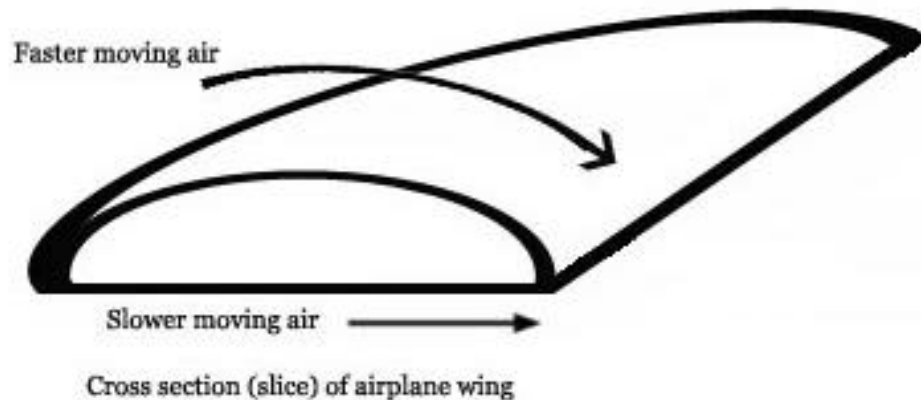


The Causal Story of Lift

Lift is best described by a relational causal story. Lift is due to the difference in air pressure between the top and the bottom of an airplane wing. Airplane wings are curved, as pictured below, so when they move through the air, the air along the top has farther to travel to get to the other side than the air moving across the flat surface on the bottom. Therefore, it must move more quickly. Air exerts pressure on everything, but faster moving air exerts less pressure than slower moving air. This is Bernoulli's principle. Therefore, the cause of lift is the relationship between the speed of the air on the top and bottom of the wing.



If the air pressure on the top and the bottom of the wing are equal, then the air pushes equally on the top and the bottom of the wing and there is no lift. If the air pushes more on the bottom than on the top, it enables the wing to lift up. What do you think would happen if the curved piece were on the bottom of the wing? The outcome depends upon the relationship of the air pressure on the top to the air pressure on the bottom, so you need to look for the cause of the outcome in the relationship between the two.