods course. Activities intended to support PST learning in these areas included: the use of equity-based Lenses in video analysis, live lesson observations, and case study analysis, and a lesson study with a research theme of equity that incorporated a lesson rehearsal. Findings indicated that these activities supported PST noticing and enactment of equitable practices, as well as the development of mathematical knowledge for teaching. I discuss implications for teacher education program designers, course designers, and mathematics teacher educators and conceptualize a hypothetical learning trajectory for PST's learning about equity.