Using the fact that multiple elementary schools feed into the same middle school, I demonstrate that teachers have an impact on the test scores of their students' future peers, which I call a teacher's indirect effect. Although a teacher's indirect effect on any particular individual is small, the aggregate indirect effect is large, since a teacher impacts many more students indirectly than directly. Altogether, ignoring a teacher's indirect effect underestimates true teacher value by roughly 50%. Because this theoretically biases teacher value added estimates, I also develop a new way to estimate teacher value added that accounts for these spillovers. Finally, I demonstrate that the teacher indirect effect is larger than would be expected if results from the peer effect literature were applied to this context, and discuss potential explanations.