We study the connections between modular forms and multiple zeta values. Multiple zeta values (MZV) generalize the values of the Riemann zeta function on positive integers. There are many algebraic relations on the MZV, some of which are induced by modular forms (Pollack 2009). Brown discovered (2014) that twice-iterated Eisenstein series explain Pollack’s relations, modulo cubic terms. In this paper, we construct the Massey triple product for Eisenstein series and use this to extend Brown’s result to the cubic terms in Pollack’s relations. (Received September 15, 2014)