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In this presentation, we attempt to address the question, "What mathematical knowledge is sufficient for supporting K-5 teachers' notion of proof in the context of understanding the density property of the real numbers?" We use examples from a mathematics lesson that occurred during a Rational Numbers course to highlight the different methods that K-5 teachers used to find rational numbers between  $1/11$  and  $1/10$ . As we explore the teachers' methods, we also unpack three mathematical trajectories that the course instructor might have considered as he facilitated a discussion around the teachers' methods. These trajectories were identified after the fact as we considered the mathematical ideas that surfaced as the teachers explained their solution methods. Drawing on these mathematical ideas, we address how the teachers' methods might be characterized as algebraic, geometric, or analytical explanations. As we make connections among the teachers' explanations and the three trajectories, we also illustrate how the course instructor might support the development of teachers' mathematical understandings about what constitutes a more general mathematical argument for the density property of the real numbers. (Received September 18, 2007)