



FLIGHT APPRENTICE

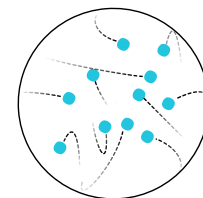
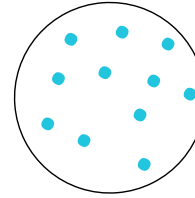
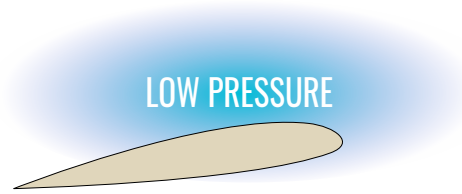
LIFT

A WING WORKS BY CREATING A LOW PRESSURE ON TOP OF THE WING

WHEN WE TALK ABOUT PRESSURE

WE'RE TALKING ABOUT THE FORCE OF AIR MOLECULES BOUNCING AROUND. (NOT THE FORCE OF THEM MOVING FORWARD). THIS IS ALSO TRUE FOR TEMPERATURE.

BECAUSE PRESSURE AND TEMPERATURE ARE TWO WAYS OF LOOKING AT A SIMILAR PRINCIPLE, THEY ARE RELATED. AS PRESSURE DROPS, SO DOES TEMPERATURE.



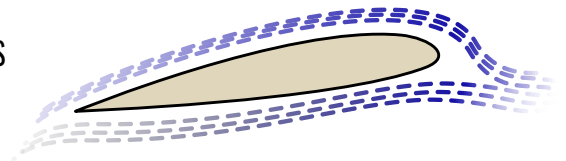
LESS PRESSURE
LESS TEMPERATURE

MORE PRESSURE
MORE TEMPERATURE

PRESSURE & TEMPERATURE
(AKA ENERGY)

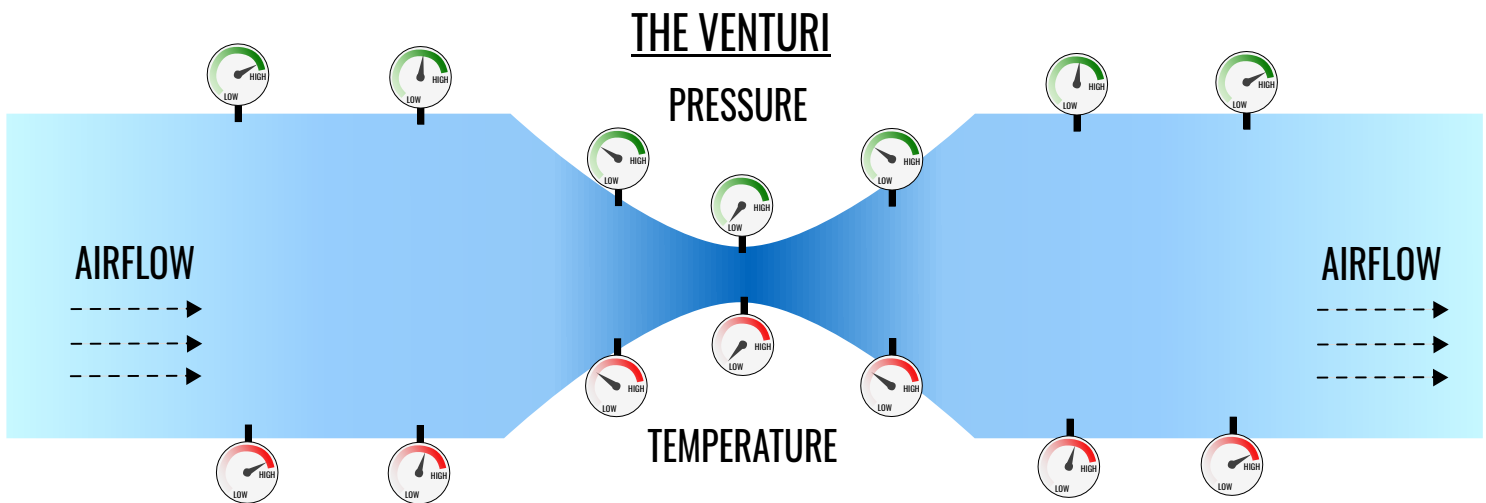
THE SHAPE OF A WING PUSHSES AIR OUT OF THE WAY

THIS CAUSES THE AIR TO SPEED UP. AS THE AIR MOVES FASTER, MORE OF IT'S ENERGY IS SPENT MOVING FORWARD, AND LESS IS SPENT BOUNCING AROUND. IN OTHER WORDS, THE PRESSURE AND THE TEMPERATURE DROP.



THIS EFFECT CAN BE DEMONSTRATED IN A SPECIAL PIPE, CALLED A VENTURI

WHEN THE AIR IS SQUEEZED, IT ACCELERATES SO THAT ALL THE AIR CAN GO THROUGH. THE FASTER THE AIR, THE LOWER THE PRESSURE AND THE LOWER THE TEMPERATURE.



THIS SAME EFFECT CAN BE SEEN:

WHEN YOU PUT YOUR THUMB OVER A HOSE AND THE WATER ACCELERATES

EXHALING WITH A WIDE OPEN MOUTH VS. AS A WHISTLE. YOUR BREATHE MOVES FASTER AND IS COLDER
OPENING YOUR CAR WINDOW DRIVING DOWN THE HIGHWAY. YOUR EARS MIGHT POP FROM LOW PRESSURE
WIND SPEEDING UP AS IT PASSES THROUGH A VALLEY
CARBURETORS USE VENTURIS TO SUCK FUEL INTO THE ENGINE