The notion a trisected 4-manifold, introduced in 2012 by Gay and Kirby, allows one to study a smooth, oriented 4-manifold from the perspective of some of its 2- and 3-dimensional submanifolds. In particular, the smooth structure of a 4-manifold can be encapsulated in three sets of isotopy classes of simple closed curves on a closed surface in what is called a trisection diagram. I will provide a brief background on trisections and trisection diagrams, and then show how to compute the homology and intersection form of a 4-manifold $X$ from the homological information in any trisection diagram for $X$. (Received September 20, 2017)