OpenStax	Learning Outcomes	
8.1	Describe valence bond theory in terms of orbital overlap to form bonds.	
8.2, 8.3	Describe hybridization of atomic orbitals.	
8.2, 8.3		Pair hybridization schemes with the appropriate electron group geometry.
8.2, 8.3		Compare the energy of the hybrid orbitals to the atomic orbitals from which they were formed.
8.2, 8.3		Use the overlap of atomic and hybrid orbitals to explain the bonding in a molecule.
8.2, 8.3		Define sigma and pi bonding according to the location of the electron density with respect to the nuclei of the atoms in the bond.
8.2, 8.3		List the types of orbitals which form a sigma bond.
8.2, 8.3		List the types of orbitals which form a pi bond.
8.2, 8.3		Classify covalent bonds in a molecule or polyatomic ion as sigma or pi.
8.4	Describe molecular orbital theory for homonuclear diatomic elements or ions.	
8.4		Distinguish between bonding and antibonding orbitals.
8.4		Draw the MO diagram for homonuclear diatomics.
8.4		Calculate the bond order based on the MO diagram.
8.4		Relate the bond order to the stability of the bond.
8.4		Determine if a diatomic molecule is diamagnetic or paramagnetic based on the MO diagram.
8.4		Relate the concept of delocalized molecular orbitals to the concept of resonoance.
8.4		Desribe the linear combination of atomic orbitals that form bonding and anti-bonding molecular orbitals.
8.4		Describe how destructive and constructive interference affects molecular orbitals.
8.4		Label the components of the molecular orbital diagram of H_2.