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Student Performance in Measuring Distance with Wavelengths in Various Settings GARY WHITE, The George Washington University — When physics students are asked to measure the distance between two fixed locations using a pre-defined wavelength as a ruler, there is a surprising failure rate, at least partially due to the fact that the "ruler" to be used is not fixed in length (see "Is a Simple Measurement Task a Roadblock to Student Understanding of Wave Phenomena?," by M. Kryjevskaia, M. Stetzer, and P. Heron, The Physics Teacher 51,560, (2103) and references therein). I will show some data from introductory classes (algebra- and calculus-based) that replicate this result, and also show some interesting features when comparing a setting involving slinkies with a setting involving surface waves on water.

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