## **AERODYNAMICS!**



Spoilers on top of the wing are used to add \_\_\_\_ and slow the aircraft

\_\_\_\_ on the wings create additional lift when flying slowly Mach 1 is when you are travelling at the speed of

Aircraft may be optimized for \_\_\_, range, payload, or maneuverability If the nose of the aircraft is too high, the wing may \_\_\_, or lose lift Shock waves can form on the \_\_ of even some subsonic aircraft A \_\_ has no engine and relies on a tow plane and rising air currents

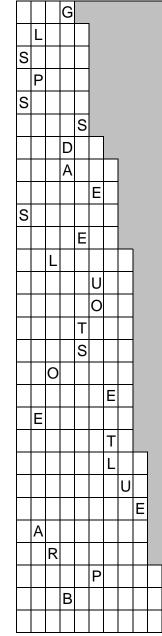
The pilot uses trim controls to \_\_\_\_\_ the aircraft in flight \_\_\_\_\_ are required for sustained flight of heavier-than-air vehicles The airfoil cross-\_\_\_\_ may change along the length of the wing Computers and wind \_\_\_\_ are used to optimize aircraft designs \_\_\_\_\_ are the moving surfaces at the wing tips that roll the aircraft

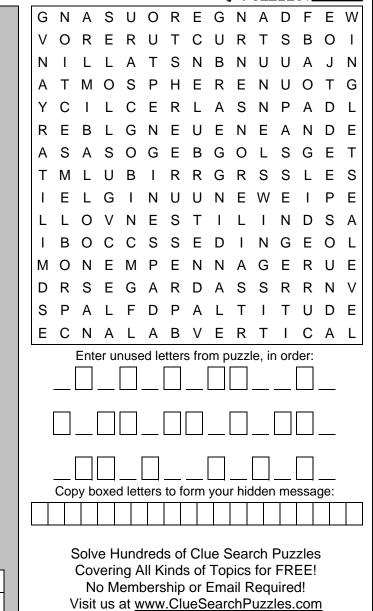
Temperature decreases with increasing \_\_, up to the stratosphere

\_\_\_\_\_ use hot air or light gasses for buoyancy to rise in the air Some \_\_\_\_\_ aircraft can fly above 60,000 feet and above Mach 3 Wings provide lift by creating a \_\_\_\_\_ differential above and below them The buildup of ice on the wings can cause \_\_\_\_ with air flow Most commercial aircraft fly around 35,000 feet above \_\_\_\_\_

- A \_\_\_\_\_ takeoff and landing or VTOL aircraft requires no runway \_\_\_\_\_ are vertical fins at the wing tips to reduce drag
- \_\_\_'s equation describes the pressure of a moving fluid Spins are \_\_\_; not all aircraft can recover from them The tail, or \_\_ has vertical and horizontal surfaces The fuselage is pressurized for \_\_ comfort in high altitude aircraft The spar is the main load-bearing \_\_ of the wing The standard, sea-level \_\_ is used in many calculations The wing must be stiff to avoid damage from flutter in \_\_

is retracted when not in use to reduce drag





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