Glossary

acceleration	a change in the speed or direction of a moving object
actuator	a mechanism that puts something into automatic action
adhesives	materials used for combining materials: glue, tape, hot glue
adjust	to change so as to match or fit; this is a part of a closed loop system
advances	to aid in the growth or progress; every technological innovation can lead to more advances of technology
aerodynamics	the study of the effects of moving air or other fluids on a object
aesthetics	how something looks from an artistic point of view; aesthetics is a design criteria
agricultural age	during this age, life centered around farms and goods were hand crafted.
alignment	arrangement or position
alternative	another word for different, other
amperage	measure of electron flow(current)
arch bridge	a type of bridge that is known for its keystone
automation	automatic, (as opposed to human), operation or control of a process, equipment or a system; or the techniques and equipment used to achieve this.
beam bridge	the most simple bridge; a log laying on a stream
best solutions	are those that work well are economical and cause the least harm to people and the environment.
biotechnology	this family of technology works to improve our quality of life through health care, waste management, agriculture, etc.
blow molding	a material processing method using forming: air blown into a soft plastic tube presses it into a mold (plastic bottles)
border lines	lines that frame a drawing
brainstorming	group activity encouraging thinking of new ideas; these ideas can be verbal, written or pictoral
brittleness	a property of material that cause materials to break or shatter easily, they are often very hard
CAD	computer aided drafting
CAM	computer aided manufacturing
capital	cash, stocks, buildings, land, machines or money
casting	a material processing method using forming: pouring liquid into a mold
circuit	a closed path for electricity, includes a power source, a load and a conductor
closed loop system	this system monitors the feedback from the output of a system to make changes if necessary
combining	form of processing that involves putting materials together. Coating uses paint, silver plating, et.
composite	a mix of materials like plywood, cement or fiberglass
compression	pressing force
computer	a machine that inputs data in the forms of words, numbers or symbols and performs operations according to directions
conditioning	a form of processing that changes the internal properties of a material. Chemical conditioning include developing film, plaster hardening. Heat treating hardens or softens materials. Magnetizing aligns the molecules causing a material to become magnetic.
conductor	transmits heat or electricity
constraints	size requirements or limits
construction lines	light lines used for planning a drawing
CPU	central processing unit; the heart of the computer where instructions are carried out and activity is controlled
criteria	are specifications or needs that must be met when solving a problem.
current electricity	flow of electrons
cursor	the flashing line or icon that indicates where on the computer desktop you are working
custom	made to meet the needs of a single customer
customary	another term for the English system of measurement
database	a program that organizes and manipulates data; in the library you use this kind of program to search for a book by title, author or subject
design brief	short statement describing the criteria and constraints that a solution to a problem must meet.
dimension	the measure of an object, can include length, height or width/depth.
dimension lines	lines that show size and location
drag	the force that holds a moving object back; one of the four forces (gravity, lift, thrust and drag) acting on objects in motion
drive	a device that reads and writes (stores) data on a computer
ductility	the property that allows a material to be easily drawn into a wire.
durability	the property that makes a material capable of withstanding wear and tear or decay, lasting, stable.
efficiency	a ratio that determines the best performance when there is more than one variable

elasticity	the property that allows a material to stretch and regain its shape, as in a rubber band
electron	a negatively charged particle orbiting an atom
emerging	to come into existence; new or emerging technologies can cause changes in work environments, family life and/or society
energy	the capacity for work; chemical energy is derived from fossil fuels from fossil fuels, coal, wood; gravitational includes hydroelectricity; nuclear energy splits or combines atoms; muscle power comes from people and animals
energy processing	changing energy into forms we can use.
engineering	is the art of applying scientific and mathematical principles, experience, judgment, and common sense to make things that benefit people.
English	this system of measurement is based on fractions
entrepeneur	this is the name for a person who organizes and manages the risks for a business venture
ergonomics	the study of the human shape and building products that are safe and comfortable to use, a design criteria
extruding	squeezing a material through a small opening to change its shape (spaghetti, straws)
feedback	information from the system
figure of merit	a calculation for efficiency
flow chart	a graphical organizer for the movement of resources in production
font	a collection of letters, numbers and punctuation all designed the same
force	causing physical change; forces that stress a structure are torsion, tension, compression and shear
forging	heating metals and hammering them into shape (horseshoes)
format	a plan for organization and layout; on the computer this may include size, style and color or font, margins, alignment, organization of data
forming	a method of processing a material that involves changing shape without removing any material; includes extruding, injection molding, casting, bending, blow molding
foundation	the base of a structure, the part that supports the weight is called this
friction	a force that opposes motion
fuel cells	a cell that produces energy through the reaction of fuels, such as hydrogen and oxygen
function	the purpose of an object; what it is supposed to do, a design criteria
fuselage	the body of a rocket
futuring	is trying to predict what future trends in technology may be
gear	a toothed machine part, such as a wheel or cylinder, that meshes with another toothed part to transmit motion or to change speed or direction.
geothermal	energy from the heat of the Earth; volcanoes, hot springs, geysers
grain	how the fibers or crystals of a material align, as in wood
graphics	pictures or drawings
gravitational	energy from the pull of gravity; hydroelectricity produced by waterfalls, rivers, tides
gravity	the force that holds things down on earth: one of the four forces (gravity, lift, thrust and drag) acting on objects in motion
grinding	separating by using sandpaper or a grind stone
hardness	a material property that measures the resistance to scratching
hardware	the machine parts of a computer, or nuts and bolts
heat treating	conditioning by hardening or softening metals; hardening clay in a kiln
hidden lines	these dashed lines indicate that there is something that we can not see from this view
hierarchy	the organization of people at different ranks within a system
hydraulics	uses pressurized oil or other liquids to transmit, amplify or control power
hydroelectricity	energy produced by moving water
hydroponics	growing plants without soil
icon	a symbol or picture representing a tool or program on a computer
ideation	a word describing the technique of thinking up new ideas.
impact	means to have an effect
inclined plane	this simple machine makes it easier to lift heavy loads, you can see it on the back of delivery trucks
industrial age	this age of technology led to the growth of cities as people moved closer to their work in factories. Goods were mass produced.
information	this resource can be obtained from people, books, magazines, videos, television, the Internet….
information age	in this age of technology, computers allow for the storage, retrieval, manipulation and communication of huge quantities of data
information technology	this family of technology involves collecting, recording, sorting, manipulating or classifying data; storing and retrieving information; and communicating
injection molding	squeezing a material through a small opening into a mold (plastic toys)

innovation	building upon an invention with a new idea, device or process
input	the command we give a system
insulation	stops the flow of heat or electricity
Internet	a collection of networked computers throughout the world
invention	a new idea, device or process
isometric	a pictorial which has an edge at the front, the sides are drawn at 30° angles from the front edge
kinetic energy	energy of motion
labor	physical or mental exertion, a form of work
laws	society can try to control technology through governmental agencies and laws
lever	this simple machine is seen in a see saw, crow bar or when pulling a nail out with a hammer
lift	the force that generates upward movement: one of the four forces (gravity, lift, thrust and drag) acting on objects in motion
maglev	a form of transportation that uses magnets to both levitate and propel a vehicle
magnetizing	a form of conditioning that aligns molecules causing the materials to be magnetic
malleability	Capable of being shaped or formed, as by hammering or pressure
management	is essential to ensure that technological products are profitable, safe and built of high quality, on schedule and within budget
mass production	the manufacture of many goods of the same type at one time, frequently involving interchangeable parts and the use of an assembly line
materials	resources can be transformed by technology into products that we need. Examples: wood, cotton, plastic, glass
materials	should be chosen for their availability, appropriateness, cost, etc.
mechanical conditioning	conditioning by hammering to harden metals
mechanical fasteners	combining with staples, nails, glues, screws, paper clips, rivets
menu	a list of items or commands on the computer
metric	this system of measurement is based on 10
modeling	is studying and testing the solution to a problem using scale models and/or computer programs, mathematical calculations, etc
modem	the hardware that connects a computer to the internet
monitor	to watch, observe the output in a closed loop system
multiview	these drawings show more than one view or face of an object. Orthographic projection is a form of this drawing.
nanotechnology	the design or building of an object on the molecular scale; or where one dimension of an object can be measured in nanometers (an nanometer is one billionth of a meter)
natural	materials are found in nature
non renewable	materials that can be used up or are in danger of extinction
nuclear energy	energy from fusion or fission
oblique	pictorial that shows front as true shape and has most lines parallel to each other
ohm	measure of electrical resistance; voltage/amperage
open loop	a system that only has input, process and output
optical	properties of sight: reflectivity (mirror), translucent (transmits light, but can not see clearly through), opacity (can not see through), transparent (can see through- a window).
optimize	procedure used to make a design or system the best possible
output	what comes out of the system, the actual result; ideally this should match the input; can be desired, undesired, expected and unexpected.
people	this resource is in control of technology- they research, design, create, manage and manufacture new products.
perspective	pictorial with diagonal lines converging to a point
physical	this family of technology satisfies our physical needs for shelter, clothing, transportation, etc.
pictorial	drawing of an object as it appears to the eye
piston	a solid cylinder or disk that fits snugly into a larger cylinder and moves under fluid pressure
plastic	a material capable of being shaped or formed, like clay
pneumatics	uses pressurized air or other gasses to transmit, amplify or control power
porous	allowing the passage of gas or liquid through pores, able to aborb
potential energy	energy that is derived from position or condition; stored energy
pressing	forming by pushing material into a mold
primary processing	material processing that includes mining, harvesting, drilling, etc. to convert raw materials into materials that can be used by industries
process	action part of a system, where the resources come together and the work gets done
processing	the way material resources are changed into products

prototype	is the (first) model of a solution. It can be used to test ideas and evaluate a solution.
psi	a measurement of pounds per square inch
pulley	this simple machine uses a rope with a wheel
quality	measures how well something is made and can determine how long it will last; a design criteria
quality control/ quality assurance	ensures that each product is built to the same standard
renewable resource	a resource that is replaced by nature within the time span of human history
research	searching for previous solutions and ideas that others have tried
resources	are the items needed to reach a goal, produce a product or solve a problem; includes people, information, materials, tools and machines, energy, capital and time
robot	a machine that can be programmed to do a variety of tasks
S.I.	International Standard- the metric system of measurment
sawing	separating by cutting with scissors or knives
scale	the word that describes that describes the ratio between a drawing and the actual object
screw	this simple machine is seen in a drill bit or common fastener
search engine	a program or website that searches a database (or the Internet) for specific terms
secondary processes	material processing includes combining, forming, separating, conditioning, finishing and assemblying materials into finished goods
sensor	device that monitor the output of a system; a photocell or float
separating	this method of processing involves removing materials, example: drilling, sawing, etc
service	work done for others as a business or occupation, performing a useful function
shaping	separating process using chisels and planes to shape a surface
shearing	cutting force
simulation	this software models real life experiences
site plan	a drawing showing how structures are situated in their location
software	the programs a computer uses
solar	energy from the sun
soldering	combining by using heat
solutions	answers to problems; the best solutions are those that work well, are economical and cause the least harm to people or the environment
speed	a measurement of distance over time
spreadsheet	this program allows you to organize and perform operations on numbers; stores and banks use this kind of program
static electricity	electricity at rest
stone age	the start of technology with stone tools and fire
structure	the way parts are put together to make a whole; bridges, buildings
subsystem	this system is a small system within a system
suspension bridge	this bridge uses ropes or cables to help support the weight
synthetic	manmade materials
systems	a means of getting things done
technology	the use of knowledge to turn resources into goods or services that society needs or wants
template	a pattern ready to use
tension	pulling force
text	words in print
thermoplastic	a material that becomes soft when heated and hard when cooled.
thermosetting	a material that is permanently hardened when heated and cured
thrust	the force that pushes an object forward: one of the four forces (gravity, lift, thrust and drag) acting on objects in motion
thumbnails	small sketches trying out ideas, brainstorming in pictures
torsion	twisting force
toughness	a material that can withstand a lot of strain without ripping or tearing
tradeoffs	the exchange of one thing for another; used in problem solving
trends	follow particular lines of technological development; current style, vogue
turning	a separating process using tools to shape a material that is spinning on a lathe (baseball bat)
vacuum forming	a forming process in which a vacuum draws a heated sheet of thermoplastic material onto a mold (bubble packaging)
virus	an undesired program that you may acquire while downloading files from the internet; it may damage your files
voltage	measure of force used to move electrons

wedge	this simple machine is seen in a saw or knife
wheel and axle	this simple machine is seen in a door knob or bicycle wheel