

- ability**—the knowledge, experience, and skill a team member or a team brings to a task. (p. 286)
- aerial reconnaissance**—looking over battlefields from the sky. (p. 18)
- aerial refueling**—taking on more fuel in flight. (p. 103)
- aerodynamic**—designed with rounded edges to reduce wind drag. (p. 88)
- aeronauts**—people who travel in airships or balloons. (p. 20)
- aileron**—a small flap on the wing for controlling turns. (p. 46)
- airfoil**—a wing’s profile. (p. 34)
- airlift**—the transportation of personnel or material by air. (p. 217)
- air traffic control**—the ground-based system for keeping aircraft safely separated from one another. (p. 181)
- airways**—the routes that planes must follow through the sky. (p. 181)
- all-cargo airlines**—airlines that carry freight, not passengers. (p. 178)
- alloy**—a combination of different metals—or of metal and nonmetal—fused for strength, resistance to corrosion, or other desired qualities. (p. 188)
- Allies**—in World War I, Russia, France, Serbia, and Britain (later joined by the United States and Italy) (p. 63); in World War II, Britain, France, the United States, the Soviet Union, and China. (p. 138)
- altitude**—the height above Earth’s surface. (p. 88)
- amendment**—a revision or change. (p. 111)
- amphibian**—designed to take off and land on either water or land. (p. 88)
- angle of attack**—the angle between the relative wind (the flow of air) and the airfoil. (p. 36)
- annex**—to incorporate territory into an existing political unit such as a country. (p. 129)
- antitrust**—intended to prevent concentrations of power in business. (p. 173)
- apogee**—maximum altitude. (p. 322)
- apprentice**—a person who works with a skilled master to learn by practical experience. (p. 97)
- appropriate**—to set aside for a specific use. (p. 71)
- aquanaut**—a person who conducts work or research under water. (p. 322)
- arms**—weapons. (p. 209)
- arms race**—a competition for military supremacy. (p. 231)
- asteroid**—a rocky and metallic object orbiting the sun. (p. 294)

astronaut—person who flies aboard a spacecraft. (p. 318)

autogiro—an early, helicopter-like vehicle. (p. 97)

autonomous—independent of human control. (p. 354)

autonomy—independence. (p. 134)

auxiliary—functioning as a branch of another military organization. (p. 120)

Axis Powers—in World War II, Germany, Italy, and Japan. (p. 138)

ballistic missile—one that free-falls after a self-powered flight. (p. 251)

barnstormer—a pilot who travels around the country giving exhibits of stunt flying and parachuting. (p. 84)

bid—an offer or a proposal, with a price attached. (p. 41)

biplane—an aircraft with two main supporting surfaces, usually placed one above the other. (p. 23)

blind flight—the act of taking off and landing relying solely on instruments inside the cockpit for guidance. (p. 99)

blitzkrieg—a war conducted with great speed and force. (p. 143)

bombsight—a device that helps determine when to drop a bomb. (p. 128)

boom—the section of a helicopter that connects the tail with the main body. (p. 50)

bracing—support strung diagonally between struts. (p. 32)

canard configuration—another name for an elevator that sits in front of the wings. (p. 33)

casualties—military persons lost through death, wounds, injury, imprisonment, or missing in action. (p. 137)

center of pressure—the focal point of lift. (p. 34)

Central Powers—in World War I, Germany, Austria-Hungary, and Turkey. (p. 63)

circuit—a route that passes through one or more points and then returns to the starting point. (p. 98)

classified—secret. (p. 255)

coalition—an alliance among nations. (p. 257)

cockpit—a space inside the fuselage where the crew sits. (p. 48)

colony—a region under the political control of a distant country. (p. 221)

combined arms—the coordinated efforts of different military branches, such as air and ground. (p. 143)

comet—a small, odd-shaped body with a center of ice, rock, and frozen gas. (p. 294)

components—parts. (p.307)

configurations—setups for specific purposes. (p. 196)

consortium—an association of companies for some specific purpose. (p. 195)

constellation—a group of stars people think of as forming a picture in the sky. (p. 295)

corps—a branch or department of the armed forces having a specialized function. (p. 129)

cosmonaut—a Soviet or Russian astronaut. (p. 326)

cowling—a covering to protect and streamline the engine. (p. 108)

crankshaft—a shaft that turns or is turned by a crank. (p. 49)

cyberspace—a virtual place where information is stored. (p. 356)

deep space—any region beyond the solar system. (p. 361)

dogfight—a battle between fighter planes. (p. 74)

drag—the pull, or slowing effect, of air on an aircraft. (p. 22)

dirigible—a steerable airship. (p. 18)

elevator—a movable, horizontal surface that controls motion up and down. (p. 33)

elliptical—shaped like an oval, not a circle. (p. 290)

embargo—a legal ban on commerce. (p. 165)

enthusiasts—strong supporters or fans. (p. 88)

epicycles—cycles within cycles. (p. 287)

equator—the imaginary circle that divides Earth into northern and southern halves. (p. 98)

escadrille—a small squadron of planes. (p. 65)

escort—accompany. (p. 159)

European Space Agency—a group of 17 countries in Europe that pool their funds and knowledge to explore space. (p. 332)

flight—the act of passing through the air on wings (p. 7); an air force unit that has two or more elements. (p. 143)

flight simulator—a training device that simulates, or imitates, the experience and sensation of flight. (p. 102)

free market—one that operates on the basis of competition and is not controlled by government. (p. 197)

fuselage—the body of an airplane containing the crew and passengers (or cargo). (p. 48)

galaxy—a huge mass of stars, gas, and dust clouds that exists in one area of space. (p. 289)

general aviation—all civil aviation other than flights by scheduled airlines and government agencies. (p. 186)

geocentric—Earth-centered. (p. 286)

geosynchronous—an orbit “in sync” with Earth that takes one day to complete. (p. 290)

glider—a light aircraft without an engine, designed to glide after being towed aloft or launched from a catapult. (p. 10)

grades—ranks. (p. 123)

gravity—an invisible force that pulls all objects toward one another. (p. 289)

guerrilla warfare—a type of fighting in which small bands of fighters hit more-powerful forces by surprise. (p. 233)

gunpowder—an explosive powder made of potassium nitrate, charcoal, and sulfur, used to shoot projectiles from guns. (p. 8)

hacker—someone who uses programming skills to gain illegal access to a computer network or file. (p. 356)

helicopter—an aircraft that gets its lift from spinning blades. (p. 9)

heliocentric—sun-centered. (p. 287)

Holocaust—the mass murder of some six million Jews, mostly in death camps, during World War II. (p. 138)

hypersonic—able to fly at or beyond Mach 5, which is five times the speed of sound. (p. 352)

hypothesis—an unconfirmed explanation that can be tested for truthfulness. (p. 287)

incendiary bombs—bombs designed to start fires. (p. 167)

incentive—a motivating reward. (p. 108)

incompetent—lacking the qualities needed for effective action. (p. 127)

inertia—the tendency for a body at rest to stay at rest until some force acts on it. (p. 308)

infantry—soldiers armed and trained to fight on foot. (p. 141)

insubordination—a refusal to submit to authority. (p. 127)

insurgent—a rebel or guerrilla fighter. (p. 267)

interdiction—the act of cutting or destroying an enemy's advance through firepower. (p. 145)

internal-combustion engine—engine in which the fuel is burned inside, rather than in an external furnace. (p. 19)

international waters—areas of the seas where ships from any nation have the right to travel. (p. 232)

isolationist—term used to describe a nation that does not enter alliances with other countries. (p. 141)

jet lag—fatigue and sleep disturbance as result of crossing time zones on a jet. (p. 196)

jumpsuit—a one-piece outfit. (p. 57)

keel—a structure that extends along the center of a craft from the front to the back. (p. 19)

kite—a light framework covered with paper or cloth, provided with a balancing tail, designed to be flown in the air. (p. 7)

lateral—sideways. (p. 33)

latitude—a line north or south from Earth's equator and parallel to it. (p. 221)

legend—an unverified story handed down from earlier times. (p. 8)

lift—the upward force on an aircraft against gravity. (p. 18)

light-year—the distance light travels in a year. (p. 294)

limited war—a war in which opposing sides try to avoid a worldwide war and the possible use of atomic bombs by fighting with each other outside their own lands and sometimes through troops who aren't their own. (p. 221)

logistics—the aspect of military operations that deals with the procurement, distribution, maintenance, and replacement of materiel and personnel. (p. 134)

Luftwaffe—the German air force. (p. 141)

lunar—relating to the moon. (p. 321)

Mach—the speed of sound. (p. 213)

machine gun—an automatic rifle that uses belt-fed ammunition. (p. 67)

mainstream—the current of most people's life and activities. (p. 100)

Marshall Plan—a strategy for rebuilding the countries of Europe and repelling communism after World War II. (p. 210)

materiel—the equipment and supplies of a military force. (p. 156)

mentor—a trusted coach or guide. (p. 83)

metal fatigue—a slow weakening of strength in metal caused by repeated deformation, vibration, or other stress. (p. 191)

meteor—a meteoroid passing through Earth's atmosphere, leaving a visible trail. (p. 295)

meteorite—a meteoroid that lands on Earth's surface. (p. 295)

meteoroid—a piece of rock or metal that travels in space. (p. 295)

micro-UAV—an aircraft that weighs as little as a few ounces or a few pounds. (p. 355)

milestone—an important event, such as a breakthrough in the advancement of knowledge in a field. (p. 94)

military coup—a sudden takeover of power by the military. (p. 279)

missiles—rocket-propelled vehicles that carry a weapon or warhead. (p. 211)

mission specialist—someone who helps with experiments or the technical aspects of running a spacecraft. (p. 318)

multiengine plane—a plane with more than one engine. (p. 48)

module—a unit of a spacecraft. (p. 326)

monoplane—an airplane with one set of wings. (p. 23)

nanotechnology—the science and technology of building electronic circuits and devices from single atoms and molecules. (p. 355)

nano-UAV—a UAV (unmanned air vehicle) so small that it is invisible to the naked eye. (p. 355)

neutral—not taking sides. (p. 239)

no-fly zone—airspace enemy aircraft aren't allowed to enter. (p. 272)

nuclear deterrence—prevention of war by convincing an enemy that if he attacks, he will be destroyed by nuclear weapons. (p. 208)

nuclear war—war involving the atomic bomb or the hydrogen bomb. (p. 229)

observatory—a building designed to observe the stars. (p. 297)

occupation—invasion, conquest, and control of a nation or territory by foreign armed forces. (p. 141)

orbit—the path of a celestial body as it revolves around another body. (p. 289)

orbital flight—a full revolution around Earth. (p. 320)

ordnance—military supply such as weapons, ammunition, combat vehicles, and equipment. (p. 125)

ornithopter—an aircraft designed to get its support and forward motion from flapping wings. (p. 10)

outrigger—a frame extending laterally beyond the main structure of an aircraft. (p. 113)

overhaul—to go over carefully and make needed repairs. (p. 128)

parachute—a device intended to slow free fall from an aircraft or another high point. (p. 7)

paratrooper—an infantry Soldier who is trained to parachute, often behind enemy lines. (p. 159)

payload—what a rocket carries that is necessary to its mission. (p. 307)

patent—a legal document protecting the rights of an inventor. (p. 23)

perigee—the lowest point of an orbit. (p. 322)

pitch—a movement up or down. (p. 33)

porthole—a small, circular window. (p. 48)

POW—a prisoner of war (p. 228)

precision weapons—guided missiles and bombs. (p. 262)

pressurized cabins—cabins with normal air pressure even at high altitudes. (p. 175)

probe—a scientific satellite that studies a planet or another object in space other than Earth. (p. 331)

propulsion—a driving or propelling force. (p. 193)

pursuit aircraft—fighter plane. (p. 129)

pylons—tall, thin towers. (p. 56)

radial—round. (p. 49)

reciprocating engine—an engine that goes back and forth. (p. 192)

relative wind—the flow of air. (p. 36)

revolve—to circle in an orbit. (p. 289)

retractable—the description of landing gear that folds into the aircraft. (p. 108)

ribs—pieces that give shape to the wings. (p. 38)

rocket—a large, cylindrical object that moves very fast by forcing burning gases out one end of the tube. (p. 8)

rotate—to spin on an axis. (p. 289)

rotors—another name for propellers. (p. 50)

rudder—a movable flap or blade attached to the rear of a craft. (p. 18)

sabotage—the destruction of property by enemy agents in time of war. (p. 137)

satellite—an object that orbits another object in space, such as a planet. (p. 211)

scheduled airlines—airlines that have flights that depart and arrive at set times. (p. 109)

secede—break away. (p. 275)

skids—long, thin runners, like a pair of skis. (p. 39)

solar system—the sun and all the objects in space that circle around it. (p. 286)

solitary confinement—a status in which a prisoner is held in a cell alone and not allowed to talk to anyone. (p. 237)

solo—to fly with no one else on board. (p. 55)

sortie—a flight or an attack by a single combat aircraft. (p. 260)

spars—the main, lengthwise pieces of the wing. (p. 38)

spatial disorientation—a condition in which a person’s sense of direction does not agree with reality. (p. 99)

spectators—people who come to see an event or show. (p. 84)

speculative—not practical or based on facts. (p. 305)

squadron—an air force unit consisting of two or more flights. (p. 143)

stalemate—a situation in which further action is blocked. (p. 71)

stockholder—a person who owns shares of a public company. (p. 172)

strafe—to attack with a machine gun from a low-flying aircraft. (p. 75)

strategic—designed to strike at the sources of an enemy’s military, economic, or political power. (p. 72)

Strategic Triad—the United States’s three-pronged method of delivering nuclear weapons, consisting of land-based intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and long-range bombers. (p. 210)

streamlining—designing an aircraft to reduce resistance to motion through the air. (p. 9)

stressed skin—an outer covering that can stand up to the push-and-pull forces of flight. (p. 108)

strut—a vertical post. (p. 32)

suborbital flight—one that makes less than one revolution around Earth. (p. 320)

subsidy—government money paid to a person or company that serves the public. (p. 108)

sunspots—the relatively cool dark spots that sometimes appear on the surface of the sun. (p. 299)

superpower—a powerful, dominant country that has nuclear weapons. (p. 257)

surveillance—reconnaissance. (p. 354)

tactical—involving military operations that are smaller, closer to base, and of less long-term significance than strategic operations. (p. 145)

tail rotor—a small propeller at the end of a long tail boom. (p. 113)

tandem—two objects with one placed directly behind the other. (p. 48)

tethered flight—flights in which the aircraft is tied to the ground by cables. (p. 113)

theater—a large geographic area in which military operations are coordinated. (p. 140)

38th parallel—a line marking the original boundary between North and South Korea. (p. 221)

thrust—the forward force driving an aircraft. (p. 22)

torque—a twisting force. (p. 50)

totalitarianism—a form of government under which the people are completely under the control of a state authority that oppresses all opposition. (p. 311)

transcontinental—coast-to-coast. (p. 97)

transport—a vehicle—aircraft, ship, or other—that carries people, supplies, tanks, and artillery. (p. 154)

treasonable—involving a violation of allegiance towards one's country. (p. 127)

tri-jet—an aircraft with three engines. (p. 194)

turbine engine—an engine driven by a moving fluid, such as water, steam, or air, that pushes against blades or paddles attached to a central shaft. (p. 192)

twin-float—an airplane with floats for landing on or taking off from a body of water. (p. 106)

U-boats—German submarines. (p. 63)

United Nations—a worldwide organization first formed in 1945 by the victorious Allies to maintain international peace. (p. 209)

virtual—existing in ideas and outside the physical world. (p. 356)

warhead—the explosive tip of a missile. (p. 251)

warp—twist. (p. 32)

weapon of mass destruction—a chemical, biological, or atomic weapon that can kill large numbers of people in one use. (p. 267)

weight—the force that directly opposes lift. (p. 193)

Western Allies—the United States, Britain, and France. (p. 215)

yaw—a sidewise movement. (p. 39)

zeppelin—a German dirigible with a rigid frame used for observation and bombing raids. (p. 73)