Can we teach innovation? Innovation requires whole-brain thinking right-brain thinking for creativity and imagination, and left-brain thinking for planning and execution. Our current approach to science education (and education more generally), focuses on the transfer of information, developing mostly right-brain thinking by stressing copying and reproducing existing ideas rather than generating new ones. I will show how shifting the focus in lectures from delivering information to teamwork and creative thinking greatly improves the learning that takes place in the classroom and promotes independent thinking.