MODULE: 1 PAGE 0 Chapter 1 – Flight Aerospace Education	branch of general education concerned with communicating knowledge, skills and attitudes about aerospace activities and the total impact of air and space vehicles upon society knowledge, skills and attitudes about aerospace activities and the total impact of air and space vehicles upon society
MODULE: 1 PAGE 1 Chapter 1 – Flight airport	a place on either land or water where aircraft can land and take off for flight
MODULE: 1 PAGE 1 Chapter 1 – Flight AGL	above ground level
MODULE: 1 PAGE 1 Chapter 1 – Flight aerospace	a combination of aeronautics and space.
MODULE: 1 PAGE 1 Chapter 1 – Flight aviation	the art, science and technology of flight within the atmosphere
MODULE: 1 PAGE 1 Chapter 1 – Flight aviator	a person who operates an aircraft during flight
MODULE: 1 PAGE 1 Chapter 1 – Flight supersonic	faster than the speed of sound
MODULE: 1 PAGE 1 Chapter 1 – Flight subsonic	slower than the speed of sound
MODULE: 1 PAGE 1 Chapter 1 – Flight aero	pertaining to air

MODULE: 1 PAGE 1 Chapter 1 – Flight airplane	an aircraft that is kept aloft by the aerodynamic forces upon its wings and is thrust forward by a propeller, or other means of propulsion, such as a jet or rocket
MODULE: 1 PAGE 1 Chapter 1 – Flight static	standing still, or without motion
MODULE: 1 PAGE 1 Chapter 1 – Flight airfoil	a component, such as a wing, that is specifically designed to produce lift, thrust or directional stability, four main components are leading edge, trailing edge, chord, and camber
MODULE: 1 PAGE 1 Chapter 1 – Flight aircraft	any machine that is capable of flying through the air; ex. Ultra lights, airplanes, gliders, balloons and helicopters
MODULE: 1 PAGE 1 Chapter 1 – Flight air	a mixture of gases that contain approximately 79% nitrogen, 19% oxygen and 2% other gases
MODULE: 1 PAGE 1 Chapter 1 – Flight aerodynamics	relating to the forces of air in motion
MODULE: 1 PAGE 1 Chapter 1 – Flight aeronautics	the science of flight within the atmosphere
MODULE: 1 PAGE 2 Chapter 1 – Flight Icarus	in mythology, flew too close to the sun, melting the wax on his wings thus plunging him to his death.
MODULE: 1 PAGE 2 Chapter 1 – Flight Daedalus and Icarus	in ancient mythology, father and son, the son did not heed the instructions of his father , flew too close to the Sun melting the wax on his wings thus falling to his death

MODULE: 1 PAGE 2 Chapter 1 – Flight Daedalus	mythological story where he warned his son Icarus against flying too close to the Sun
MODULE: 1 PAGE 3 Chapter 1 – Flight Mongolfier	the name of the two French brothers who created the first successful manned hot air balloon in 1783
MODULE: 1 PAGE 4 Chapter 1 – Flight dynamic lift	Newton's lift, takes effect when a bird changes its body angle slightly upward to its flight path
MODULE: 1 PAGE 4 Chapter 1 – Flight induced lift	Bernoullian lift, the pressure difference between the upper and lower areas of a bird's wings.
MODULE: 1 PAGE 4 Chapter 1 – Flight dynamic	forces in motion
MODULE: 1 PAGE 5 Chapter 1 – Flight Daniel Bernoulli	discovered the relationship between pressure and fluids in motion; this became the cornerstone of the theory of airfoil lift.
MODULE: 1 PAGE 5 Chapter 1 – Flight Bernoulli's Principle	fluid, like air in motion, has a constant pressure, however, when fluid is accelerated, the pressure drops; wings are designed to make air flow faster on the top, causing the pressure to drop and the wing moves upward against gravity. With low pressure on top and high pressure underneath, the wing goes up.
MODULE: 1 PAGE 6 Chapter 1 – Flight Newton’s 3rd Law of Motion	for every action, there is an equal and opposite reaction.
MODULE: 1 PAGE 6 Chapter 1 – Flight Newton’s 2nd Law of Motion	a force acting upon a body causes it to accelerate in the direction of the force; acceleration is directly proportional to the force and inversely proportional to the mass of the body being accelerated

MODULE: 1 PAGE 6 Chapter 1 – Flight Newton's 1st Law of Motion	An object at rest will remain at rest unless acted upon by some outside force.
MODULE: 1 PAGE 7 Chapter 1 – Flight trailing edge	the back part of an airfoil
MODULE: 1 PAGE 7 Chapter 1 – Flight coefficient of lift formula	mathematical formula that has 5 components: air density, velocity, wing area, airfoil design, and angle of attack.
MODULE: 1 PAGE 7 Chapter 1 – Flight camber	the curved part of an airfoil that goes from the leading to the trailing edge
MODULE: 1 PAGE 7 Chapter 1 – Flight 4 main components of an airfoil	leading edge, trailing edge, chord, and camber
MODULE: 1 PAGE 7 Chapter 1 – Flight leading edge	the front part of an airfoil
MODULE: 1 PAGE 7 Chapter 1 – Flight relative wind	the flow of air which moves opposite the flight path of an airplane
MODULE: 1 PAGE 8 Chapter 1 – Flight 2 natural forces of flight	drag and gravity
MODULE: 1 PAGE 8 Chapter 1 – Flight 4 forces of flight	drag, gravity, thrust, and lift.

MODULE: 1 PAGE 8 Chapter 1 – Flight 2 artificial forces of flight	thrust and lift.
MODULE: 1 PAGE 8 Chapter 1 – Flight thrust	the force which moves an aircraft forward in flight, in CAP aircraft is provided by a propeller; drag opposes
MODULE: 1 PAGE 8 Chapter 1 – Flight gravity	the natural force which pulls everything toward the center of the Earth; gives an orbit its shape; lift opposes
MODULE: 1 PAGE 8 Chapter 1 – Flight drag	a force which retards the forward movement of an aircraft in flight.
MODULE: 1 PAGE 8 Chapter 1 – Flight chord	an imaginary line drawn through an airfoil from its leading to its trailing edge
MODULE: 1 PAGE 8 Chapter 1 – Flight lift	the upward force, which opposes gravity, that supports the weight of an aircraft.
MODULE: 1 PAGE 9 Chapter 1 – Flight angle of attack	the angle between the chord line and the relative wind.
MODULE: 1 PAGE 9 Chapter 1 – Flight critical angle of attack	the point at which a wing will stall.
MODULE: 1 PAGE 9 Chapter 1 – Flight stall	airflow breakaway from the surface of the wing creates a loss of lift, occurs with an angle of attack of around 17 degrees.

MODULE: 1 PAGE 10 Chapter 1 – Flight changes the angle of attack and increases lift	pulling on the control stick during take off
MODULE: 1 PAGE 11 Chapter 1 – Flight 3 axes of an airplane	longitudinal axes, lateral axes, vertical axes
MODULE: 1 PAGE 11 Chapter 1 – Flight center of gravity	where the 3 (vertical, lateral, and longitudinal) axes of and airplane converge at a point
MODULE: 1 PAGE 11 Chapter 1 – Flight yaw	rotation around the vertical axis.
MODULE: 1 PAGE 11 Chapter 1 – Flight pitch	rotate around the lateral axis.
MODULE: 1 PAGE 11 Chapter 1 – Flight roll	rotation around the longitudinal axis.
MODULE: 1 PAGE 12 Chapter 1 – Flight ailerons	surfaces on the ends of wings, when one moves up the other moves down, rotates the airplane around the longitudinal axis, roll.
MODULE: 1 PAGE 12 Chapter 1 – Flight elevator	pitches the nose up or down in a rotation around the lateral axis.
MODULE: 1 PAGE 12 Chapter 1 – Flight rudder	causes a plane to go left or right around the vertical axis, yaw.

MODULE: 1 PAGE 13 Chapter 1 – Flight flaps	increases lift, allow airplane to fly slower, creates a steeper landing angle, creates drag.
MODULE: 1 PAGE 14 Chapter 1 – Flight lift	the shape of a propeller is used to create this
MODULE: 1 PAGE 1 Chapter 2 – To Fly By the Lifting Power of Rising Air altitude	the height or distance above a reference plane; the most common planes of reference used in aviation are heights above sea level and ground level. If it is above average sea level, it is referred to as “MSL”, or Mean Sea Level, and if it is Above Ground Level, it is referred to as “AGL”.
MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air tow plane	usually a single-engine airplane that will pull a glider from the ground to an altitude where it can be released
MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air aspect ratio	the ratio between the span of the wing and the chord length
MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air thermal	a column of air that moves upward
MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air lift to drag ratio	this ratio is used to measure the gliding efficiency of an aircraft; the angle of attack that results in the least drag will give the maximum lift to drag ratio, the best glide angle and the maximum glide distance.
MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air glide ratio	a mathematical relationship between the distance an aircraft will glide forward to the altitude loss; if an aircraft has a glide ratio of 20 to one, and it is one mile above the Earth, it should glide 20 miles before landing.
MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air density	mass in a given volume

MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air soaring	the art of staying aloft by exploiting the energy of the atmosphere
MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air span	the distance from wingtip to wingtip
MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air wave	as air moves across mountain ranges, it sometimes starts a waving action with strong up and down motions.
MODULE: 1 PAGE 23 Chapter 2 – To Fly By the Lifting Power of Rising Air convection	fluid motion between regions of unequal heating, any heat transfer by vertical motion
MODULE: 1 PAGE 24 Chapter 2 – To Fly By the Lifting Power of Rising Air glider	an aircraft that is towed to a certain altitude and then glides back to Earth due to the pull of gravity.
MODULE: 1 PAGE 24 Chapter 2 – To Fly By the Lifting Power of Rising Air sailplane	an aircraft that soars on the energy of the environment, using every possible method to find lift and then to ride it to a greater height.
MODULE: 1 PAGE 24 Chapter 2 – To Fly By the Lifting Power of Rising Air temperature lapse rate	the average rate at which temperature decreases with an increase in altitude; the average lapse rate is 3.5 degrees F per 1000 feet increase in altitude.
MODULE: 1 PAGE 24 Chapter 2 – To Fly By the Lifting Power of Rising Air stability	the atmosphere's resistance to vertical motion
MODULE: 1 PAGE 26 Chapter 2 – To Fly By the Lifting Power of Rising Air spoilers	devices located on the wings that disrupt the airflow (laminar airflow) over the wing; this disruption causes a loss of lift; they can also serve as air, or dive, brakes

MODULE: 1 PAGE 24 Chapter 3 – Balloons, They Create Their Own Thermals propane burner	the heat source for filling the envelope with hot air
MODULE: 1 PAGE 33 Chapter 3 – Balloons, They Create Their Own Thermals wicker	a form of wooden construction used in the baskets (gondolas)
MODULE: 1 PAGE 34 Chapter 3 – Balloons, They Create Their Own Thermals 1st powered manned flight	two Frenchmen, Pilatre d'Rozier and Marquis Francois d'Arlandes, Paris, November 21, 1783.
MODULE: 1 PAGE 34 Chapter 3 – Balloons, They Create Their Own Thermals balloon	an aircraft that uses lighter-than-air gas for its lift; this craft has no built-in means of horizontal control.
MODULE: 1 PAGE 34 Chapter 3 – Balloons, They Create Their Own Thermals buoyancy	to rise or float on the surface of water or within the atmosphere
MODULE: 1 PAGE 34 Chapter 3 – Balloons, They Create Their Own Thermals envelope	the main body of the balloon usually made of nylon
MODULE: 1 PAGE 34 Chapter 3 – Balloons, They Create Their Own Thermals crown	the top of the hot air balloon's envelope
MODULE: 1 PAGE 35 Chapter 3 – Balloons, They Create Their Own Thermals parachute panel	located in the top of the balloon's envelope that allows it to be deflated; when a larger area of deflation is needed some balloons are equipped with a rip panel
MODULE: 1 PAGE 35 Chapter 3 – Balloons, They Create Their Own Thermals gore	one of several vertical panels that make up the envelope of a balloon.

MODULE: 1 PAGE 36 Chapter 3 – Balloons, They Create Their Own Thermals thermistor	an instrument which measures the temperature within the envelope of a hot air balloon.
MODULE: 1 PAGE 36 Chapter 3 – Balloons, They Create Their Own Thermals hot air balloon instruments	altimeter, vertical velocity indicator, thermistor
MODULE: 1 PAGE 36 Chapter 3 – Balloons, They Create Their Own Thermals propane	a lightweight, low carbon fuel used to power hot air balloon burners
MODULE: 2 PAGE 0 Chapter 1 – Airplane Systems attitude indicator	uses a gyroscope to give the pilot an artificial horizon
MODULE: 2 PAGE 2 Chapter 1 – Airplane Systems cycle	a recurring series of events; the airplane engine has four cycles, intake, compression, power and exhaust.
MODULE: 2 PAGE 2 Chapter 1 – Airplane Systems cylinder	forms a part of the chamber in which the fuel is compressed and burned
MODULE: 2 PAGE 2 Chapter 1 – Airplane Systems powerplant	a term which applies to the airplane's engine and its accessories, such as when the airplane's energy is used as an electrical system
MODULE: 2 PAGE 3 Chapter 1 – Airplane Systems nacelle	streamlined enclosure covering a wing-mounted engine.
MODULE: 2 PAGE 3 Chapter 1 – Airplane Systems exhaust valve	is needed to let the exhaust gases out

MODULE: 2 PAGE 3 Chapter 1 – Airplane Systems intake valve	is needed to let the fuel/air into the cylinder.
MODULE: 2 PAGE 4 Chapter 1 – Airplane Systems intake	in a reciprocating engine, in this stroke is the mixture of air and fuel drawn into the engine
MODULE: 2 PAGE 4 Chapter 1 – Airplane Systems four-stroke operating cycle	intake, compression, ignition/power, exhaust
MODULE: 2 PAGE 4 Chapter 1 – Airplane Systems compression	the act of making a given volume of gas smaller
MODULE: 2 PAGE 4 Chapter 1 – Airplane Systems stroke	in the example of an airplane engine, it is the movement of the piston, within the combustion chamber to its limits
MODULE: 2 PAGE 4 Chapter 1 – Airplane Systems rocket engine	aircraft engine that does not require air.
MODULE: 2 PAGE 4 Chapter 1 – Airplane Systems reciprocating	a type of engine that processes air and fuel by a back and forth movement of its internal parts
MODULE: 2 PAGE 5 Chapter 1 – Airplane Systems fuel	a chemical substance that is used as a source of energy; aircraft fuels include gasoline, kerosene and propane.
MODULE: 2 PAGE 5 Chapter 1 – Airplane Systems stoichiometic	a ratio of fuel to air in which, upon combustion, all of the fuel is burned. In energy terms, it is 15 parts air to 1 part gasoline.

MODULE: 2 PAGE 5 Chapter 1 – Airplane Systems rich mixture	a mixture of gasoline and air in which there is more gasoline and less air than needed for normal combustion
MODULE: 2 PAGE 5 Chapter 1 – Airplane Systems combustion	the chemical process of burning
MODULE: 2 PAGE 5 Chapter 1 – Airplane Systems combustion chamber	an enclosed container in which fuel and air are burned for the production of energy
MODULE: 2 PAGE 5 Chapter 1 – Airplane Systems mixture	occurs when two chemical compounds come together, yet are not chemically combined.
MODULE: 2 PAGE 5 Chapter 1 – Airplane Systems lean mixture	a mixture of gasoline and air in which there is less fuel and more air.
MODULE: 2 PAGE 6 Chapter 1 – Airplane Systems venturi	a restriction in the carburetor which causes air from the outside to accelerate as it passes through the restriction.
MODULE: 2 PAGE 6 Chapter 1 – Airplane Systems carburetor	the volume of fuel and air is controlled by the throttle
MODULE: 2 PAGE 6 Chapter 1 – Airplane Systems meter/metering	In terms of fuel for an engine, this is the process of allowing a precise amount of fuel to pass. An example would be a passageway that allows only so many molecules of gasoline to pass in a given amount of time.
MODULE: 2 PAGE 7 Chapter 1 – Airplane Systems carburetor heat	used to melt ice that might form in the venturi tube.

MODULE: 2 PAGE 8 Chapter 1 – Airplane Systems throttle and mixture	in most CAP training airplanes there are only two engine controls
MODULE: 2 PAGE 8 Chapter 1 – Airplane Systems magneto	provides electrical power to an aircrafts sparkplugs.
MODULE: 2 PAGE 9 Chapter 1 – Airplane Systems alternator	produces alternating current which is then converted to direct current
MODULE: 2 PAGE 9 Chapter 1 – Airplane Systems ammeter	monitors the electrical current.
MODULE: 2 PAGE 11 Chapter 1 – Airplane Systems tachometer	monitors engine speed.
MODULE: 2 PAGE 13 Chapter 1 – Airplane Systems pitot	small, hollow tube, usually located on the wing, used to measure air being rammed into the system
MODULE: 2 PAGE 13 Chapter 1 – Airplane Systems altimeter	measures altitude by measuring air pressure
MODULE: 2 PAGE 13 Chapter 1 – Airplane Systems airspeed indicator	records the difference between still air and air that is being rammed into the system
MODULE: 2 PAGE 13 Chapter 1 – Airplane Systems vertical speed/velocity indicator	displays a rate of change in altitude, tells the pilot the rate of climb or descent

MODULE: 2 PAGE 14 Chapter 1 – Airplane Systems gyroscope	has a small rotating wheel, called a rotor, that is mounted to an axle; the rotor will maintain its position in space while spinning at a very high speed.
MODULE: 2 PAGE 15 Chapter 1 – Airplane Systems inclinometer	a curved, liquid-filled glass tube with a ball inside, used to determine the quality of a turn, shows it whether the airplane is slipping or skidding in a turn.
MODULE: 2 PAGE 19 Chapter 2 – Airports FAA	Federal Aviation Administration
MODULE: 2 PAGE 19 Chapter 2 – Airports noise abatement	a policy set forth by a governing body that controls the noise impact upon a community surrounding an airport
MODULE: 2 PAGE 19 Chapter 2 – Airports taxiway	a passageway between the parking area and the runways of an airport, roads that aircraft us to get to the runway
MODULE: 2 PAGE 19 Chapter 2 – Airports control tower	a structure that houses air traffic controllers; controls the runway by giving permission to aircraft for takeoff or landing
MODULE: 2 PAGE 19 Chapter 2 – Airports ramp	the airport's "parking lot"
MODULE: 2 PAGE 19 Chapter 2 – Airports heading	the direction that an airplane points with respect to true, or magnetic north, the direction that an airplane points with respect to true, or magnetic north, axis.
MODULE: 2 PAGE 19 Chapter 2 – Airports course	the intended path of flight; this is measured in angular degrees from true or magnetic north.

MODULE: 2 PAGE 19 Chapter 2 – Airports ATC	Air Traffic Control
MODULE: 2 PAGE 19 Chapter 2 – Airports traffic pattern	a rectangular path around an airport that facilitates the flow of aircraft
MODULE: 2 PAGE 20 Chapter 2 – Airports uncontrolled airport	an airport without an operating tower
MODULE: 2 PAGE 20 Chapter 2 – Airports typical flight profile	preflight, taxi, takeoff, climb, cruise, descent, approach-to-landing, landing, taxi, stop.
MODULE: 2 PAGE 20 Chapter 2 – Airports controlled airport	an airport with an operating control tower
MODULE: 2 PAGE 21 Chapter 2 – Airports taxi	ground movement of an airplane
MODULE: 2 PAGE 22 Chapter 2 – Airports runway heading	a magnetic number that corresponds with the runway
MODULE: 2 PAGE 22 Chapter 2 – Airports runway	a dedicated pathway for taking off and landing airplanes
MODULE: 2 PAGE 22 Chapter 2 – Airports shortened magnetic headings.	the numbers at the end of runways; the first two digits of a compass direction

MODULE: 2 PAGE 23 Chapter 2 – Airports direction signs	yellow sign that gives the pilot directions.
MODULE: 2 PAGE 23 Chapter 2 – Airports destination signs	yellow sign with black lettering and a distinctive black arrow; gives direction to special locations like military, international, FBOs, etc.
MODULE: 2 PAGE 23 Chapter 2 – Airports location signs	black with yellow inscription and a yellow border, no arrows; identify a taxiway or runway location, boundary of the runway or identify an instrument landing system critical area.
MODULE: 2 PAGE 23 Chapter 2 – Airports mandatory signs	red background with white numbers/letters; denote an entrance to a runway, critical area or prohibited area
MODULE: 2 PAGE 23 Chapter 2 – Airports information signs	yellow sign with black lettering that gives information on such things as areas that cannot be seen by the tower, noise abatement procedures, and applicable radio frequencies.
MODULE: 2 PAGE 24 Chapter 2 – Airports FSS-Flight Service Station	An FAA facility that provides pilots with weather briefings, flight planning, and coordination of search and rescue
MODULE: 2 PAGE 24 Chapter 2 – Airports Runway Distance Remaining signs	large black sign with a white number tells pilots the distance remaining during takeoff or landing.
MODULE: 2 PAGE 25 Chapter 2 – Airports end of runway lighting	set of red lights marking the end of the runway.
MODULE: 2 PAGE 25 Chapter 2 – Airports beacon	a tower-mounted, large rotating light located at an airport. If a civilian airport will flash alternating colors of white and green. If water airport will flash alternating white and yellow. Helicopter airports have a 3 color display of green, yellow, and white. Military airports have a white-white-green display.

MODULE: 2 PAGE 25 Chapter 2 – Airports runway edge lights	lights used to outline the edges of runways at night or during low visibility conditions.
MODULE: 2 PAGE 25 Chapter 2 – Airports VASI	Visual Approach Slope Indicator; most common visual glide path system and gives pilots a visual indication of the proper approach angle during the landing.
MODULE: 2 PAGE 25 Chapter 2 – Airports ALS	Approach Lighting System.
MODULE: 2 PAGE 25 Chapter 2 – Airports REIL	high intensity white strobe lights places on each side of the runway to mark the threshold.
MODULE: 2 PAGE 27 Chapter 2 – Airports wind sock	indicates where the wind is coming from
MODULE: 2 PAGE 27 Chapter 2 – Airports tetrahedron and wind tee	point into the wind
MODULE: 2 PAGE 27 Chapter 2 – Airports taxiway lights	blue lights are the norm
MODULE: 2 PAGE 27 Chapter 2 – Airports tetrahedron	a device that gives an indication of the landing directions at an airport
MODULE: 2 PAGE 27 Chapter 2 – Airports wind direction indicators	several devices that give a pilot an indication of wind direction. Include wind sock, a wind tee, and a tetrahedron.

MODULE: 2 PAGE 27 Chapter 2 – Airports segmented circle	a set of indicators, usually surrounding an airport's wind sock, that provide traffic pattern information to pilot in the air.
MODULE: 2 PAGE 39 Chapter 2 – Airports rotating beacon	on a common VFR-type aviation chart an airport with a star on its symbol indicates:
MODULE: 2 PAGE 39 Chapter 2 – Airports blue symbol	on a common VFR-type aviation chart an airport with an operating control tower is shown with a:
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts scale	the size of an item, or area, on a chart, compared to it in actuality
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts map	a representation of the surface of the Earth (or the sky/space above)
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts line of position (LOP)	the concept that an airplane is located somewhere along a given line
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts projection	a method of transferring a portion of the Earth's surface onto a flat chart; the most widely used in aeronautical charts is the Lambert Conformal Conic
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts legend	an illustration showing the symbols that are used on charts
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts fix	the intersection of two lines of position

MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts nautical mile	a unit of length that is approximately 6076 feet
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts statute mile	a unit of length that is 5,280 feet
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts tick	a small, or abbreviated mark on a line
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts cartography	the art and science of creating charts and maps
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts relief	a term used to describe elevations; a relief is depicted by color tints, contour lines and shading
MODULE: 2 PAGE 33 Chapter 3 – Airport to Airport – Aeronautical Charts WAC	this is the World Aeronautical Chart; it covers a much larger area than the sectional chart; the scale us 1:1,000,000 or approximately 16 statute miles per one inch.
MODULE: 2 PAGE 34 Chapter 3 – Airport to Airport – Aeronautical Charts latitude	a system of lines that run parallel to the equator, also known as parallels
MODULE: 2 PAGE 34 Chapter 3 – Airport to Airport – Aeronautical Charts longitude	a system of lines, known as meridians, between the north and south poles
MODULE: 2 PAGE 34 Chapter 3 – Airport to Airport – Aeronautical Charts Sectional Aeronautical Chart	specifically designed chart for aviation use and visual flight rules; the scale is 1:500,000 or approximately 8 statute miles to one inch.

MODULE: 2 PAGE 34 Chapter 3 – Airport to Airport – Aeronautical Charts chart	a projection, usually on paper, showing a body of land and other features such as water; the chart gives information, usually in the form of symbols, graphs or illustrations.
MODULE: 3 PAGE 1 Chapter 1 – Air Circulation radiation	the method by which the Sun heats the Earth
MODULE: 3 PAGE 2 Chapter 1 – Air Circulation Coriolis Force	deflects a freely moving object to the right in the Northern Hemisphere
MODULE: 3 PAGE 2 Chapter 1 – Air Circulation winter solstice	when the Sun is the farthest south of the equator and the Northern Hemisphere, the day is the shortest, usually on December 21st or 22nd, the Northern Hemisphere is tilted AWAY from the Sun
MODULE: 3 PAGE 2 Chapter 1 – Air Circulation rotation and revolution	in relation to the Sun, the two motions of Earth that effect the amount of heat received from the Sun
MODULE: 3 PAGE 2 Chapter 1 – Air Circulation rotational tilt	causes the length of the days to vary and with the revolution causes seasonal changes
MODULE: 3 PAGE 2 Chapter 1 – Air Circulation summer solstice	when the Sun is at its northernmost point from the equator in the Northern Hemisphere, the day is the longest, usually on June 21st or 22nd, the Northern Hemisphere is tilted TOWARD the Sun
MODULE: 3 PAGE 2 Chapter 1 – Air Circulation revolution	the movement of the Earth revolving around the sun; it takes 365 days, 5 hours and 48 minutes
MODULE: 3 PAGE 2 Chapter 1 – Air Circulation autumnal (fall) equinox	on September 22, the sun's direct rays strike the equator resulting in day and night of equal length

MODULE: 3 PAGE 2 Chapter 1 – Air Circulation rotation	the Earth rotates on its axis at an angle of 23.5°, in a counter clockwise direction, while it revolves around the sun
MODULE: 3 PAGE 2 Chapter 1 – Air Circulation vernal (spring) equinox	on March 21, the sun's direct rays strike the equator resulting in day and night of equal length
MODULE: 3 PAGE 3 Chapter 1 – Air Circulation prevailing westerlies	winds between 30 degrees and 60 degrees latitude, in the Northern Hemisphere are responsible for many of the weather movements across the US and Canada
MODULE: 3 PAGE 3 Chapter 1 – Air Circulation equator	area of Earth receiving most of the sun's heat
MODULE: 3 PAGE 3 Chapter 1 – Air Circulation doldrums	area of calm at the equator where the trade winds meet and produce general upward winds as they are heated, therefore, there are not steady surface winds
MODULE: 3 PAGE 3 Chapter 1 – Air Circulation unequal heating	causes air movement in the atmosphere
MODULE: 3 PAGE 3 Chapter 1 – Air Circulation polar easterlies	formed when the atmosphere over the poles cools, the cold air sinks and spreads out over the surface
MODULE: 3 PAGE 3 Chapter 1 – Air Circulation trade winds	warm, steady breezes that blow almost continuously, caused by air sinking at about 30 degrees north and south latitude and returning toward the equator
MODULE: 3 PAGE 3 Chapter 1 – Air Circulation circulation of the atmosphere	air movement caused by unequal heating

MODULE: 3 PAGE 4 Chapter 1 – Air Circulation jet stream	a strong wind that develops at 30,000-35,000 feet and moves as a winding road across the US, generally from the west to the east
MODULE: 3 PAGE 9 Chapter 2 – Weather Elements wind direction	defined as the direction from which the wind is blowing
MODULE: 3 PAGE 9 Chapter 2 – Weather Elements wind	a body of air in motion, described as having direction and speed
MODULE: 3 PAGE 10 Chapter 2 – Weather Elements Beaufort Scale	a scale for estimating wind speed, on land or sea
MODULE: 3 PAGE 10 Chapter 2 – Weather Elements wind chill	temperature and wind speed are used to explain how cold it feels
MODULE: 3 PAGE 11 Chapter 2 – Weather Elements microburst	a downdraft or downburst of wind, associated with a thunderstorm
MODULE: 3 PAGE 12 Chapter 2 – Weather Elements pressure differences affecting takeoffs and landings	unequal heating gives us temperature differences which in turn causes the atmosphere to circulate
MODULE: 3 PAGE 12 Chapter 2 – Weather Elements heat	the total energy of all molecules within a substance
MODULE: 3 PAGE 12 Chapter 2 – Weather Elements temperature	a measure of molecular motion expressed on a man-made scale

MODULE: 3 PAGE 13 Chapter 2 – Weather Elements barometer	measures atmospheric pressure
MODULE: 3 PAGE 13 Chapter 2 – Weather Elements atmospheric pressure	the weight of all of the atmosphere's gases and molecules on the Earth's surface
MODULE: 3 PAGE 19 Chapter 3 – Moisture and Clouds moisture	the main component for clouds, rain, snow, and fog; exists in 3 states: solid, liquid, and gas
MODULE: 3 PAGE 19 Chapter 3 – Moisture and Clouds water vapor	as a gas, moisture is called
MODULE: 3 PAGE 19 Chapter 3 – Moisture and Clouds clouds and fog	are products of condensation
MODULE: 3 PAGE 19 Chapter 3 – Moisture and Clouds fog	tiny droplets of liquid water in contact with the ground
MODULE: 3 PAGE 19 Chapter 3 – Moisture and Clouds saturation	a parcel of air is holding as much water vapor as it can
MODULE: 3 PAGE 19 Chapter 3 – Moisture and Clouds weather	without moisture in the atmosphere, this could not exist
MODULE: 3 PAGE 19 Chapter 3 – Moisture and Clouds dew point	the temperature at which the air becomes saturated

MODULE: 3 PAGE 19 Chapter 3 – Moisture and Clouds condensation	the process of converting water vapor to liquid
MODULE: 3 PAGE 19 Chapter 3 – Moisture and Clouds relative humidity	amount of water vapor in the air compared to its water vapor capacity at a given temperature
MODULE: 3 PAGE 20 Chapter 3 – Moisture and Clouds nimbostratus	cloud type that can produce rain that can last for hours
MODULE: 3 PAGE 20 Chapter 3 – Moisture and Clouds cirrus	clouds very high in the sky; white, thin, wispy clouds, usually in patches, filaments, hooks or bands, mainly composed of ice crystals
MODULE: 3 PAGE 20 Chapter 3 – Moisture and Clouds cumulus and stratus	clouds found low in the sky and close to the ground
MODULE: 3 PAGE 20 Chapter 3 – Moisture and Clouds stratus	cloud with a very uniform appearance, thin with very little vertical development, sheet-like appearance, gray instead of white
MODULE: 3 PAGE 20 Chapter 3 – Moisture and Clouds cumulus	normally white, billowy, puffy clouds, fair weather clouds
MODULE: 3 PAGE 20 Chapter 3 – Moisture and Clouds cumulus, stratus, and cirrus	3 basic cloud forms
MODULE: 3 PAGE 20 Chapter 3 – Moisture and Clouds cumulomumbus	cloud that produces storms with thunder and lightning

MODULE: 3 PAGE 20 Chapter 3 – Moisture and Clouds clouds	made up of minute droplets of water or tiny ice crystals, or both; classified by their appearance and height
MODULE: 3 PAGE 21 Chapter 3 – Moisture and Clouds turbulence	instability of the air, the motion of the air that affects the smoothness; an unrest or disturbance of air
MODULE: 3 PAGE 21 Chapter 3 – Moisture and Clouds rain	precipitation that falls to the ground as a liquid and stays a liquid
MODULE: 3 PAGE 21 Chapter 3 – Moisture and Clouds precipitation	general term given to various types of condensed water vapor that fall to the Earth's surface such as rain, snow, or ice.
MODULE: 3 PAGE 21 Chapter 3 – Moisture and Clouds freezing rain	precipitation that falls to the ground, but freezes upon contact with various surfaces
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes c	air mass lowercase letter indicating a continental (dry) source region
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes maritime	stands for water (high moisture and wet), air mass originates over water
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes cT	continental tropical
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes cP	continental polar

MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes mP	maritime polar
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes E	air mass capital letter indicates an equatorial temperature
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes mE	maritime equatorial
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes T	air mass capital letter indicates a tropical temperature
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes air masses	are classified by their source region and the nature of the surface in their source region; identified by a two-letter code consisting of a lowercase letter and a capital letter
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes m	air mass lowercase letter indicating a maritime (wet) source region
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes A	air mass capital letter indicates an arctic temperature
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes P	air mass capital letter indicates a polar temperature
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes capital letter	in an air mass classification, refers to temperature (latitude)

MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes continental	stands for land (low moisture and dry), air mass originates over land
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes cA	continental arctic
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes source region	an air mass's place of origin
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes mT	maritime tropical
MODULE: 3 PAGE 27 Chapter 4 – Weather Systems and Changes air mass	huge body of air, usually 1000 miles or more across, with the same temperature and moisture characteristics
MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes stationary front	when two air masses collide and neither is strong enough to force the other out of the way
MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes blue triangles	on weather maps color and shape of cold front symbols
MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes front	a boundary between two air masses, classified as warm, cold, stationary and occluded
MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes alternating red semicircles on one side of line, blue triangle on other side of line	on weather maps color and shape of stationary front symbols

MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes alternating red semicircles and blue triangles on same side of line	weather maps color and shape of occluded front symbols
MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes red semicircles	on weather maps color and shape of warm front symbols
MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes occluded front	involves 3 differing air masses
MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes cold front	occurs when the air moving into the area is colder than the already present warmer air; the heavier, colder air pushes the warmer air up and out of the way
MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes cold occluded front	cold air moves in and collides with warmer air pushing the warm air aloft; then the leading edge of the cold front comes in contact with the trailing edge of the cooler surface air that was below the warm air
MODULE: 3 PAGE 28 Chapter 4 – Weather Systems and Changes warm front	occurs when warm air moves into an area of colder air and they collide; the warm air overrides the cold because it is lighter, the colder air sinks
MODULE: 3 PAGE 29 Chapter 4 – Weather Systems and Changes 3 stages of a thunderstorm	building, mature, and dissipating
MODULE: 3 PAGE 29 Chapter 4 – Weather Systems and Changes lightning	the most spectacular and dangerous part of a thunderstorm
MODULE: 3 PAGE 29 Chapter 4 – Weather Systems and Changes thunderstorm	cumulonimbus cloud possessing thunder and lightning; usually strong winds, rain and sometimes hail

MODULE: 3 PAGE 30 Chapter 4 – Weather Systems and Changes tornado	whirling funnel of air of very low pressure and very strong winds; can suck up anything in its path and must touch the ground to be called a tornado
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes category 2 hurricane	hurricane category with winds between 96-110 mph
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes category 3 hurricane	hurricane category with winds between 111-130 mph
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes 5 categories	number of categories of hurricanes in the Saffir-Simpson Hurricane Damage Potential Scale
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes category 4 hurricane	hurricane category with winds between 131-155 mph
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes category 1 hurricane	hurricane category with winds between 75-95 mph
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes category 5 hurricane	hurricane category with winds between 155+ mph
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes tropical storm	highest category of a tropical cyclone BEFORE becoming a hurricane, winds between 39 and 74 mph.
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes tropical depression	second lowest category of a tropical cyclone

MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes tropical disturbance	lowest category of a tropical cyclone
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes Fujita Wind Damage Scale	explains the categories of wind speed and expected damage
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes Saffir-Simpson Hurricane Damage Potential Scale	scale presenting the categories of a hurricane
MODULE: 3 PAGE 31 Chapter 4 – Weather Systems and Changes hurricane	a tropical cyclone of low pressure and very strong winds; usually heavy rain with possible thunderstorms and tornadoes
MODULE: 3 PAGE 32 Chapter 4 – Weather Systems and Changes eye	the calm center of a hurricane
MODULE: 4 PAGE 1 Chapter 1 – History of Rockets Hero	developed first rocket engine
MODULE: 4 PAGE 2 Chapter 1 – History of Rockets Roger Bacon	increased the range of rockets
MODULE: 4 PAGE 2 Chapter 1 – History of Rockets Isaac Newton	laid scientific foundation for modern rocketry with his laws of motion
MODULE: 4 PAGE 2 Chapter 1 – History of Rockets William Hale	developed spin stabilization for rockets

MODULE: 4 PAGE 2 Chapter 1 – History of Rockets William Congreve	designed rockets for military use, added flight stabilizing guide sticks to rockets; built the first viable launching pad; standardized the composition of gunpowder explosives
MODULE: 4 PAGE 2 Chapter 1 – History of Rockets Jean Froissart	improved the accuracy of rockets by launching them through tubes
MODULE: 4 PAGE 3 Chapter 1 – History of Rockets Konstantin Tsiolkovsky	in 1903, proposed the use of rockets for space exploration
MODULE: 4 PAGE 3 Chapter 1 – History of Rockets Robert Goddard	experimented with solid and liquid propellant rockets; known as the “Father of Modern Rocketry”
MODULE: 4 PAGE 4 Chapter 1 – History of Rockets Hermann Oberth	space pioneer; wrote a book about rocket travel into outer space
MODULE: 4 PAGE 4 Chapter 1 – History of Rockets Explorer I	launched by US on Jan 31, 1958, the first US satellite, , discovered the Van Allen radiation belts
MODULE: 4 PAGE 4 Chapter 1 – History of Rockets Sergei Korolev	the leading Soviet rocket scientist
MODULE: 4 PAGE 4 Chapter 1 – History of Rockets Wernher von Braun	director of the V-2 rocket project
MODULE: 4 PAGE 5 Chapter 1 – History of Rockets first American to orbit the Earth, Project Mercury	John Glenn

MODULE: 4 PAGE 5 Chapter 1 – History of Rockets Russian; the first man in space	Yuri Gagarin
MODULE: 4 PAGE 5 Chapter 1 – History of Rockets first American in space, Project Mercury	Alan Shepard
MODULE: 4 PAGE 6 Chapter 1 – History of Rockets Skylab	first US space station, launched in May 1973
MODULE: 4 PAGE 7 Chapter 1 – History of Rockets Space Shuttle	a United States space transportation system for traveling to space and back to Earth
MODULE: 4 PAGE 14 Chapter 2 – Rocket Principles acceleration	the rate of change in velocity with respect to time
MODULE: 4 PAGE 14 Chapter 2 – Rocket Principles Newton's First Law of Motion	a body at rest remains at rest and a body in motion tends to stay in motion at a constant velocity unless acted on by an outside force
MODULE: 4 PAGE 14 Chapter 2 – Rocket Principles Newton's Third Law of Motion	to every action, there is an equal and opposite reaction
MODULE: 4 PAGE 14 Chapter 2 – Rocket Principles Newton's Second Law of Motion	the rate of change in the momentum of a body is proportional to the force acting upon the body and is in the direction of the force
MODULE: 4 PAGE 14 Chapter 2 – Rocket Principles inertia	the tendency of an object at rest to stay at rest and an object in motion to stay in motion

MODULE: 4 PAGE 14 Chapter 3 – Rocket Systems and Controls rocket thrust	the amount of push used to get the rocket traveling upwards
MODULE: 4 PAGE 23 Chapter 3 – Rocket Systems and Controls airframe	the shape of the rocket
MODULE: 4 PAGE 23 Chapter 3 – Rocket Systems and Controls payload	what the rocket is carrying
MODULE: 4 PAGE 23 Chapter 3 – Rocket Systems and Controls four major systems or rockets	airframe, guidance, control, and propulsion
MODULE: 4 PAGE 23 Chapter 3 – Rocket Systems and Controls control system	steers the rocket and keeps it stable
MODULE: 4 PAGE 23 Chapter 3 – Rocket Systems and Controls guidance system	gets the rocket to its destination; the brain of the rocket
MODULE: 5 PAGE 2 Chapter 1 – Space space	region beyond the Earth's atmosphere where there is very little molecular activity
MODULE: 5 PAGE 2 Chapter 1 – Space universe	everything is part of the universe; stars, planets, galaxies, animals, plants and humans
MODULE: 5 PAGE 2 Chapter 1 – Space microgravity	small gravity levels or low gravity

MODULE: 5 PAGE 3 Chapter 1 – Space interplanetary space	measured from the center of the Sun to the orbit of its outermost planet
MODULE: 5 PAGE 3 Chapter 1 – Space interstellar space	the distance from one solar system to another
MODULE: 5 PAGE 3 Chapter 1 – Space cislunar space	the space between the Earth and the Moon
MODULE: 5 PAGE 4 Chapter 1 – Space nebulae	giant cloud of dust and gas
MODULE: 5 PAGE 4 Chapter 1 – Space galaxy	an enormous collection of stars arranged in a particular shape
MODULE: 5 PAGE 5 Chapter 1 – Space constellation	a grouping of stars, named after mythical figures and animals
MODULE: 5 PAGE 5 Chapter 1 – Space black hole	a region in space where no radiation is emitted
MODULE: 5 PAGE 5 Chapter 1 – Space pulsar	pulsating star that flashes electromagnetic emissions in a set pattern
MODULE: 5 PAGE 5 Chapter 1 – Space star	a body of hot gases

MODULE: 5 PAGE 6 Chapter 1 – Space Van Allen belts	radiation belts filled with charged particles
MODULE: 5 PAGE 14 Chapter 2 – Solar System 93 million miles	distance from Sun to Earth
MODULE: 5 PAGE 14 Chapter 2 – Solar System Sun	the most important element in our solar system, internal temperatures reach 15,000,000 degrees C
MODULE: 5 PAGE 14 Chapter 2 – Solar System solar system	the sun and the bodies that orbit around it
MODULE: 5 PAGE 15 Chapter 2 – Solar System Moon	situated in an elliptical orbit around the earth, about 1/4 the size of Earth, consists mainly of solid rock covered by dust
MODULE: 5 PAGE 15 Chapter 2 – Solar System solar flares	short-lived high energy discharges that can harm satellites, ground systems, spacecraft and astronauts
MODULE: 5 PAGE 15 Chapter 2 – Solar System solar prominences	larger energy discharges that can be thousands of miles high and last for months
MODULE: 5 PAGE 15 Chapter 2 – Solar System photosphere	The very thin shell of the Sun's outer layer, the part that gives off light.
MODULE: 5 PAGE 16 Chapter 2 – Solar System full moon	when the Moon is on the opposite side of the Earth from the Sun

MODULE: 5 PAGE 16 Chapter 2 – Solar System new Moon	when the Moon is on the side of the Earth nearer the Sun
MODULE: 5 PAGE 17 Chapter 2 – Solar System Mercury	the closest planet to the Sun, but the most difficult to see, second smallest of the 9 planets, revolves around the Sun in 88 days, with a rotation of 59 Earth days
MODULE: 5 PAGE 17 Chapter 2 – Solar System 9 planets	number of known planets in our solar system
MODULE: 5 PAGE 17 Chapter 2 – Solar System 1 Moon day	27 Earth days
MODULE: 5 PAGE 18 Chapter 2 – Solar System our atmosphere	acts like a protective blanket absorbing some of the Sun's radiation
MODULE: 5 PAGE 18 Chapter 2 – Solar System Mariner 10	made a flyby of Mercury in 1974
MODULE: 5 PAGE 18 Chapter 2 – Solar System Venera 9 and Venera 10	USSR spacecraft which visited Venus
MODULE: 5 PAGE 18 Chapter 2 – Solar System Venus	second planet from the Sun, closest planet to Earth in both size and distance, revolves around the Sun in 225 Earth days, hottest planet in the solar system, covered with clouds made of water vapor and sulfuric acid, only know planet to rotate in a clockwise manner, referred to as the Evening Star
MODULE: 5 PAGE 18 Chapter 2 – Solar System Earth	only planet we know for sure sustains life

MODULE: 5 PAGE 18 Chapter 2 – Solar System Mariner 2, Mariner 5, and Mariner 10	Mariner spacecraft which visited Venus
MODULE: 5 PAGE 18 Chapter 2 – Solar System Pioneer 1 and Pioneer 2	Pioneer spacecraft which visited Venus
MODULE: 5 PAGE 19 Chapter 2 – Solar System Mars	4th planet from the Sun, reddish in color because of a high iron content, atmosphere mainly composed of carbon dioxide, about half the gravity of Earth, revolves around the sun in about 687 Earth days. Red Planet
MODULE: 5 PAGE 19 Chapter 2 – Solar System 365 Earth days	one Earth revolution around the Sun
MODULE: 5 PAGE 19 Chapter 2 – Solar System Mariner	made flybys of Mars in the late 60s; flew by Venus and Mercury giving us pictures of Venus' clouds and Mercury's cratered surface
MODULE: 5 PAGE 19 Chapter 2 – Solar System Sojourner Truth	the rover to the Mars Pathfinder, explored the surface of Mars
MODULE: 5 PAGE 19 Chapter 2 – Solar System Mars Pathfinder	landed on Mars in July 1997
MODULE: 5 PAGE 19 Chapter 2 – Solar System Viking 1 and Viking 2	spacecraft that touched down on Mars in the mid 70s
MODULE: 5 PAGE 20 Chapter 2 – Solar System Saturn	has easily seen rings made of icy chunks of rock, rotates very 10 Earth hours, takes 29 Earth years to revolve around the Sun, about 900 million miles from the Sun

MODULE: 5 PAGE 20 Chapter 2 – Solar System Giant Red Spot	a giant hurricane storm on Jupiter that is 30,000 miles long and 10,000 miles wide that has existed for over 359 years
MODULE: 5 PAGE 20 Chapter 2 – Solar System Io	moon of Jupiter that has volcanic activity
MODULE: 5 PAGE 20 Chapter 2 – Solar System has 16 moons	known number of Jupiter moons
MODULE: 5 PAGE 20 Chapter 2 – Solar System Jupiter	largest planet in the solar system, 3 times the mass of all other planets put together, rotates every 10 hours which creates high winds and giant storms, a gas giant, revolves around the Sun every 11 Earth years
MODULE: 5 PAGE 21 Chapter 2 – Solar System Uranus	3rd largest planet in the solar system, a gas giant, has a bluish green color, about 1.7 billion miles from the Sun, takes 84 Earth years to revolve around the Sun, rotates every 18 Earth hours, has a 60 degree tilt on its axis, has 11 very narrow black rings
MODULE: 5 PAGE 21 Chapter 2 – Solar System has 15 moons	number of Uranus moons
MODULE: 5 PAGE 21 Chapter 2 – Solar System Titan	moon of Saturn that has and atmosphere of nitrogen and methane, only moon in our solar system with its own atmosphere
MODULE: 5 PAGE 21 Chapter 2 – Solar System has 18 moon	number of known moons of Saturn
MODULE: 5 PAGE 22 Chapter 2 – Solar System Pluto	the least known plant, rotates about 6.5 Earth days, about 4 billion miles from the Sun, has a very elongated orbit and sometimes is closer to the Sun than Neptune

MODULE: 5 PAGE 22 Chapter 2 – Solar System Neptune	outermost of the gas giants, 4th largest planet in the solar system, about 3 billion miles from the Sun, revolves around the Sun every 165 Earth years, rotates every 19 Earth hours, has a bluish color, the most windy planet in the solar system, has a storm called the Great Dark Spot about the size of Earth, has a very narrow faint ring system, windiest planet in the solar system
MODULE: 5 PAGE 22 Chapter 2 – Solar System Triton	moon of Neptune which Voyager 2 showed had active geyser-like eruptions spewing out invisible nitrogen gas and dark dust particles.
MODULE: 5 PAGE 22 Chapter 2 – Solar System Charon	moon of Pluto
MODULE: 5 PAGE 22 Chapter 2 – Solar System has 8 moons	number of known moons of Neptune
MODULE: 5 PAGE 23 Chapter 2 – Solar System Kleopatra	a metallic, dog bone-shaped asteroid the size of New Jersey
MODULE: 5 PAGE 23 Chapter 2 – Solar System asteroid	a small rocky body orbiting the sun; usually found in the asteroid belt, range in size from dust particles to some that are a few hundred miles across
MODULE: 5 PAGE 23 Chapter 2 – Solar System comet	a small icy body orbiting the sun, growing in size and brightness as they approach the Sun, creating a tail that can extend for millions of miles
MODULE: 5 PAGE 23 Chapter 2 – Solar System NEAR Near Earth Asteroid Rendezvous	made a high-speed, close encounter with the asteroid Mathilde in 1997, then went on to encounter the asteroid Eros

MODULE: 5 PAGE 23 Chapter 2 – Solar System asteroid belt	orbit between Mars and Jupiter where most asteroids are found
MODULE: 5 PAGE 23 Chapter 2 – Solar System Gaspra	in October 1991 was visited by the Galileo spacecraft and became the first asteroid to have high-resolution images taken of it
MODULE: 5 PAGE 23 Chapter 2 – Solar System Halley's Comet	comet that appears every 76 years, last appearance was in 1996
MODULE: 5 PAGE 24 Chapter 2 – Solar System meteoroid	clump of dust or rock orbiting the sun
MODULE: 5 PAGE 24 Chapter 2 – Solar System meteor	a small streak of light; when a meteoroid enters the Earth's atmosphere it becomes a meteor
MODULE: 5 PAGE 24 Chapter 2 – Solar System meteorite	a meteor large enough to penetrate our atmosphere and actually hit the surface of the Earth
MODULE: 5 PAGE 115 Chapter 2 – Solar System sunspots	darker, cooler areas of the sun, from which solar flares and prominences occur
MODULE: 6 PAGE 1 Chapter 1 – Unmanned Spacecraft COMSAT	communications satellites
MODULE: 6 PAGE 1 Chapter 1 – Unmanned Spacecraft Sputnik	first artificial satellite, launched in 1957 by Soviet Union

MODULE: 6 PAGE 1 Chapter 1 – Unmanned Spacecraft Telstar I	in 1962 became the first commercial satellite
MODULE: 6 PAGE 1 Chapter 1 – Unmanned Spacecraft satellite	natural or artificial object in space that orbits the Earth
MODULE: 6 PAGE 2 Chapter 1 – Unmanned Spacecraft DSN Deep Space Network	consists of 3 deep space communications complexes, providing continuous communications for planetary spacecraft probing into deep space
MODULE: 6 PAGE 2 Chapter 1 – Unmanned Spacecraft TDRSS Tracking and Data Relay Satellite System	a COMSAT satellite, relays data and communications between the satellites and Earth
MODULE: 6 PAGE 2 Chapter 1 – Unmanned Spacecraft INTELSAT	International Telecommunications Satellite Organization
MODULE: 6 PAGE 3 Chapter 1 – Unmanned Spacecraft Tiros I	first weather satellite, launched in 1960
MODULE: 6 PAGE 3 Chapter 1 – Unmanned Spacecraft LANDSAT	satellites that locate natural resources and monitor conditions on the Earth's surface
MODULE: 6 PAGE 3 Chapter 1 – Unmanned Spacecraft TRANSIT	the first navigational satellite was developed to provide Polaris missile submarines with the ability to fix accurate positions
MODULE: 6 PAGE 3 Chapter 1 – Unmanned Spacecraft GOES	Geostationary Operational Environmental Satellites

MODULE: 6 PAGE 3 Chapter 1 – Unmanned Spacecraft NAVSTAR	navigation satellites
MODULE: 6 PAGE 3 Chapter 1 – Unmanned Spacecraft GPS Global Positioning Position	a civilian and military navigational satellite system that offers a precise positioning service
MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft Voyager 1 and 2	in the late 1970s encountered Jupiter and Saturn, providing greatly improved pictures and data
MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft Ranger	first probes to take pictures of the Moon in preparation for the Apollo landings
MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft satellites as a system	refers to a satellite's related parts in a set or a system
MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft Explorer	first and oldest US satellite series
MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft OSO Orbiting Solar Observatory	provided continuous solar observations for most of the 1960s and 1970s, furthered our studies of x-rays, gamma rays and ultraviolet rays
MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft Explorer 6	in 1959 gave us our first photograph of Earth from space
MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft Pioneer	in the 1970s, these probes gave us close-up pictures of Jupiter and Saturn

MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft people	in a satellite as a system this part involves the design, manufacture, launch, operation of any satellite and the customers.
MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft Viking	in 1975, this series explored the environment of Mars, analyzing and photographing Mars' surface with the primary emphasis on the search for life
MODULE: 6 PAGE 4 Chapter 1 – Unmanned Spacecraft space probes	satellites or spacecraft that either fly by, orbit or land on a celestial body, other than Earth
MODULE: 6 PAGE 5 Chapter 1 – Unmanned Spacecraft over a billion	estimated number of tiny pieces of space junk is orbiting Earth, posing a potential hazard to other satellites and astronauts
MODULE: 6 PAGE 6 Chapter 1 – Unmanned Spacecraft structure of a satellite	has a frame and windows, insulated to control temperature, must be sturdy enough to survive the launch but light enough to get into orbit, supplies the support for other sub-systems
MODULE: 6 PAGE 6 Chapter 1 – Unmanned Spacecraft mission of a satellite	defines the satellite's purpose, what services will be provided, why the satellite is being built, and how it should be designed
MODULE: 6 PAGE 6 Chapter 1 – Unmanned Spacecraft sub-systems	refer to the support that is given to the spacecraft in space, including the structure, propulsion system, attitude control, power system, thermal control, and a command and control system
MODULE: 6 PAGE 6 Chapter 1 – Unmanned Spacecraft insulation and heaters	most common way to control temperature on a satellite
MODULE: 6 PAGE 6 Chapter 1 – Unmanned Spacecraft solar power from solar cells	main source of electricity while the satellite in in orbit

MODULE: 6 PAGE 6 Chapter 1 – Unmanned Spacecraft electrical power	essential power ingredient of a satellite
MODULE: 6 PAGE 6 Chapter 1 – Unmanned Spacecraft attitude control system	used to make minor corrections in direction, steers and controls where the satellite is pointed
MODULE: 6 PAGE 6 Chapter 1 – Unmanned Spacecraft propulsion	the sub-system that boosts the satellite into orbit
MODULE: 6 PAGE 6 Chapter 1 – Unmanned Spacecraft payload of a satellite	refers to the sensors and instruments used to perform the mission
MODULE: 6 PAGE 7 Chapter 1 – Unmanned Spacecraft orbit	the movement or path a satellite takes around a celestial body
MODULE: 6 PAGE 7 Chapter 1 – Unmanned Spacecraft launch	the part of the system which gets the satellite into orbit
MODULE: 6 PAGE 7 Chapter 1 – Unmanned Spacecraft mission requirements	determine the orbit needed to accomplish the mission
MODULE: 6 PAGE 7 Chapter 1 – Unmanned Spacecraft communications system	the command and control function of a satellite
MODULE: 6 PAGE 7 Chapter 1 – Unmanned Spacecraft telemetry	the information that tells the controller how the satellite is functioning

MODULE: 6 PAGE 7 Chapter 1 – Unmanned Spacecraft celestial bodies	planets, stars, comets, and any other large objects in space
MODULE: 6 PAGE 7 Chapter 1 – Unmanned Spacecraft geocentric	theory which places the Earth at the center of the universe
MODULE: 6 PAGE 7 Chapter 1 – Unmanned Spacecraft Ptolemy	gave us the first theory of the motion of celestial bodies
MODULE: 6 PAGE 8 Chapter 1 – Unmanned Spacecraft perigee	the lowest point of an orbit
MODULE: 6 PAGE 8 Chapter 1 – Unmanned Spacecraft Copernicus	in 1400s developed the heliocentric theory, placing the Sun at the center of the universe
MODULE: 6 PAGE 8 Chapter 1 – Unmanned Spacecraft heliocentric	theory which places the Sun as the center of the universe
MODULE: 6 PAGE 8 Chapter 1 – Unmanned Spacecraft Kepler	studied the motion and measured the movement of planets, in 1600s created rules of motion
MODULE: 6 PAGE 8 Chapter 1 – Unmanned Spacecraft Kepler's first law	the orbit of each planet is and ellipse, with the Sun at the focus
MODULE: 6 PAGE 8 Chapter 1 – Unmanned Spacecraft Newton's Law of Universal Gravitation	law which explains the gravitational attraction or pull between bodies in the universe

MODULE: 6 PAGE 8 Chapter 1 – Unmanned Spacecraft apogee	the highest point of an orbit
MODULE: 6 PAGE 13 Chapter 2 – Manned Spacecraft Project Mercury	US' first manned spaceflight project, its mission was to find out if a human could survive space travel, and what, if any, effects would space travel have on the human body, lasted 2 years and consisted of 6 manned flights
MODULE: 6 PAGE 13 Chapter 2 – Manned Spacecraft Alan Shepard	on May 5, 1961 became the first American in space
MODULE: 6 PAGE 14 Chapter 2 – Manned Spacecraft Project Gemini	first two-man capsule, first American walk in space, first rendezvous and docking of a manned spacecraft with another satellite, gathered additional information about the effect of spacecraft on the human body
MODULE: 6 PAGE 14 Chapter 2 – Manned Spacecraft Ed White	made the first American space walk
MODULE: 6 PAGE 14 Chapter 2 – Manned Spacecraft Gordon Cooper	flew the last Mercury flight which lasted 34 hours and 20 minutes, orbiting Earth 22 times
MODULE: 6 PAGE 14 Chapter 2 – Manned Spacecraft John Glenn	became the first American to orbit the Earth, Project Mercury
MODULE: 6 PAGE 15 Chapter 2 – Manned Spacecraft Apollo 13	Apollo mission that had to be aborted due to an explosion in the spacecraft, but made a successful emergency landing
MODULE: 6 PAGE 15 Chapter 2 – Manned Spacecraft Edwin "Buzz" Aldrin	second man to step foot on the Moon, 20 July 1969

MODULE: 6 PAGE 15 Chapter 2 – Manned Spacecraft Neil Armstrong	first man to step foot on the Moon, 20 July 1969
MODULE: 6 PAGE 15 Chapter 2 – Manned Spacecraft Apollo 11	first Apollo flight to land a man on the Moon, 20 July 1969, used a Saturn V launch vehicle
MODULE: 6 PAGE 15 Chapter 2 – Manned Spacecraft Project Apollo	mission was to put a man on the Moon
MODULE: 6 PAGE 16 Chapter 2 – Manned Spacecraft Apollo-Soyuz	manned spaceflight project linking American and Soviet spacecraft in space, July 1975
MODULE: 6 PAGE 16 Chapter 2 – Manned Spacecraft Project Skylab	US' manned spaceflight project that put a laboratory into space, launched in May 1973, the main lesson learned was that people could live and work in space for at least 3 months with no ill effects
MODULE: 6 PAGE 17 Chapter 2 – Manned Spacecraft orbiter	part of the Space Shuttle that carries the crew and the payload
MODULE: 6 PAGE 17 Chapter 2 – Manned Spacecraft STS Space Transportation System	the Space Shuttle
MODULE: 6 PAGE 17 Chapter 2 – Manned Spacecraft 3 main parts of the Space Shuttle	orbiter, solid rocket booster, external tanks
MODULE: 6 PAGE 17 Chapter 2 – Manned Spacecraft Enterprise	first Space Shuttle, only used for flight tests, never went into space

MODULE: 6 PAGE 18 Chapter 2 – Manned Spacecraft Sally Ride	first American woman in space
MODULE: 6 PAGE 18 Chapter 2 – Manned Spacecraft Challenger	on Jan 28, 1986, exploded less than 2 minutes after takeoff.
MODULE: 6 PAGE 18 Chapter 2 – Manned Spacecraft Hubble Space Telescope	launched in April 1990, provided images of space clear of atmospheric disturbances
MODULE: 6 PAGE 19 Chapter 2 – Manned Spacecraft Yuri Gagarin	first man in space, launched by the Soviet Union in April 1961
MODULE: 6 PAGE 19 Chapter 2 – Manned Spacecraft Valentina Tereshkova	first woman in space, launched by Soviet Union in June 1963
MODULE: 6 PAGE 19 Chapter 2 – Manned Spacecraft Aleksei Leonov	in March 1965, first man to walk in space, spending 20 minutes outside his spacecraft
MODULE: 6 PAGE 19 Chapter 2 – Manned Spacecraft Salyut 1	first space station launched by Soviet Union in April 1971
MODULE: 6 PAGE 27 Chapter 3 – Living and Working in Space Mir	Russia's space station of the 1980s and 1990s, launched in February 1986, housed Soviet and American astronauts
MODULE: 6 PAGE 27 Chapter 3 – Living and Working in Space Salyut	Russia's first space station, first launched in April 1971

MODULE: 6 PAGE 27 Chapter 3 – Living and Working in Space Salyut 7	Soviet astronauts stayed aboard this space station for 234 days
MODULE: 6 PAGE 28 Chapter 3 – Living and Working in Space Spacelab	European Space Agency's first space station
MODULE: 6 PAGE 29 Chapter 3 – Living and Working in Space EVA Extravehicular Activities	general term used for going outside the spacecraft
MODULE: 6 PAGE 30 Chapter 3 – Living and Working in Space 1930s	space suit design began with high-altitude flyers
MODULE: 6 PAGE 31 Chapter 3 – Living and Working in Space Gemini 7	first spacecraft in which space suits were taken off
MODULE: 6 PAGE 31 Chapter 3 – Living and Working in Space MMU Manned Maneuvering Unit	first used in 1984, fit on astronaut's back and allowed him or her to move around without being tied to the spacecraft
MODULE: 6 PAGE 32 Chapter 3 – Living and Working in Space Space Station Alpha	future space station, a joint venture with US, Europe, Canada, Japan and Russia