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It is well documented that even high performing precalculus and calculus students have weak understanding of the function concept. Studies have revealed that the ability to reason covariationally (think about formulas and graphs as representations of the varying magnitude of two quantities as they vary in tandem) is critical for understanding functions and central concepts of calculus. Drawing from this literature we developed curriculum and instructional supports for college algebra. A covariational approach was taken to teach ideas of variable, rate of change, function, function composition, function inverse, and exponential growth. Homework assignments and instruction emphasized meaningful communication about functions as representations of covarying quantities. This intervention is being refined iteratively based on its effectiveness in developing students' covariational reasoning abilities and function understandings. Analysis of data from 5 clinical interviews and classroom video reveal how 8 students developed relative to their covariational reasoning abilities and function understandings over the course of one semester. Early data supports that this approach is having a positive impact on these students' ability to develop and interpret the meaning of formula and graphs. (Received September 20, 2007)