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CONSUMER DECISION MAKING

Categories & Descriptions

Consumer Decision Making

Study Guide ~ Additional Resources

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JEANS

An estimated 450 million pairs of jeans are purchased every year, making them a staple of the American wardrobe. Indeed, jeans are the most widely produced piece of apparel in the U.S. Jeans have long been a cyclical market being driven in the main by factors such as employment conditions, productivity, fashion trends, lifestyle factors, and celebrity endorsements. Manufacturers and retailers are constantly challenged to maintain the market by staying on top of fads, changing tastes and consumer desires for different styles of jeans.

Every brand and every style of jeans will fit a little differently, but knowing what to look for will help narrow down the selection to just those jeans that will look great on you. The type of fabric, the cut of the jean and the details can all affect how jeans fit.

Denim is denim is denim -- or is it?

You may have thought that all blue jeans were cut from the same cloth, but this isn't so. Variations in the weave, the fibers and the finishes all create differences.

Weave

- All denim is cotton twill -- a weave that has a slight diagonal to it, but that's where the similarities end. Some denim is a left-hand twill (the diagonal on the dark side runs from lower right to the upper left), which has a very soft feel. A few types of denim have broken twill (the diagonal line changes directions). All other denim is a right-hand twill (the diagonal on the dark side runs from the lower left to the upper right), which is the most common and has a durable feel.

The cotton

- The quality of the cotton the denim is made of will affect the look and feel of the jeans. Fine cotton fabric is made from longer stands of the fiber, giving the jean fabric a softer feeling and a smoother look. High-quality cotton also lasts longer because there are fewer small fibers to rub off -- this is often what you are paying for when you buy premium jeans.

Dyes and finishes

- Most jeans are made of denim that was dyed before it was woven into cloth (this is also called "yarn-dyed"); other jeans are dyed after they have been constructed into jeans. Jeans dyed after construction may have a more saturated color, but it may also fade faster. Blue jeans are dyed with the familiar indigo blue, but there are new innovations in denim dyes all the time. For example, some manufacturers layer the indigo dye with a yellow sulphur dye to gives jeans an aged, dirty-on-purpose look.
- After the pants are constructed, many manufacturers put the jeans through finishing processes. A few terms you may see in product descriptions are:
    - Stonewashed: Jeans are washed with chemicals or actual stones -- usually pumice stones -- to lighten and soften the denim. Occasionally, you may even find a few small pumice stones in the pockets when you first put on your new stonewashed jeans.
    - Sandblasted: To give new jeans a broken-in appearance, the jeans are blasted with sand in areas where wear would occur naturally. This can sometimes lighten the denim, and lighter areas will draw attention to that body part. If you buy sandblasted jeans, make sure the light area is on a part you want to emphasize.
    - Whiskered: Crease lines, called whiskers, are created across the lap to look like the jeans have been sat in many times. Whiskers are printed on, sanded on or created with lasers. They are horizontal lines, so if you are worried about your legs looking too heavy, choose jeans with subtle whiskers or none at all.

Stretch

- Many people love stretch jeans, and for women with more curves, stretch denim can be very flattering. Women with flat rear ends will want to avoid stretch jeans, however, because the stretch will just emphasize the lack of curves.

What makes jeans fit differently?

Legs

- Boot cut: Boot cut jeans flare slightly at the bottom. The slight flare -- not a bell-bottom flare -- balances out large hips and heavy derrieres.
- Wide leg: With a fitted waist, wide leg jeans can be a stylish alternative to your other jeans.
- Straight leg: Straight leg jeans are not as baggy as wide leg jeans, but they share the same stovepipe shape that lacks any flare at the ankle. The straight line of straight leg jeans gives a long, lean look to your legs.
- Skinny: Skinny jeans are slim-fitting jeans that are narrow all the way to the ankle. These are the perfect jeans to wear tucked into a pair of boots because they don't have extra fabric around the ankles.
- Boy cut: With slim hips that sit a little higher and with straight legs. Because of the relaxed fit, these jeans can be the perfect casual jeans, or you can cuff them to your calf and dress them up.

Rise

- The rise is the length from the crotch to the waistband. A standard rise is about 30 inches, while low-rise jeans -- also called hipsters, hip-huggers or low-cut jeans -- have about a 20-inch rise. Low-rise jeans can elongate a short torso, but on a long torso, they can be a bit too revealing in the back.

Seat

- As long as the seat of your jeans fits well and is flattering, a tailor can fix just about everything else. Even if you prefer other pants with a loose fit in the seat, choose jeans with a snug seat. The center seam gives definition to your curves. Back pockets make or break a backside.

Understand the Washes of Jeans

- Jeans come in a number of distinct cuts and washes. Figure out which are right for you before selecting the perfect pair of jeans.
    - Stonewashed jeans: have a lighter, more broken-in appearance.
    - Dark jeans: The deep indigo color of dark jeans make them the ideal jeans for a night out on the town.
    - Distressed jeans: Holes, shredding, and crinkles create the highly worn appearance of distressed jeans.

What does a consumer look for?

Seams

- Flat fell seams have two rows of stitching and are enclosed on both the outside and inside of the jeans. Seams of this type leave no open seam allowances to unravel during wear and laundering. Make certain the seams are neatly constructed and firmly stitched. Where seams are not flat fell, they should be serged (overcast with thread) to cover the raw edge and reduce raveling. Seams that join at the crotch and in the back should meet accurately for smooth contour, comfort, and durability of the garment.

Waistband

- A waistband made of two or more layers of fabric will reduce stretching in the waist area. If the jeans have no waistband, look for interfacing (an extra layer of firm fabric sewn into the waist seam for stability).

Reinforcements

- Look for thread bar tacks or rivets at places of stress like corners of pockets, belt loops and the bottom of the zipper placket.

Zipper

- The zipper will be more durable if the fabric on both sides has been turned under and stitched. Because denim fabric is so heavy, a metal zipper offers more durability than a nylon zipper.

Select the Right Jeans for Your Body Type

With so many designer jeans on the market, it's important to do your homework and select the right pair of jeans for your body type.

- Slim body types: Slimmer body types look great in a variety of jeans. Look for jeans that run straight from the hips through the knee, with a slight flare at the leg opening. Low-rise jeans with a high back and lower front are another good choice. Or, if you're looking for a snug fit, choose jeans that are tight around the waist and

backside.

- Curvy body types: If you have great curves to accentuate, choose jeans that run straight from the hips through the knee with a slight or more generous flare at the leg opening. A wide boot-cut silhouette is also flattering.
- Athletic body types: If you have athletic legs and narrow hips, consider a low-rise jean with a contoured waistband. Legs that taper out to a graceful and generous boot cut are also flattering—but without giving you the retro bell-bottom look. Or, to give the appearance of wider hips and a fuller backside, choose a cigarette-style jean.
- Full-figured body types: Choose a traditional five-pocket-style jean that isn't too snug and has a little give. Many jeans woven with spandex stretch nicely to your frame. Remember also that a slight flare at the leg opening, such as a boot cut, will help to balance a wider or fuller figure, as well as make your legs look longer. Always opt for jeans in darker shades, as they'll have a naturally slimming effect.

Caring for your jeans - Here are a few ideas for denim care:

- Cold wash will keep the color darker, longer. Cold will also prevent shrinkage.
- Warm water will shrink jeans, but may get our tough stains. BEWARE: don't wash jeans with whites unless you want to turn all your clothes blue!
- Air dry jeans for the least shrinkage and the least fading.
- Use a warm iron to get out wrinkles.
- Turn jeans inside out, to preserve the dark color.
- To keep white denim looking brand new wash in warm or hot water. Pre-treat stains and re-wash if stains are still visible before the drying cycle.
- Wash and dry your denim before hemming or altering.
- Consider dry cleaning very expensive jeans. The process will remove dirt but won't affect the wash as much as a machine.

WESTERN BOOTS

You see them everywhere--in school, at the mall, the rodeo, the football game. They're western style boots! Western style boots have become a wardrobe staple for lots of people in Texas.

How do you buy boots?

Before you even walk in the store, know what you want the boots for…. Is it for everyday, walking, riding, dancing, working? Know how much you want to spend. Boots range in price for $20 for composition boots to well over $1000 for a hand crafted pair. Know how much you will use your boots. Composition boots that can be found more inexpensively at discount store may be fine to wear for two days a year at the stock show or for wear when you know they are sure to be ruined. For investment purposes for something to wear everyday with hard wear, be willing to spend more money for a boot that will be comfortable, wear well and be easy to care for. Find a knowledgeable sales person to help you. Wear the socks you expect to wear with your boots.

Boot construction

A cowboy boot has 10 basic parts. Not all boots will have all these parts. The price and quality will influence which boot has what part. The upper boot consists of the vamp, side welt, vamp fitting stitch, and a back quarter.

Materials

Uppers are typically made of composition material or leather. Leather used in boots is either full grain or split grain. When the hide comes off of a cow, it is too thick for uppers. The leather is split. An upper made from full grain leather is made from the top layer. It is tough and resistant to moisture. Split grain is the suede or bottom layer of the hide. Some boots have full leather uppers but they look soft and suede like because the surface has been brushed or textured. The texture finish is called Nu-buck.

Composition materials are man-made materials that can take on a variety of finishes. Composition materials do not breathe and can cause your feet to perspire more. However, composition boots tend to be more water-resistant.

Alligator is the most exotic leather used. It is not durable because it splits along the scales. So does everything else with scales. Ostrich is a durable material. As more ostrich are raised and farmed, the price of ostrich becomes more affordable.

Check the stitching to make sure the seams are neat and stitching is complete. Run your hand inside the boot to make sure all the seams are flat and smooth.

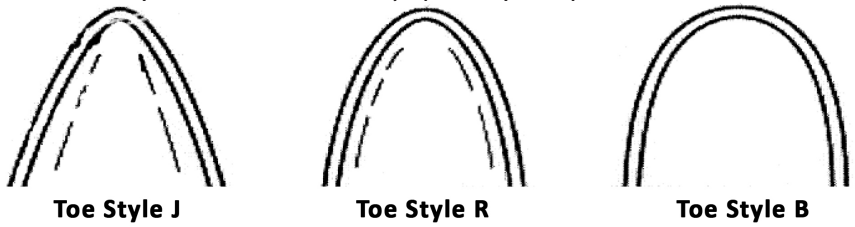
Parts of the Boot:

1. SIDE WELT: Seams and quarters are beveled and stitched from the inside, trimmed close and pressed flat for better appearance and comfort.
2. VAMP FITTING STITCH: Multi-row stitching using alternative nylon thread gives the entire boot more strength and durability.
3. VAMP: The front foot of the boot that covers the toes and instep is stretched for perfect fit.
4. TOE BOX: The toe area is moulded onto the shape of the last for perfect shape and protection.
5. COUNTER: A stiff piece treated for best quality is inserted inside the boot to give the heel area excellent support.

6. WELT: A quality leather welt, especially treated for best resistance, is sewn to the leather outsole with a strong interlocking stitch.
7. STEEL SHANK: A strong steel shank, shaped for the exact fit of the arch, is utilized to give the boot comfort and support.
8. CORK PAD: A pad made with compact cork, between leather insole and leather outsole, gives more comfort and better insulation. The insole will progressively mould to the shape of your foot.
9. WOOD PEGS: Two rows of pegs firmly locks the shank area.
10. BACK QUARTERS or HEEL SIDE: A piece of leather is sewn to the upper back of the book for additional support.

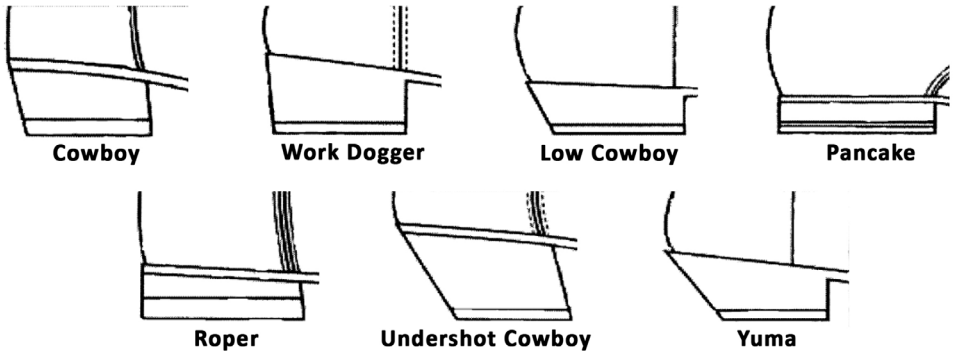
Toe

The shape of the toe box is important for function and fit. When cowboys started wearing boots in the trail days, they wore tight pointed boots to show off the shape of their foot (back then size 8 was a big foot), kept boots tight to avoid getting hung up in saddle stirrups, and to protect legs from thorns, critters and varmints. The point of the boot also helped the cowboy slide in and out of the stirrup easily. Women=s boots were not even manufactured until the 1930's. Choose a toe box that will allow room for your toes to move and provide a comfortable walk. Round toe boots have been common for a long time and recent years have seen new popularity in square toes.



Heel

The cowboys of the past wore a boot heel that was 2 inches high and extremely underslung. These heels made it easy for a cowboy to ride in the stirrup and the best chance to shake loose if thrown from the saddle. But those same cowboys would take their boots off if they had to walk because they were meant for riding, not walking. The boot heel provides the center of balance and support when you walk. The flatter heel with little under sling is the most comfortable for standing and walking. Fashion stacked heels are the tallest heels. Utility heels give height and are slightly underslung.



Other Parts

The back quarter is a strip of leather cut and stitched separately to the back of the boot above the heel. The back quarter adds stability and shape to the boot. The side welt is the stitch that runs from the foot to the top of the boot. It

brings the boot together as well as strengthening the construction. The elaborate stitches that decorate the boot have a purpose beside beauty. The stitches add strength and allow the leg of the boot to stand up and not bunch around the ankles. Stitches on the top of the foot made a cowboys foot appear smaller. The stitches do serve an important function in keeping the lining of the boot tight against the leather so it does not bunch up each time you insert your foot.

The insole is between your foot and the outer sole. It consists of the shank, pad, and the counter. The counter is a stiff piece inserted in the heel area of the boot to give support to the heel and back of the foot. Not all boots will have a counter. It will depend on the brand. The shank is the piece of boot that shape and provides arch support. Shanks can be made out of a variety of material. Make sure your arch is supported comfortably by the shank in whatever boot you choose. A pad is a piece added around the ball of the foot to provide extra comfort and insulation. Most pads are made of cork. A peg locks all parts of the shank area together.

The outer sole is the part that hits the road. The soles can be made of leather or composition material. Here is where you really need to know the purpose of your boots. Composition soles are what you want to wear for meat judging in a freezer: Leather soles are great for dancing, riding, and sliding. While some people prefer a leather sole for these reasons, others prefer a composition sole such as rubber for durability and traction. There are boot shops that can typically replace a leather sole that has been worn out for a fraction of the cost of a new boot purchase.

Boot Fit

Unlike a lot of shoes, boots are made true to fit. That means that you buy your true shoe size. Boots are meant to be snug through your instep and slightly lose through the heel area.
There will be resistance when you first put on your boot. If your foot slides in too easily, the boot is too big.

Make sure the boot toe has ample room for your toes to wiggle. Stand up and press your foot forward. In a “well fitting” boot there will be no pressure. Different shapes of toe boxes will provide different fits. The slightly rounded Roper seems to be a classic. The very pointed styles offer a different fit with less toe room.

The instep should be snug. As you wear your boot this area will break in and conform to the shape of your foot. If the instep is too loose, the boot will slip around on your foot and cause foot problems. To test the fit, run your thumb and index finger along the instep. The leather should
slide over the top. If it bunches it is too big and if it doesn=t move it is too tight.

The ball spot is the most important check point. Make sure the widest part of your foot hits the widest part of the boot. Push on the bottom of the boot to locate the ball of your foot and visually check to make sure it is at the widest part of the boot.

The heel should allow your foot to move up and down slightly as you walk. A “well fitting” boot has some space allowed for natural foot movement. The boot bottom will flex with age and wearing.

Many boot styles are appropriate for either males or females to wear. In general, men=s boot size is two sizes bigger than women=s boot size. The important thing is to get a boot that fits well and not worry about the labels.

Boot Care

Good quality boots are an investment. As with any expensive purchase, you will need to take care to get your money=s worth out of your boots.

Here are some tips:

- Dirt and Dust are the two worst enemies to leather. Simply wipe your boots with a slightly damp (not wet) cloth to prevent the fibers from breaking down.
- Conditioners make leather soft and pliable. If you want to condition leather, a lanolin base is best. Apply conditioners

when boots are clean and dry.

- Avoid too much wax and oil. They clog the pores in the leather and cause it to dry out.
- If your boots get wet, let them dry naturally. Contrary to popular belief, they should not be dried near heat or sunlight. They should not be stuffed to hold their shape while they dry. Just the opposite - dry un-stuffed.
- Condition snake and alligator whenever it looks or feels dry.
- Boots can be weatherized using a non-silicon water and stain protector. Mink oil does not waterproof boots, it conditions them.
- Scuff marks can be removed from boots with a soft pencil eraser.
- Store boots in a warm dry place. Boots will mildew if kept in a damp place.
- Always put your boots where they can air out after wearing.
- Help your boots to look like new by applying a boot cream in a color that closely matches the leather. The cream will cover blemishes and leave a glossy finish. Cream based polish is better than wax. If you want to use wax, use the cream first.

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Friendly sales people from Cavender=s Boot City
Developed by Connie Shepard, Extension Agent-ENP, Bexar County, November 1998.
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COMPUTERS

Computers a integral part of our lives every day, from checking e-mail, to posting information on social networks to paying bills, or completing school assignments. Regardless of your various reasons for purchasing a computer it is important to know what you need before making purchase in order to have a computer that you can accomplish your task with. With all the options of both standard packaged computer's or a custom built computer, learning which one is best for you can save you money, and headaches, in the long run.

Key Terms

In order to understand the computer purchasing process, consumers need to be familiar with some key terms. These terms are words that can be seen at stores were computers are sold, websites of computer manufactures' and other places were computers are seen.

- **Cable Modem** – used for connecting to the Internet and is much faster than a typical dial up modem.
- **Central Processing Unit (CPU)** – The area of the computer that processes everything from basic instructions to complex functions.
- **CDRW** – A CD drive that can read write and rewrite to a CD.
- **Computer** – A programmable machine. The term most often is used to refer to a desktop or laptop computer.
- **Desktop/Tower Computers** – Commonly referred to a computer system that is not moved frequently and stays on a "desktop" for use.
- **Digital Subscriber Line (DSL)** – Is a medium for transferring data over regular phone line and can be used to connect to the Internet.
- **Expansion Card** – A printed circuit board that can be installed in a computer to add functionality to it. For example a user may add a new graphics card for 3D graphic power.
- **External Hard Drive** – A drive located outside of the computer for the typical purpose of the backing up of an internal hard drive or for the storage of additional/large files.
- **Hard Drive** - This is where you will store all your files whether it be music, movies or word documents.
- **Input Device** – Any device that provides "input" to a computer. Such devices include keyboard, mouse, web cameras, etc.
- **Internal Hard Drive** – A drive that resides inside the computer, which most times includes the operating system and pre-installed applications.
- **Keyboard** – A board of keys used for inputting data into the computers.
- **Laptop** – Also known as notebooks, are portable computers that you can take with youth and use in different environments. They include a screen, keyboard, a trackpad/trackball which serves as a mouse.
- **Liquid Crystal Display (LCD)** – Super-thin displays that are used in laptop computers screens and flat panel monitors.
- **Memory** - Memory can refer to any medium of data storage, it usually refers to RAM, or random access memory. When your computer boots up, it loads the operating system into its memory, or RAM.
- **Monitor** – Used synonymously with 'computer screen' or 'display.' The monitor displays the computer's user interface and open programs, and the user to interact with the computer.
- **Motherboard** – Main circuit board of your computer.
- **Mouse** – One of the primary input devices on a computer. The mouse allows for quick movement around the monitor and implementation of action based on the ability to use the buttons located on the mouse.
- **Network Card** - Your computer should have an Ethernet port on it. This port will allow you to physically connect to the internet or your internal network by plugging it into your router / modem.
- **Operating System** - This is the software that makes your computer go. You can buy a computer with the Mac OS X operating system or Windows 7 or any flavor of Ubuntu Linux as well.
- **Optical Drive** - The optical drive in your computer should be able to read and write CDs and DVDs.
- **Processor** - This is the brain of your computer. It can also be referred to as the CPU. Processors come in many different varieties. Processor speed is measured in gigahertz or GHZ. The larger the number of GHZ the faster the computer.

- **Plug and Play (PnP)** – Devices that work with a computer as soon as they are connected.

- **Random Access Memory (RAM**) - The RAM or memory is what your computer use's to store information while you are using the computer. This can also be referred to as Random Access Memory.
- **Read Only Memory (ROM)** – Not to be confused with RAM, ROM is memory containing hardwired instructions that the computer uses when it boots up, before the system software loads.
- **Serial Port** – Type of connection on PCs that is used for peripherals such as mice, gaming controllers, modems, and older printers. Sometime called a COM port.
- **Sound Card** – A component inside the computer that provides audio input and output capabilities.
- **Storage Device** – Any type of hardware that stores data.
- **Speakers** – Common type of output device that produces audio output that can be heard by the listener.
- **Universal Serial Bus (USB)** – Most common type of computer port used in today's computers.
- **Video Card** - This is the part of your computer that allows you to show what you are doing. Without a video card you would not be able to see what you are doing on your monitor.
- **Video Graphics Array (VGA)** – Standard monitor or display interface used in most PCs.
- **Wireless Network Card** – A card you will be able to access the Internet without a wire connecting you to a router/modem.

Reference: Tech Terms Dictionary, http://www.techterms.com/

Computer Purchase Options

Desktop or Laptop

Before purchasing a computer, you need to decided what type, or style, of computer is best for you. Basically, computers are categorized as desktops and laptops. The information below provides a quick overview of the different options, and which would be a best option for you.

The laptop is a great option if you:

- Live in a small space that simply cannot house you and a desktop PC at the same time
- Have an aversion to wires
- Want to take your PC anywhere including in and around your house or on adventures beyond four walls without having to bring a hand truck
- Love your PC so much that you cannot bear to part with it. Ever.
- You're a super secret agent, where smaller and mobile is indeed better

The desktop PC is a great option if you:

- Want to pay a little less and get a little more
- Don't plan to take it anywhere, or if you do (you gamers especially), you don't mind the hassle of packing it up every time
- Like the idea of upgrading the heck out of it
- Are a super demanding computer user and multimedia junkie

Reference: Intel, http://www.intel.com/learn/practical-advice/before-you-buy/evaluate/desktop-or-laptop

Factors To Consider If Purchasing A Laptop (PC World, www.pcworld.com)

Notebook buyers have to think about such additional variables as size, weight, screen dimensions, battery life, and keyboard quality--plus options such as built-in wireless.

Key Features:

- **Processor**: Intel's dual-core processors have helped laptops gain ground in the power department. In PC World tests, laptops using these dual-core processors performed considerably faster than laptops using single-core processors, particularly when multitasking. In newer notebooks you may see references to Core Duo, Core 2 Duo, and Core 2 Extreme, which represent steps up in computing power for laptops.
- **System memory**: Unless you're buying on the cheap, a new laptop generally includes 2GB of system memory. Many notebooks today are available with 3GB of RAM or more. Before electing to upgrade to more RAM than

that, be sure to check which version of Windows your new notebook uses. A 32-bit OS can't efficiently use more than 3GB of RAM. A 64-bit version can go higher. Outfitting your laptop with more RAM at the time you buy it is convenient and helps you extend its useful life.

- **Graphics memory**: Portables can have either of two different types of video chip sets: dedicated video (which means a separate preinstalled graphics card) or integrated graphics. If you intend to use your laptop for even casual gaming, make sure that it has memory dedicated to graphics use, rather than relying on graphics that pull from main memory.
- **Screen**: Some laptop screens continue to get bigger--and most have gone wide, too, enabling you to view spreadsheets or movies with ease. But other screens have gotten significantly smaller to accommodate all sorts of road-ready computing. Price is no longer much of a deterrent for any of these choices. Even budget shoppers can afford the luxury of high-resolution color:
- **Battery**: Laptop battery life continues to improve. Keep in mind that manufacturers may improve their times by taking steps such as turning off wireless receivers, which tend to consume a lot of power. Also, check to see if the manufacturer's stated battery-life numbers are for its regular or extended-life battery--the latter kind of battery can last up to twice as long as a regular one. And remember that, in general, lighter laptops tend to have longer battery lives than big desktop-replacement notebooks do.
- **Keyboard and pointing device**: Though you can get accustomed to almost any laptop keyboard, it's best to try before you buy. Thin-and-light notebooks usually have smaller-than-average keys spaced more closely than the keys on a desktop-replacement model, and their layouts may differ from a standard keyboard's. If you have largish hands, be aware that an ultraportable's keyboard may be difficult to use. Buy a USB mouse designed for laptops. It's a small investment, and your hands will thank you for it.
- **Optical and other drives**: Most manufacturers offer laptops with rewritable DVD drives. But now that Blu-ray Disk has triumphed over HD DVD in the high-definition format wars, more notebooks are being configured with Blu-ray drives. If you need a floppy drive for some reason, you can buy a USB add-on drive.
- **Hard drive**: Even inexpensive netbooks now come with 60GB hard-disk drives (HDDs). Most all-purpose machines offer hard drives in the range of 200GB to 320GB, and ultraportables now pack solid-state drives (SDDs). Though SDDs are faster and lighter than HDDs, their capacities are considerably lower (maxing out at around 128GB) at a significantly higher cost. So, you need to balance speed and weight against price and storage capacity. Whichever choice you make, you'll find that hard-drive space fills up quickly, so you might want to consider buying a portable external drive as well.
- **Weight and bay design**: Laptops range from 15-pound desktop replacement monsters to ultraportable lightweights that rely on external drives to come in at under 3 pounds. One-bay notebooks balance features and weight. Some laptops continue to offer the optical drive as a modular device, so you can swap it out for a second hard drive or a second battery. When making a purchase, however, keep in mind that you should consider the weight not only of the laptop but also of the AC adapter, the extra batteries, any external modules, and their cables. Ultraportable notebooks have lightweight adapters, but they can weigh almost as much as a full-size notebook if you have to carry an external optical drive, too.
- **Communications**: Most laptops have at least two USB 2.0 ports; many offer four, and some up to six. A majority of notebooks include a four-pin FireWire (IEEE 1394) port for connecting an external drive or a digital-video camcorder. Others now include eSATA ports for high-speed data transfers. Built-in ethernet now comes standard on all portables, with many models carrying gigabit ethernet. Many laptops also have built-in Bluetooth.

The Specs Explained

Before shopping for a laptop, consider how you'll be using it. If your primary goal is to get some word processing or spreadsheet work done while staying on top of e-mail, a netbook (priced at less than $500) will meet your needs. But a netbook does entail some sacrifices: a smaller processor, about 1GB of RAM, not much in the way of hard drive space, no optical drive, and (at biggest) a 10.2-inch screen. On the surface not much separates the netbooks from sexy lightweight notebooks, but the specs under the hood (and a big screen inside it) can inflate an ultraportable's price to as much as $2000 more than a typical netbook.

Remember that most vendors let you custom-build and -price your own laptop by picking from a mind-boggling array of

features, which gives you a lot of control over the final product. You may be able to afford a faster notebook by accepting a smaller, less-expensive hard drive or DVD-ROM/CD-RW drive, instead of a BD-ROM.

Unlike those on desktop PCs, only some of the components (such as memory and the hard drive) are upgradable; others (such as the graphics board) are permanent once they're installed at the factory. That's slowly changing, as some manufacturers begin to incorporate upgradable graphics. But take your time and pick only what you need. Following is a rough breakout of some configuration options.

- Installed memory. The more installed memory your laptop has, the more applications you can run at once, and the better your machine will perform. Ease of access aside, upgrading memory in a notebook is a bit trickier than with a desktop, so buy as much memory preinstalled as you can afford. Laptops with 2GB of RAM are optimal. If you're running Windows Vista on a laptop, consider upgrading to 3GB of RAM (or more if your notebook uses a 64-bit version of the OS).
- Processor. The CPU determines how quickly a notebook runs applications and performs on-screen tasks. Core Duo and Core 2 Duo processors are good choices for speedy processing. Atom processors appear only in budget-friendly netbooks, so plan according to your needs
- Screen size. The specified size of a laptop's LCD screen represents a diagonal measurement. The larger the screen, the higher the maximum resolution and the more information you can view at once. The aspect ratio seen on some newer 16-inch laptop screens offers the ideal resolution for viewing high-definition movies on the go.
- Screen coating. A laptop's LCD panel is only as good as it looks when you look into it. Can you see text and images clearly when you're viewing them in broad daylight? Many notebooks that look sharp on store shelves (thanks to their extra-glossy coatings) may be tough to work with outdoors or in a coffee shop. So keep in mind not only how you plan to use your notebook, but where you want to use it.
- Hard drive. The larger the hard drive, the more data you can keep on your laptop. Most cheap netbooks offer 80GB drives at this point, so why not give yourself a little room to grow? If you plan to work with databases, spreadsheets, or digital photo or video files, opt for a large drive. Be sure to find out the hard drive's speed, too.
- Expansion bays. The more expansion bays your laptop has, the more options you'll have for switching in new optical drives or other storage drives. But switching drives takes time, and modular components aren't as common as they used to be. As laptops gravitate toward flush form factors and unibody designs, may find that your only practical option is to lug around external drives that plug in through USB ports.
- Optical drives. Most manufacturers offer laptops with rewritable DVD drives, which give you the most flexibility. Alternatively, you could purchase a notebook with a DVD-ROM/CD-RW drive, to save money.

Factors to consider if purchasing a Desktop (PC World, www.pcworld.com)
Today's modern desktop PCs offer a wealth of options: You can go for a PC with a fixed retail configuration, or you can customize your system by stepping through a sometimes dizzying array of choices from a configure-to-order vendor. The resulting array of components is no longer wrapped up in a beige box, but in a colorful shell of highly variable shape and size, differentiated by indecipherable naming conventions.

Presented with so many possibilities, you need to narrow the field by considering what you want to use your new desktop for. Are you an avid photographer looking for a speedy but cost-effective platform for editing high-resolution photos? If so, you'll benefit from buying a machine with extra RAM and a discrete graphics card. If you've acquired an extensive media collection, and want an inexpensive and compact way to pipe it to your HDTV, a compact PC tailored toward media sharing and playback may be your best bet.

Desktops fall into three major categories, each with its own range of price and performance:

- compact PCs,
- all-in-one PCs, and
- classic tower PCs
    - budget
    - mainstream

- performance

Each style of machine has different strengths and weaknesses, and choosing the one that's best for you depends' largely on how you plan to use it.

- **Compact PCs**
  As the smallest members of the desktop computer family, compact PCs often omit features to deliver computing power in a space-saving package. The combination of energy-efficient components, quiet operation, and small size makes compact PCs ideal for people who want a nonintrusive machine. A typical compact PC costs between $300 and $600, though the price goes up as you add upgrade options.

  Compact PCs tend to be equipped with notebook or netbook components, such as Intel Atom processors. This limits their usefulness in tasks that demand lots of processing power, but it makes for quiet, energy-efficient operation. Some compact PCs are configured for as low a bottom-line price as possible; others are packed to the gills to deliver optimal performance in a compact system.

  When assessing smaller PCs, keep an eye on the number of ports. The smaller the footprint, the fewer features you can reasonably expect, and that includes fewer connectivity options. Though you'll get a VGA port and (on average) six USB 2.0 ports, many compact PCs also offer HDMI--an asset for home-theater setups.

- **All-in-One Desktops**
  All-in-One PCs are self-contained: components are mounted behind a display, with screen sizes ranging between 18- and 27-inches. With no cords to manage or peripherals to juggle, setting up your new all-in-one PC can be as simple as pulling the machine out of the box and plugging it in. Some all-in-ones also offer a rather distinct perk: touchscreens.

  Many all-in-one PCs come with a wireless keyboard and mouse, Bluetooth support, and Wi-Fi connectivity. This reduces cord clutter to a minimum--an important consideration in spaces where an attractive décor or efficient use of space is at a premium.

- **Budget PCs**
  Typically these PCs are minitower systems, with fewer drive bays than a full tower has. Beware models that come equipped with AMD Sempron or Intel Celeron processors, as those CPUs' performance drawbacks will cancel the advantage of their low cost. Inexpensive tower desktops usually incorporate low-powered, integrated graphics rather than discrete graphics cards. As a result, your entertainment options may be limited. High-definition media playback suffers on models equipped with older Intel-based integrated graphics; and if you're interested in gaming, you'll be hard pressed to tackle anything more demanding than Flash-based offerings.

  Budget PCs generally offer at least 320GB of storage space and at least 2GB of RAM, but permit few upgrade options beyond adding RAM or a larger hard drive. They rarely leave much room for expandability inside their cases, either. Still, if you need a machine for nothing more than word processing, e-mail, and occasional DVDs or online videos, these machines should suit you just fine.

- **Mainstream PCs**
  up in the desktop chain, you'll find machines aimed at mainstream users. These PCs start in the vicinity of $800, and carry at least 500GB hard drives and about 4GB of RAM. Powered by dual-core and lower-end quad-core processors, they deliver better performance than budget desktops, without breaking the bank.

  Photo-editing applications stand to benefit from working with multi-core processors, and entertainment enthusiasts will appreciate the improved gaming performance and stutter-free HD media playback that a discrete graphics card helps deliver. Many of the machines in this category include a Blu-ray drive, either standard or as an optional extra. And if your video editing needs are modest, you probably can find a machine in the mainstream price bracket that

has enough power to handle your creative projects.

- **Performance PCs**
  Occupying the high end of the spectrum are performance desktops. Such PCs generally start at a little over $1500. Most performance PCs are full tower systems, equipped with a slew of drive bays and expansion slots. Designed to tackle challenging tasks, they come equipped with the latest and greatest Intel and AMD dual- and quad-core processors, 6GB or 8GB of RAM, and at least one discrete graphics card. Some performance desktops include multiple graphics cards to deliver improved graphics performance.

  Performance desktops are suitable for users who need a lot of processing power to get their work done--professionals who do extensive high-resolution photography or video editing, and gamers who are willing to pay for top-of-the-line visual effects.

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DIGITAL CAMERAS

There are hundreds of cameras available ranging from those that will easily fit a shirt pocket to very large complex cameras. Often times, these cameras are advertised with abbreviations that can be confusing for the novice consumer.

Film Camera vs. Digital Camera

Here is a quick, basic comparison so you can understand the difference between the two types of technology (film vs. digital). With a film camera, an image is formed by collecting light from a particular scene or subject and focusing on film, which reacts chemically when struck by light and is said to "capture" the image. What makes a camera "digital" is that, instead of film, it has an image sensor that reacts to light by sending out electrical signals. The camera takes the information from the image sensor and processes and stores it as a collection of pixels in a digital file, usually on a memory card inside the camera.

Terminology

- **Pixel** – (short for picture element) tiny dots that make up an image. Each pixel can only be one color at a time; however, since they are so small, pixels often blend together to form various shades and blends of color.
- **Megapixels** – when you collect a million pixels, you have a megapixel. The number of megapixels tells you how may pixels the image file has. A camera that captures 8 million pixels, for example, is called an 8 megapixel camera.
- **SLR Camera** - A single-lens reflex (SLR) camera is a camera that typically uses a semi-automatic moving mirror system that permits the photographer to see exactly what will be captured by the film or digital imaging system (after a very small delay), as opposed to pre-SLR cameras where the view through the viewfinder could be significantly different from what was captured on film.
- **Viewfinder** - what the photographer looks through to compose, and in many cases to focus, the picture
- **Shutter Speed** – controls light and motion. Slower shutter speeds make the image lighter. Faster shutter speeds make the image darker. Faster shutter speeds also means the more a moving subject will be blurred in the picture.
- **Aperture** – (also called f-number or f-stops) a hole or an opening through which light travels; controls both light and depth of field. The larger the aperture opening, the more light affects the image and the lighter the image. The smaller the aperture, the greater the area of sharpness.
- **Compression** - the process of making larger image files smaller and more manageable. The less compression produces better image quality (higher resolution) which results in larger prints. However, less compression also means that you cannot store as many images. More compression produces lower quality images. These are fine for small prints, email or websites. By using more compression, you can store more images.
- **Hot Shoe** – a mounting point on the top of a camera to attach a flash unit
- **RAW files** – collection of unprocessed data. This means the file has not been altered, compressed, or manipulated in any way by the computer. This file type is often used by professional photographers.

Types of Digital Cameras

Basic Cameras – simple point-and-shoots with just the features needed for routine shots

- Subcompacts: small cameras that fit in a pocket, weight a few ounces, and can be carried everywhere. Most do not have manual controls or viewfinders, but some include a variety of useful features, such as touch-screen LCDs (liquid crystal display). Some have zoom lenses as long as 14x.
- Compacts: mainstream compacts are too big for pockets but small enough for most handbags. Many are simple to use and best for everyday events. Some don't have manual controls for exposure and composition, limiting you to the camera's assortment of preset scene modes, as with subcompacts.
- Superzooms: characterized be a very long zoom rang – 15x or greater, which is good for sports, travel, or nature shooting. They are generally bulkier ad heavier than compacts and subcompacts. Some models have zooms as great as 30x.

Advanced Cameras – feature-laden models that include sophisticated point-and-shoots and models that let you change

lenses.

- Advanced Point-and Shoots: these cameras have a non-detachable lens but differ from basic models in that they have lots of manual controls, a hot shoe for an external flash, and support for RAW files. It is the lightest advanced type of digital camera.
- SLR-likes: these cameras accept interchangeable lenses but they lack a through-the-lens viewfinder (in fact, most has no viewfinder). They are smaller and lighter than an SLR but usually larger than a point-and-shoot.
- SLRs: have the most features, with interchangeable lenses and the largest sensors for the best image quality in low light, and a through-the-lens viewfinder. Controls are extensive. They are also the heaviest, most expensive cameras. Most SLR's are now able to capture HD-resolution video.

Digital Cameras Features

Digital camera features vary greatly model to model. Some might be essential to you, while others might be of use only for highly specialized applications.

- **Exposure modes** – most digital cameras are highly automated with features such as automatic exposure control, which manages the shutter speed and aperture according to the available light. In that mode, the camera generally handles setting ISO and autofocus too. But there are other program modes that allow you to control specific settings, including shutter priority, aperture priority, and special scene modes. Some cameras include full manual controls, which let you set shutter speed and aperture.
- **Zoom lenses** – this type of lens, which is actually made up several different lenses or lens elements, allows you to vary the focal length. That provides you with flexibility in framing shots and closes the distance between you and your subject, which is ideal if you want to quickly switch to a close shot. One common feature of zoom lenses is that they generally protrude from the camera when you turn it on. But some subcompacts and a few compacts and superzooms have non-telescoping lenses.
- **Image Stabilization** – more and more cameras now come with an image stabilizer, a device that compensates for handheld camera shake. Often, the IS device lets you shoot with a slower shutter speed than you otherwise could without producing blur due to hand shake. Image stabilization is something that you should look for, especially if the camera has an optical zoom greater than 3x.
- **Face Detection & Smart Camera features** – feature that attempts to find a face in the image to set focus, exposure, and color balance so that faces appear in focus and well exposed. In some cameras, you have to turn the feature on, in others, it is automatic. Other types of smart features that are starting to be available are smile shutter mode, which shoots a photo of the subject when a subject smiles and blink warnings, alerting you to shots in which a subject might have blinked.
- **Focus** – some cameras automatically adjust the focus of the lens with autofocus features. Most advanced cameras include additional focusing functions. Be sure to look carefully at the types of additional features available on your camera, including manual focus.
- **Shooting Modes** – Most cameras have three options for shooting still images: single image, burst mode, and self-timer. The burst mode allows you to fire off a series of shots quickly, for several, dozens, and sometimes scores of shots. The self-timer mode provides a delay between the moment the shutter button is pressed and the photo is captured.
- **Playback Modes** – all digital cameras can review images on the LCD, along with exposure and other information embedded in the image file. This allows you to quickly see what the image actually looks like, and delete it if you don't like it. Many cameras have automatic orientation features that run the photo vertically or horizontally to correspond to how you shot the photo.
- **LCD Viewers** – displays on cameras that accurately display the image you will get when taking photo. Sometimes these viewers are hard to see in bright sunlight. These LCD viewers have often replaced the optical viewer on many subcompact and compact cameras. A camera with an optical and an LCD viewfinder is more versatile, especially when you shoot in bright light or need to conserve battery power. Also, some point-and-shoot and SLRs include swiveling displays, which are helpful for taking hard-to-reach shots.
- **Flash** – available on almost every digital camera, a flash allows you to illuminate subjects by using a short burst of light. Nearly all have auto-flash modes, a setting that will automatically fire a flash whenever the camera senses there isn't enough illumination for a correct exposure. Most include other flash modes, including red-eye

reduction mode.

- **Image File Formats** – the most commonly used file format is the JPEG, a compressed image format that allows you to use the file for a number of different applications. Advanced point-and-shoots and all SLR-Likes and SLRs can also capture images in a file format commonly known as RAW. RAW files can yield the best quality images and give you the most flexibility when manipulating photos with software.
- **Memory Cards** - Instead of film, nearly all digital cameras record their shots and store them on flash-memory cards. SecureDigital (SD) is the most widely used format. Other memory cards used include Compact Flash (CF), Memory Stick Duo and xD.
- **Connections** – to save images, you transfer them to a computer, typically by connecting the camera to the computer's USB port, or inserting the memory card into a special reader. Cameras can also be connected to printers, or you can insert the memory cards directly into select printers. Most cameras also include a video output that lets you view images on your TV.
- **Video** – Basic point-and-shoots have been able to capture video for many years, but SLRs have only recently included this feature. Most cameras include HD-resolution video, although some still capture standard definition, which may not look as sharp on an HDTV. Some models with HD video quality are good enough to avoid the cost and inconvenience of a separate camcorder. One convenient video feature many cameras now include is a dedicated video button, which lets you quickly record video when you are shooting still images. Also, in you are buying a basic or advanced point-and shoot, check to see whether the camera can zoom while capturing video. Not all models can.

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PRINTERS

The number of printer options available is staggering. Not only are there many brands with endless features there is also a vast array of applications. You not only need to know what the printer can accomplish you need to take the time to determine what you need the printer to do. Then there are the issues of print quality, reliability, warranty, service, cost, and maintenance.

Key Terms

- **DPI** – is a measure of spatial printing or video dot density, in particular the number of individual dots that can be placed in a line within the span of 1 inch. The DPI value tends to correlate with image resolution
- **Image Resolution** - describes the detail an image holds. The term applies to digital images, film images, and other types of images. Higher resolution means more image detail.
- **PPM**- Pages Per Minute - The speed of early printers was measured in units of characters per second. More modern printers are measured in pages per minute. These measures are used primarily as a marketing tool, and are not as well standardized as toner yields. For purposes of selecting a printer PPM is easier to understand than toner yields. Usually PPM refers to sparse monochrome office documents, rather than dense pictures which usually print much more slowly, especially color images. PPM are most of the time referring to letter paper.
- **Inkjet Printer** - is a type of computer printer that reproduces a digital image by propelling variably-sized droplets of liquid material (ink) onto a page. Inkjet printers are the most common type of printer and range from small inexpensive consumer models to very large and expensive professional machines.
- **Laser Printer** - is a common type of computer printer that rapidly produces high quality text and graphics on plain paper. As with digital photocopiers and multifunction printers (MFPs), laser printers employ a xerographic printing process but differ from analog photocopiers in that the image is produced by the direct scanning of a laser beam across the printer's photoreceptor.
- **Multifunction Priner (MFP)** - Multifunction Device (MFD), is an office machine which incorporates the functionality of multiple devices in one, so as to have a smaller footprint in a home or small business setting, or to provide centralized document management/distribution/production in a large-office setting. A typical MFP may act as a combination of some or all of the following devices: Printer, Scanner, Photocopier, Fax, and E-Mail
- **Spooling** - documents formatted for printing are stored onto a buffer (usually an area on a disk) by a fast processor and retrieved and printed by a relatively slower printer at its own rate. As soon as the fast processor has written the document to the spool device it has finished with the job and is fully available for other processes. One or more processes may rapidly write several documents to a print queue without waiting for each one to print before writing the next. Spooler or print management software may allow priorities to be assigned to jobs, notify users when they have printed, distribute jobs among several printers, allow stationery to be changed or select it automatically, generate banner pages to identify and separate print jobs, etc.
- **Driver or a print processor** - is a piece of software that converts the data to be printed to the form specific to a printer. The purpose of printer drivers is to allow applications to do printing without being aware of the technical details of each printer model.
- **Ethernet** - is a family of frame-based computer networking technologies for local area networks (LANs). A Local Area Network is a computer network covering a small physical area, like a home, office, or small groups of buildings, such as a school, or an airport. The defining characteristics of LANs, in contrast to wide area networks (WANs), include their usually higher data-transfer rates, smaller geographic area, and lack of a need for leased telecommunication lines.
- **USB** - is a specification to establish communication between devices and a host controller (usually personal computers). USB is intended to replace many varieties of serial and parallel ports. USB can connect computer peripherals such as mice, keyboards, digital cameras, printers, personal media players, flash drives, and external hard drives. For many of those devices, USB has become the standard connection method. USB was designed for personal computers, but it has become commonplace on other devices such as Smartphones, PDAs and video game consoles, and as a power cord between a device and an AC adapter plugged into a wall plug for charging.
- **CMYK** - is a subtractive color model, used in color printing, and is also used to describe the printing process itself. CMYK refers to the four inks used in some color printing: cyan, magenta, yellow, and keyblack. Though it

varies by print house, press operator, press manufacturer and press run, ink is typically applied in the order of the abbreviation.

The CMYK model works by partially or entirely masking colors on a lighter, usually white, background. The ink reduces the light that would otherwise be reflected. Such a model is called subtractive because inks "subtract" brightness from white.

Printer Uses

- Home User: The home user demands a lot from a printer. The device must tackle everything from a book report to a newsletter to the occasional snapshot--all without breaking the budget. This is why for most home users, the best choice is a versatile and affordable printer, such as a small-office/home-office color inkjet. These printers cost anywhere from $50 to $150 and are designed to do a little of everything, albeit slowly.
- Professional Writer or College Student: A personal laser printer may be the best option. It can deliver large amounts of crisp, legible text, fast. Personal laser printers start at around $200 or so, but they cost less to operate than inkjets do, so you can save money over the life of the printer. Inexpensive, personal lasers are also a good option for college students busy churning out term papers.
- Photographer: Any inkjet can print photos in color, but if you want results that approach professional photofinishing, you'll need a printer that is designed to reproduce the dynamic range of photographs. If you're in the market for an enthusiast printer, you need to look at the gamut and characteristics of the ink set, the supported papers, and the color-management tools. If you plan to purchase only one printer or are a serious hobbyist, a letter-size inkjet is your best bet, since it can also handle routine printing tasks. Many use thermal dye-transfer technology (also known as dye sublimation) in which heat changes the physical state of solid inks until they infuse specially coated paper, solidifying as they cool. Snapshot printers can print directly from compatible digital cameras.
- Small Business: If you work from a home office frequently or run a small business, a multifunction printer (MFP) is an excellent choice. Also known as all-in-ones (AIOs), these multitalented devices combine an inkjet or a laser printer with a copier, a scanner, and a fax machine. They save both space and money. Though inkjet models start as low as $100, for slightly more you can purchase a model that includes standalone faxing and has an auto document feeder (ADF) for easily faxing and copying multipage documents
- Corporate: If you need a workhorse that can keep up with your small business or team within a larger organization, a workgroup laser printer is an obvious choice. Designed to juggle multiple print jobs, these systems have faster processors, more memory, and print engines that are capable of churning out more than 20 pages per minute. But these $400-and-up printers are more than souped-up personal lasers; they offer workgroup features, such as network printing, high-capacity toner cartridges, and larger paper input and output trays.
- On the Move: If you really need to take the whole office in your notebook bag, there's a printer out there for you. Portable printers shrink inkjet printing down into a convenient travel size. They weigh anywhere from 2 to 5 pounds and typically come with a battery (either standard or as an option) or a car charger for printing on the go. Some manufacturers are even adding support for printing wirelessly from a cell phone.

Available Options

- Personal Laser: laser printers are a good choice because they combine fast print speeds, sharp output, and a low cost per page. Like copiers, laser printers use a photographic drum to attract electrically charged toner and transfer it to paper, where the image is fused using a heated roller. The vast majority of laser printers are monochrome (black and white), and they are best-suited for printing text and simple graphics. They start around $200. Until recently color laser printers were too expensive for individuals or small businesses, but there are now several models for less than $500, and these are viable alternatives to color inkjets for printing flyers, spreadsheets, and brochures. More manufacturers also offer networking--either built-in or as an add-on--on personal lasers, making them a good fit for homes with multiple users and PCs.
  Key Features:
  - Interface: USB, Parallel, and Ethernet

- Resolution: 600x600 dpi and up
- Rated Speed: 10 to 20 ppm
- Memory: 32MB or more
- Paper Capacity: 150 to 250 sheets

- Workgroup Laser: As the name implies, workgroup laser printers are designed for small offices or small teams within larger companies. The basic technology is the same, but these are more than beefed-up personal lasers with features tailored specifically for multiple users. First, they support printing over networks either standard or as an option. Second, they offer more-advanced handling capabilities, including larger input and output trays, and some offer duplex (double-sided) printing, sorting, and stapling. Finally, they have faster processors and more memory so that they can manage multiple jobs and print faster. Like personal lasers, the vast majority of workgroup lasers are monochrome--designed for printing text and simple graphics--and they start at around $400.
  Key Features:
  - Interface: USB, Parallel, and Ethernet
  - Resolution: 600x600 or 1200x1200 dpi
  - Rated Speed: More than 20 ppm
  - Memory: 64MB or more
  - Paper capacity: 250 sheets or more

- Inkjet: Today's versatile inkjets can produce both crisp text and rich photo prints. Most manufacturers offer both general-purpose and photo inkjet printers, which shouldn't be confused with snapshot or photo printers designed for only 4x6 or smaller prints. Inkjets print an image by applying a precisely controlled stream of tiny ink droplets from one or more cartridges to a variety of paper types. Each manufacturer uses slightly different techniques, and the size of the droplets and the way they are applied to the paper determine the image quality. Unfortunately, the process is relatively slow compared to that of laser printing--and the ink cartridges and the special papers can be costly--so inkjets are best suited for home users and small businesses with light printing needs, or those who need to produce high-quality graphics and photos. Inkjet printers range in price from less than $100 to as much as $800, depending on features, image quality, and paper-handling capabilities.
  Key Features:
  - Interface: USB, parallel, Ethernet
  - Resolution: Varies widely by manufacturer and model
  - Rated Speed: 5 to 20 ppm
  - Memory: Measured in KB
  - Paper Capacity: 100 sheets or more

- Multifunction/ All-in-one: Multifunction printers (MFPs) or all-in-ones (AIOs) combine copier, scanner, printer, and, in some models, fax capabilities in one unit, making them perfect for home offices and small businesses. MFPs are available with either laser printers for speedy text and occasional graphics, or inkjet printers for vibrant photos. The best models include flatbed scanners and auto document feeders for walk-up scanning, faxing, and copying of multipage documents. MFPs start at around $100 for entry-level inkjets, but the price ranges vastly depending on printer technology and feature set.
  Key Features:
  - Interface: USB, Ethernet
  - Resolution: Depends on printer technology
  - Rated Speed: Depends on printer technology
  - Memory: 32MB and up
  - Paper Capacity: 100 sheets or more

- Photo / Snapshot: Some inkjet printers use more than the four basic CMYK inks to produce high-quality photos, so if you own a digital camera and spend a lot of time printing photos, you may want to pay a little more than

a plain old inkjet will cost or opt for a second printer specifically for that purpose. Some photo printers use inkjet technology, described above, but most rely on dye-sublimation, which transfers color dye in a continuous tone from a ribbon onto the paper in a series of passes, followed by a protective clear coating. The print quality is comparable to that of professional photofinishing. Another big advantage: they can print directly from compatible digital cameras, and most models also accept storage cards such as CompactFlash, SmartMedia, Secure Digital/MultiMediaCard, or Memory Stick. A subclass of photo printers, or snapshot printers, is limited to 4x6 or smaller prints; they can't handle standard 8.5x11 sheets, which is why they are suitable as second printers only. They typically cost at least $200.

Key Features:

- Interface: Media card slots, PictBridge, USB
- Resolution: Varies by technology
- Rated Speed: Varies by technology
- Memory: Measured in KB, not MB
- Paper Capacity: Varies by technology

- Portable: These printers are designed for life on the road. They weigh anywhere from 2 to 5 pounds and are just large enough to squeeze through a standard 8.5-inch-wide sheet of paper. Portable printers use the color-inkjet-printing technology . The print speeds and the image quality are hardly top-notch, and you'll pay a premium for these travel partners, but if you really need to print on the go, they fit the bill. They typically cost $300 or more.

  Key Features:
  - Interface: USB
  - Resolution: Varies by manufacturer
  - Rated Speed: Less than 10 ppm
  - Memory: Minimal
  - Paper Capacity: Ranges from a few sheets to 50 sheets standard input

Understanding the Specs

When evaluating printers the first thing you will see is a long list of confusing specifications. These specs are not only confusing, but they often have little or no bearing on the performance of the printer under general use. The following is a description and information regarding specs you will usually encounter.

- Resolution: the resolution refers to the maximum number of dots per inch (dpi) that can be printed, measured both horizontally and vertically. For example, a 600x600 dpi laser printer lays down a one-inch square composed of 600 dots across by 600 dots down. In theory, a printer with a higher resolution is capable of producing more-detailed text and images.
  Though manufacturers have inflated the numbers for marketing purposes, and the numbers no longer correlate directly with higher image quality, resolution still has some bearing on the quality of text and curves, especially on premium papers.
- Print Speeds: This spec measures how many pages or photos per minute (ppm) a printer spits out. Sounds pretty straightforward, unfortunately, it's not so simple. To come up with the fastest-possible speeds, some manufacturers test using basic text documents at the lowest-quality print settings (Draft mode) on plain paper--not exactly a real-world test. You can often expect to see about half the speed promised by the manufacturer.
- Connectivity: The USB (Universal Serial Bus) is truly universal--all printers now have a USB 2.0 port. Workgroup printers also support printing over a network using a standard Ethernet cable with an RJ-45 connector. For even better mobility, many models support printing wirelessly, using infrared, Bluetooth, and Wi-Fi access points with built-in print servers.
- Processor memory: Nearly all laser printer manufacturers provide information on the processor and the memory, but at least for personal use, these specs are relatively unimportant. Your computer does a fine job, largely on its own, of lining up print jobs and sending them on to be printed. If you have multiple users or you often print high-resolution photos or other large files, however, then you'll want a printer with a faster processor

and more onboard memory.

- Paper handling: The typical paper-handling specs on a printer include everything from the size and thickness of various types of paper to the standard and optional input- and output-tray capacity. Generally, all inkjets and personal laser printers print on standard paper (letter and legal sizes), accept envelopes, and have input and output trays that hold at least 100 sheets, except for snapshot and portable models. More advanced paper-handling features--such as tabloid-size printing, duplexing (printing on both sides), and auto document feeders for faxing and copying--will be found on only higher-end models.

Judging Print Quality

The cardinal rule of purchasing a printer is to print before you pay. Otherwise, there's no surefire way to tell exactly how text and images will appear. Fortunately, many retail stores let you print demonstration pages to get a feel for the output quality. Here are some things to watch for, courtesy of CNET Labs.

- Text: Most demonstration pages will include rows of text at varying sizes, which can show different types of flaws. At the smallest font sizes, the individual letters should be legible and fully formed with no breaks, and they should not bleed into one another. Medium-size fonts should be crisp with no fuzzy edges. And the largest fonts, especially bold ones, should be filled in with a solid, even black--not a muddy bluish or brownish tone. If the tops and bottoms of characters are slightly offset or you see a pattern of dots incorrectly aligned from one row to the next (forming jagged outlines), that typically indicates misregistration of the printhead. You should also be able to see well-rounded counters (the openings) in letterforms; if not, that's usually a sign of the printer laying down too much ink. Keep in mind that on plain, 20-lb. paper, inkjet printers will usually display some wicking, as the ink bleeds along the paper fibers.
- Graphics: The printer demonstration should print several geometric shapes of different sizes and shading. The outlines should be crisp with smooth curves; inside areas of solid colors should appear dense and evenly shaded. Also look for areas where a color goes from dark to light (a gradient). Is it a smooth transition, or can you see color banding, distinct bands progressing from darker to lighter? Large areas of flat color should appear solid and even, rather than muddy. Some printers try to dazzle the eye with overly saturated colors; others skimp on ink, leaving images that appear washed out. Look for a nice, natural-looking balance between the two. Printhead banding--that is, visible horizontal stripes across a page--could be caused by a clogged nozzle, a poorly aligned bidirectional printhead, or a poor rendering algorithm (gradients aren't rendered smoothly).

Photos

When evaluating photo print quality, there are four chief considerations:

- Color accuracy: Compared to the original, the colors should be accurate, pleasing, and well balanced. Colors should be vivid but not oversaturated. Look at a monochrome photo under fluorescent light, incandescent light, and daylight. How badly does the color cast change from one light to another (called metamerism)? Be sure to look for inconsistencies across different paper types and print resolutions.
- Sharpness: Is the output sufficiently sharp? Any jaggies? If you see problems, do you have any theories about what's going on? Does the lack of sharpness have to do with printhead or color misregistration?
- Dynamic range: Can you see detail in highlight and shadow areas, or are they rendered as flat or with no color? Does the printout look muddy or low contrast?
- Artifacts: Do you see any banding? How about evidence of a clogged nozzle? Excessive dot gain? Any other weird stuff going on?

The Real Cost of a Printer

The prices of personal printers look pretty enticing, especially those sub-$100 models. But keep in mind that the purchase price is just the start: the care and feeding of a printer can quickly exceed the original cost. Before pulling out your credit card, be sure to compare the costs of consumables.

- Ink and toner: Inkjets are the least expensive printers available, with many models starting at less than $100. The catch? The consumables, such as replacement inks and specialty papers, can cost you an arm and a leg. Ink typically costs between $12 and $60 per cartridge and can last for 100 to 200 pages. More expensive printers,

however, tend to be more economical to operate because they have higher-capacity ink tanks and separate ink tanks for each color so that you don't need to replace everything when only one color runs dry. To save some money, you can purchase a compatible ink-refill kit from a separate company, though you may not get the same reliability or print quality.

Laser toner cartridges vary greatly in price, yield, and print capabilities. Toner cartridges generally cost from $10 for a small cartridge for a personal laser printer to as much as $300 for a high-capacity cartridge for a networked workgroup laser printer. Toner costs seem high, but so is the yield. A cartridge typically prints between 2,500 and 10,000 pages (although some claim to print as many as 30,000), so the cost per page is a few pennies for text (at 5 percent coverage) and not much more for images (with 15 percent coverage). Pay attention to the expiration dates, though; some cartridges (HP's in particular) will stop working at a set time, no matter how much ink is left. Also, consider paying a little more for a separate toner cartridge and drum kit, rather than the usual combination unit. That way, you don't have to replace the drum, which is often capable of handling many more print jobs, every time you replace the toner.

Dye-sublimation printers have the advantage of a fixed cost per print, since each print eats up the identical amount of ribbon, regardless of photo content. On the other hand, the prices for packs of ribbons and paper can be exorbitant, sometimes as much as $2 per photo.

- Paper: If there's one thing we've learned from CNET Labs' extensive printer testing, it's that better-quality paper yields better-quality printouts. For the best results, you really need to bite the bullet and buy the coated or specialty paper recommended by the manufacturer of your model. This is particularly true for inkjets, photo printers, and multifunction devices. Special paper can cost 10 cents to $2 per letter-size sheet, but it is essential if you want to print crisp-looking text or high-resolution photos.
- Extras: The biggest gotcha with many printers is the printer cable. Incredibly, many manufacturers don't even include one because retailers want to sell you one separately for anywhere from $10 to $30. Before leaving the store, read the box to determine whether you'll need to buy one separately. For some business inkjets and laser printers, network connectivity is optional, as well.

  If you're purchasing a workgroup printer or an advanced multifunction printer, you should also consider some paper-handling features that are frequently offered as add-ons, such as larger-capacity input trays; output bins for collating, stapling, and other finishing options; and auto documents feeders for copying and faxing multipage documents.

References and Resources

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TELEVISIONS

Shopping for a television (TV) doesn't have to be stressful! You don't have to be an expert to get a great deal on a TV. It just takes a little time and patience and you need to know what you want in the product before you can make a wise decision.

Key Terms

- **3-D Capability** – A feature which allows for content to be viewed in 3-D. For example a DVD that is in 3-D could be viewed properly if this feature is included in that TV model.
- **Anti-burn-in Features** – A feature on plasma TV's which prevent static images from permanently etching into the TV's phosphor coating. Examples include screensavers and motion adaptive technology where the picture shifts on the screen every few seconds when the program is paused.
- **Anti-glare Screens** – Generally on a plasma TV, a screen that reduces the reflectivity on the viewing area, making the picture quality better.
- **Component-Video Inputs** – Connections that allow for other devices to be hooked up to the TV. Examples include DVD player, video games, or other such items. The inputs are usually color coded as green, blue and red.
- **Digital Tuner** – A feature that enables the TV to receive free digital TV signals, including high definition programming via an over-the-air antenna. This feature has been required on all TV's since March 2007.
- **Extended Warranty** – A warranty that can be purchased when a TV is bought that will extend beyond the factory warranty on the item. Extended warranty coverage varies depending on the policies offered, the number of years the policy will last, and more.
- **Film Mode** – This feature improves the appearance of movies converted from film to video. Other terms used to describe this feature include: 3:2 pull down, motion compensation, or brand-specific names such asCineMotion and Film Mode.
- **Flat Screen** -- A type of television that is only 4-6 inches thick that can be put on a stand or mounted on the wall like a picture.
- **Front Projection** – A projector that is used with a screen to project movies or television on to a larger surface. Front projection systems require additional equipment such as speakers, cables, and a screen to work properly.
- **HDMI Inputs** – Connections on a TV that allow for HD capable input devices to be connect to things such as cable and satellite boxes, Blue-ray DVD players, or other HD equipment.
- **High Definition** – Refers to video having a resolution substantially higher than traditional television systems. Sometimes referred to as "HD" or "HDTV".
- **Internet-enabled** – Televisions that provide a broadband internet connection without using a computer. Internet-enabled TV's can be used to subscribe to services such as movie rentals (Netflix, Blockbuster, or Amazon on Demand), music from services such as Pandora, YouTube, Twitter, Flickr photos, and more. Also known as "web services."
- **LCD** – The use of lights behind the display screen to help illuminate it. These are typically fluorescent bulbs or some new sets use LED (light-emitting diode) backlights. LCD stands for "liquid crystal display."
- **LED-lit** – LED means "light-emitting diode. This refers to backlights used behind the display screen to help illuminate it.
- **Picture in Picture (PIP)** – This feature allows the viewer to watch two channels at once. One channel is in a small window while the other is shown on the full screen.
- **Plasma Screen** – A type of TV which has many tiny cells between two panels of glass which hold a mixture of noble gasses. The gas in the cells is electrically turned into a plasma which emits ultraviolet light to create the picture.
- **Rear Projection** – The technology used in large-screen TV's to generate the image on the screen from behind the viewing monitor. The technology uses a series of lenses and mirrors to direct the image toward the screen.
- **Resolution** – The degree of sharpness or clarity of a displayed image. Resolution is defined as a matrix of "pixels" per inch. For example, a screen resolution of 1920 X 1080 means that the first number is the number of horizontal rows of pixels on the screen and the second number is the number of vertical rows of pixels on the screen. Some models may list only one number such as 1080p. This number references the vertical rows of

pixels.

- **Screen Size** – The dimension of the screen on a TV measured on the diagonal and includes only the display area, not binet or housing.
- **Viewing Angle** – The maximum angle at which a display can be viewed with acceptable visual performance.
- **Wall Mount** – The installation of a TV on the wall similar to a picture frame or mirror.

Shopping for Televisions

When shopping for televisions, there are a number of considerations that may need to be reviewed before a decision is made. Below are brief explanations of some of the important aspects to take into account in selecting a TV.

1. Price Range – It is important to know how much money is budgeted for this purchase. This type of product is not an expendable item or something that is replaced often. There will be several choices of products, depending on how much money is available to spend.

2. TV Type – There are several different types of TV's on the market today. Most models are now flat screens, but there are different types of flat screens. The most common types are plasma or LCD. They look very similar but the technologies are different. There are also front projection models available. A front projection TV is a good choice for a large home theater but not very practical for everyday use.
   - LCD TV – This type of TV is lightweight, comes in a range of sizes and well suited for viewing in a bright room. Screen size can range from 23-60 inches from most manufacturers, but a few offer screens as large as 100 inches. Most LCD TV's are only 4-5 inches thick. Prices vary, depending on screen size and other features. There are more companies selling LCD TV's than plasma TV's, but LCD TV's generally cost more than plasma sets, but the gap is narrowing. Many LCD sets 40 inches or larger have 1080p resolution.
   - Plasma TV – This type of TV is 42 inches or larger. Most common sizes are 42-58 inches. Most models are 6 inches or less in depth and some new ultra-slim models are becoming available. Prices vary, depending on the screen size and other features. There are more models which have 1080p resolution.
   - Front Projectors – This type of TV is best for a theater-like experience at home. The projector is a separate piece from the screen and is usually mounted on the ceiling. The screen area is typically 70 to 200 inches. Price begins at $1000 and goes up from there. Screens are an additional cost of several hundred dollars, depending on the size. The size of the picture can be altered, depending on the distance the projector is from the screen, if the projector is not mounted on the ceiling. Other items that must be purchased separately include speakers, TV tuner, cables, mounting brackets, and possibly other items.

3. Screen Size – In order to determine what size TV to purchase, it is important to know how big the space is where the TV is going to be placed. This will impact the size of the screen that is chosen. If the TV is going to be placed in a cabinet, be sure to measure the opening, allowing for a few inches of clearance to be able to insert the TV. If the TV is going to be mounted on the wall and there is a limited amount of space, be sure to measure the wall space.
   Screen size is measured on the diagonal of the TV viewing area. It will be important to take a tape measure when looking for TV's so that the actual width and height can be measured on the TV if those dimensions are not provided on the product information or box.
   Another consideration is the size of the room. It is recommended that for an average size room such as a living room, a 37-inch screen is recommended. For smaller rooms such as a bedroom or kitchens, smaller screens are recommended.
   The distance that seating is from the TV may also impact the screen size. It is recommended that seating be at least 5 feet from 40-47 inch screen or six feet for 50-inch or larger screens. The larger the screen, the farther from it the viewer should be. When viewing a TV close up, the picture may not be as clear or look "snowy" or lines may be visible on the screen.

4. Screen Resolution – This refers to the number of pixels, or picture elements, a screen contains. The higher the resolution, the better the picture. The resolution may be given in a set of two numbers such as: 1920 X 1080. This means that the first number is the number of horizontal rows of pixels on the screen and the second

number is the number of vertical rows of pixels on the screen. Some models may list only one number such as 1080p. This number references the vertical rows of pixels.
The screen resolution chosen will determine if specific other features will be available. In order to be able to access HD signal formats or use Blue Ray DVD players, the screen resolution must be at least 1080p.

5. Features – What are the features that are most appealing to the buyer? Are those features available within your budget? Features may include but are not limited to the items listed below. Be sure to review the Key Terms for additional features.
   - Flat Screen
   - High Definition
   - Rear Projection
   - Video Conferencing Capabilities
   - Wireless connectivity

6. Brand – Research the different brands of TV's and choose brands that provide the features that are wanted. How well a brand is rated could have bearing on the decision.

7. Customer Reviews -- There may be helpful information that can be gained from customer reviews about specific products or brands. Take the time to read customer reviews if they are available and take that input into consideration.

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NUTRITIOUS SNACKS

Snacks can help us meet the nutritional needs that may otherwise go unmet if only consuming three meals per day. Nutrient intake can be improved by including healthy snacks as part of your daily schedule. Learning about proper nutrition and how to read a nutrition facts label can help you make healthy snacking choices.

Key Terms

- **Cost per Serving** – The cost of one serving of a food item. The cost per serving can be determined by dividing the total cost of a food package by the number of servings indicated on the nutrition facts label.
  Total cost / Total Number of Servings = Cost per Serving
- **Daily Values (DVs)** – The amount of a nutrient needed daily as determined by the Food and Drug Administration.
- **Fiber** – the part of plant foods that cannot be digested. Fiber is beneficial because it reduces the risk of coronary heart disease, reduces constipation and promotes a full feeling.
- **Food Group** – The basic food groups are grains, fruits, vegetables, dairy, and protein.
- **Nutrients** – Substances the body needs to grow and function. The six classes of nutrients are: carbohydrates, protein, fats, water, vitamins and minerals. Carbohydrates, protein and fats are the only three nutrients that provide calories.
- **Nutrient-Dense Foods** – Those that provide substantial amounts of vitamins and minerals and relatively fewer calories.
- **Portion Size** – the amount of food eaten at one time.
- **Serving Size** – A standardized amount of a food, such as a cup or an ounce, used in providing dietary guidance or in making comparisons among similar foods.
- **Whole Grains** – Foods made from the entire grain seed, usually called the kernel, which consists of the bran, germ and endosperm. Nutrients found in whole grains offer protective health benefits such as reducing constipation, aiding in weight management and reducing the risk of heart disease.

Reading Labels When Making Snack Choices

To know what you're getting from your snack, be sure to read the nutrition facts label. Try these tips to make smart food choices quickly and easily.

- Keep these low: calories, saturated fats, trans fat, cholesterol and sodium
- Get enough of these: potassium, fiber, vitamins A and C, calcium and iron
- Check for added sugars using the ingredient list.
- Use the % Daily Value (DV) column when possible: 5% DV or less is low, 20% DV or more is high

Additional items to look for on a Nutrition Facts Label include:

- Serving size: Look at the serving size and the number of servings per package. Then, determine how many servings you are actually consuming. If you double the servings you eat, you double the calories and nutrients. Remember, the serving size provided on the nutrition facts label is not a recommended amount to eat; it's a way to let you know the calories and nutrients in a certain amount of food.
- Calories: 2,000 calories is the value used as a general reference on the food label. However, the amount of calories you need each day depends on your age, gender, activity level and whether you are trying to gain, maintain or lose weight. Be sure to look at the serving size and how many servings you are actually consuming. If you double the servings you eat, you double the calories.

You can easily consume your calories on a few high-calorie food items, but you most likely will not get the vitamins and nutrients your body needs. Instead, choose nutrient-rich foods that are packed with vitamins, minerals, fiber and other nutrients but are lower in calories.

Look at the calories on the label and compare them with what nutrients you are also getting to decide whether the food is worth eating. When one serving of a single food items contains 400 or more calories, it is high; 40 calories is low.

Food packages also contain information about the amount of calories in the food, including various claim, such as:

Calorie free – means there is less than 5 calories per serving.
Low calorie – means there is 40 calories or less per serving.
Reduced calorie or lower in calories – means there is at least 25 percent fewer calories than the regular version.
Light or lite – means there is half the fat or a third of the calories of the regular version.

Remember that calories come from both food and beverages, so make your calories count!

- Sugars: Since sugars contribute calories with few, if any, nutrients, look for foods and beverages low in added sugars. The Nutrition Facts label lists how many grams of sugar the food contains, but does not list added sugars separately. The amount listed includes sugars that are naturally present in foods and sugars added to the food during processing or preparation. Although the body's response to sugars does not depend on whether they are naturally present in food or added to foods, sugars found naturally in foods are part of the food's total package of nutrients and other healthful components. In contrast, many foods that contain added sugars often supply calories, but few or no essential nutrients and no dietary fiber.
  Read the ingredient list and make sure that added sugars are not one of the first few ingredients. Some names for added sugars (caloric sweeteners) include sucrose, glucose, high fructose corn syrup, corn syrup, corn sweetener, honey, dextrose, fruit juice concentrates, lactose, maltose, malt syrup, molasses, maple syrup and fructose. These added sugars provide calories but few or no vitamins and minerals.
  The food package can also provide guidance. Sometimes the label will say "sugar-free" or "no added sugars." Even with these claims, it is important to read the Nutrition Facts label.
- Fats: Look for foods low in saturated fats, trans fats and cholesterol to help reduce the risk of heart disease. Most of the fats you eat should be polyunsaturated and monounsaturated fats. There is no % DV for trans fat, but you should aim to keep trans fat intake as low as possible. Remember, keep your total fat intake between 20% to 35% of calories (25% to 35% for children and adolescents 4 to 18 years of age). Foods that are high in fats are usually high in calories.
  Many food packages also contain various claims regarding the amount of fat in the food. Some examples of these claims are "fat free," "low saturated fat" or "light."
- Sodium: Sodium is an essential nutrient and is needed by the body in relatively small quantities, provided that substantial sweating does not occur. Reducing sodium intake can reduce one's blood pressure. Keeping blood pressure in normal range reduces an individual's risk of cardiovascular disease, congestive hart failure, and kidney disease.
  The adequate intake (AI) levels of sodium for individuals ages 9 to 50 years is 1,500 mg per day. For adolescents and adults of all ages (14 years and older), the tolerable upper intake level is 2,300 mg per day. Research shows that eating less than 2,300 milligrams of sodium (about 1 tsp of salt) per day may reduce the risk of high blood pressure. Most of the sodium people eat comes from processed foods, not from the salt shaker. Take a look at the sodium content on the Nutrition Facts label, using it to make selections that are lower in sodium. Use the % DV to determine the levels of sodium in the food product – 5% DV or less is low and 20% DV or more is considered high.
  Claims on the food packaging, such as "low sodium," can also be used to quickly identify foods that contain less salt. However, such claims should still prompt a look at the Nutrition Facts label.

Nutritious Snacking Tips

- Choose foods high in nutrients and low in fat.
- Eat snacks that include at least two food groups. For example, pair apple slices with cheese or a mini bagel with peanut butter.
- Plan ahead! Plan and pack snacks for when you are on the go so you can avoid less healthful snack choices such as chips and soda.
- Incorporate fruits and vegetables into your snacking plans.
- Aim for whole grain snacks, as at least half of your grains should be whole.
- Remember that calories come from both food and beverages. Water and milk are your best beverage choices at snack time.

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FAST FOOD MEALS

Fast foods are quick and easy substitutes for home cooking, and a reality with the busy schedules many families maintain. However, fast foods are almost always high in calories, fat, sugar, and salt.

Fast food used to mean fried food. However, today there are many more healthy alternatives available at fast food restaurants. Some restaurants still use hydrogenated vegetable oils for frying. These oils contain trans fats, which increase your risk for heart disease. Some cities have banned or are trying to ban the use of these fats. Now, many restaurants are preparing foods using other types of fat.

Even with these changes, it is hard to eat healthy when you eat out often. Many foods are still cooked with a lot of fat, and many fast-food restaurants do not offer any lower-fat foods. Large portions also make it easy to overeat, and few restaurants offer many fresh fruits and vegetables.

Before heading out, it is important to know your personal calorie limit. Staying within yours can help you get to or maintain a healthy weight. Most adolescents need 1800 (girls) to 2200 (boys) calories; however, knowing how many calories one needs is based upon age, sex, height, weight, and activity level. When choosing what to eat and drink, it's important to get the right mix – enough nutrients, but not too many calories.

In general, eat at places that offer salads, soups, and vegetables. Select a fast-food restaurant that you know offers a variety of food selections that fit in your healthy eating plan. Along with that, the following tips can help you make healthier selections when dining at fast-food restaurants.

Check and compare nutrition information. Knowing the amount of calories, fat, and salt in fast foods can help you eat healthier. Many restaurants now offer information about their food. This information is much like the nutrition labels on the food that you buy. If it is not posted in the restaurant, ask an employee for a copy.

Have it your way. Remember you don't have to settle for what comes with your sandwich or meal – not even at fast-food restaurants. Ask for healthier options and substitutions. Adding bacon, cheese, or mayonnaise will increase the fat and calories. Ask for vegetables instead, such as lettuce or spinach, and tomatoes. With pizza, get less cheese. Also pick low-fat toppings, such as vegetables. You can also dab the pizza with a paper napkin to get rid of a lot of the fat from the cheese.

Keep portion sizes small. If the fast-food restaurant offers several sandwich sizes, pick the smallest. Bypass hamburgers with two or three beef patties, which can pack close to 800 calories and 40 grams of fat. Choose instead a regular- or children's-sized hamburger, which has about 250-300 calories. Ask for extra lettuce, tomatoes, and onions, and omit the cheese and sauce. If a smaller portion is not available, split an item to reduce calories and fat. You can always take some of your food home, and it is okay if you leave extra food on your plate.

Skip the large serving of french fries or onion rings and ask for a small serving instead. This switch alone saves 200 to 300 calories. Or, ask if you can substitute a salad or fruit for the fries.

Strive to make half your plate fruits and vegetables. Take advantage of the healthy side dishes offered at many fast-food restaurants. For example, instead of french fries choose a side salad with low-fat dressing or a baked potato, or add a fruit bowl or a fruit and yogurt option to your meal. Other healthy choices include apple or orange slices, corn on the cob, steamed rice, or baked potato chips.

When choosing an entrée salad, go with grilled chicken, shrimp, or vegetables with fat-free or low-fat dressing on the side, rather than regular salad dressing, which can have 100 to 200 calories per packet. Vinegar or lemon juice are also healthier substitutes for salad dressing. Watch out for high-calorie salads, such as those with deep fried shells or those topped with breaded chicken or other fried toppings. Also skip extras, such as cheese, bacon bits and croutons, which

quickly increase your calorie count. If you forgo the dressing, you can find salads for around 300 calories at most fast food chains.

Opt for grilled items. Fried and breaded foods, such as crispy chicken sandwiches and breaded fish fillets, are high in fat and calories. Select grilled or roasted lean meats – such as turkey or chicken meat, lean ham, or lean roast beef. Look for meat, chicken, and fish that are roasted, grilled, baked, or broiled. Avoid meats that are breaded or fried. If the dish you order comes with a heavy sauce, ask for it on the side and use just a small amount.

Go for whole grains. Select whole-grain breads or bagels. Croissants and biscuits have a lot of fat. People who eat whole grains as part of a healthy diet have a reduced risk of some chronic diseases.

Slow down on sodium. Americans have a taste for salt, but salt plays a role in high blood pressure. Everyone, including kids, should reduce their sodium intake to less than 2,300 milligrams of sodium a day (about 1 tsp of salt). Adults age 51 and older, African Americans of any age, and individuals with high blood pressure, diabetes, or chronic kidney disease should further reduce their sodium intake to 1,500 mg a day.

When eating at a fast food restaurant, pay attention to condiments. Foods like soy sauce, ketchup, pickles, olives, salad dressings, and seasoning packets are high in sodium. Choose low-sodium soy sauce and ketchup. Have a carrot or celery stick instead of olives or pickles. Use only a sprinkling of flavoring packets instead of the entire packet.

Watch what you drink. What you drink is as important as what you eat. Teenagers often drink more carbonated and caffeinated beverages and eat more fast foods. This, along with peer pressure related to eating and exercise, make teenagers particularly vulnerable to becoming sedentary, overweight, and obese. An obese teenager has a greater than 70% risk of becoming an obese adult.

Many beverages are high in calories, contain added sugars and offer little or no nutrients, while others may provide nutrients but too much fat and too many calories. For example, a large regular soda (32 ounces) has about 300 calories. Instead, order diet soda, water, unsweetened iced tea, sparkling water or mineral water. Also, skip the shakes and other ice cream drinks. Large shakes can contain more than 800 calories and all of your saturated fat allotment for the day.

Drink water. This is a better choice over sugary drinks. Regular soda, energy or sports drinks, and other sweet drinks usually contain a lot of added sugar, which provides more calories than needed. Water is usually easy on the wallet. You can save money by drinking water from the tap when eating out. When water just won't do, enjoy the beverage of your choice, but just cut back, avoiding the supersized option.

Don't forget dairy. Many fast food restaurants offer milk as an option for kids' meals, but you can request it! Dairy products provide calcium, vitamin D, potassium, protein, and other nutrients needed for good health throughout life. When you choose milk or milk alternatives, select low-fat or fat-free milk or fortified soymilk. Each type of milk offers the same key nutrients such as calcium, vitamin D, and potassium, but the number of calories are very different. Older children, teens, and adults need 3 cups of milk per day, while children 4 to 8 years old need 2 ½ cups, and children 2 to 3 years old need 2 cups.

The American Heart Association recommends some examples of healthier alternatives to common fast food picks.

Instead of…	**Try…**
Danish	Small bagel
Jumbo cheeseburger	Grilled chicken, sliced meats or even a regular 2 oz. hamburger on a bun with lettuce, tomato and onion
Fried chicken or tacos	Grilled chicken or salad bar (but watch out for the high-calorie dressing and ingredients)
French fries	Baked potato with vegetables or low-fat or fat-free sour cream topping

Potato chips	Pretzels, baked potato chips
Milkshake	Juice or low-fat or fat-free milk or a diet soft drink (Limit beverages that are high in calories but low in nutrients, such as soft drinks.)

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- Choose My Plate
- Make Half Your Grains Whole
- Salt and Sodium
- Make Better Beverage choices
- Enjoy Your Food, But Eat Less

Choose My Plate – Calories: How Many Can I Have?
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COOKWARE

Having a hard time choosing the right cookware set for your home? It's not easy. The number of cookware brands seems to be growing every day and the range of pots and pans is enormous with materials varying from stainless steel, cast iron, aluminum and copper. It seems that celebrity chef's and TV Personalities have deemed their cookware the best, but is it? We'll let you decide.

Key Terms

- Heat conductivity – Some metals are better heat conductors than others. For instance, copper is a particularly good heat conductor whereas stainless steel is not. What this means in terms of cookware is that the better the heat conductivity the better and the more evenly your food will cook. It also means that when you turn the heat up or down the copper cookware will react a lot quicker to the temperature change than stainless steel cookware.
- Price – The amount you pay for your cookware will most likely be a determining factor in what you end up buying. The rule of thumb with cookware is to buy the best you can afford.
- Durability – Some types of cookware will maintain their good looks and last longer than others. Stainless steel is considered to be one of the best in this respect.
- Reactivity – Some metals react with certain foods. Aluminum for instance has a tendency to react with tomato and other acidic dishes. This means that your food can actually absorb some of the metal, so take care with your cookware choices and ensure that you are aware of the reactivity of each product.
- Maintenance – If you would prefer to not to have to shine your cookware every night just to keep it looking good then you will need to consider the amount of maintenance required to keep it in tip-top shape. Copper and cast iron cookware generally require quite a bit of work to keep it looking pristine whilst stainless steel is normally a little easier to look after.
- Clad Style Cookware - cookware made up of two or more different metals.

Factors To Consider When Purchasing Cookware

- Consider your cooktop - Flat-bottomed pans are essential for a smoothtop range. (Nearly every set out there is flat-bottomed, but double-check with a straight edge.) If you have an induction cooktop, magnetic stainless steel is your best bet (bring along a magnet: If it sticks to the bottom, it'll work with an induction cooktop).
- Choose your pieces - You'll want an assortment of skillets and pots, a stockpot, and lids. Manufacturers count a lid as a piece, and it might fit more than one piece of cookware in the set. Don't overbuy. A set that contains more pieces might not be the smartest choice if you use only a few and the rest gather dust in your cabinet. And note that utensils and even a cookbook can count as pieces of a set.

Stainless Steel Cookware	Cast Iron Cookware	Aluminum Cookware	Copper Cookware
Stainless steel would have to be the most common type of cookware materials. You will probably find it in most households. Stainless steel is actually an alloy of metals including steel, carbon and chromium. The reason stainless steel is called 'stainless' is because of its ability to resist corrosion. Stainless steel is an excellent choice for cookware BUT because of its inability to conduct heat well it is important that you choose stainless steel cookware that has an aluminum or copper core. Without it you will find that you will get hot spots on the cooking surface and foods will cook unevenly.	Cast iron is a material that has been used to create cookware for hundreds of years. Those that use cast iron cookware absolutely swear by it for its exceptional cooking ability. Nevertheless, cast iron cookware is not an easy to maintain product. It requires a little effort to keep it working the way it should. It is extremely durable and it is not uncommon to find cast iron cookware that has been passed down through the generations.	Aluminum is used in approximately 50% of all cookware manufactured today because of its excellent heat conduction. Aluminum is a soft metal and can scratch and dent easily. It can also react with certain foods which is why it is generally sandwiched between other metals. You will often find stainless steel cookware with a layer of aluminum offering the benefits of both materials. Aluminum is also often treated through a process known as anodization. This process places a layer of aluminum oxide onto the surface making it scratch resistant as well as ensuring that it doesn't react with foods. Aluminum cookware is often finished with a nonstick coating to ensure food remains unburned.	Copper cookware is commonly used amongst professional chefs because of its excellent heat conduction. Copper cookware on its own is generally quite expensive so it is not often seen in many home kitchens. Copper is also often found sandwiched between layers of other materials like stainless steel. Copper cookware is the cookware of chefs and for good reason. It conducts heat extremely well which means it heats quickly and adjusts to changes in temperature just as quickly. This allows greater control over your cooking.
Advantages Relatively inexpensive Durable Scratch resistant Keeps it shiny look for a long time Doesn't react with foods Warp resistant	Advantages Relatively inexpensive Durable Scratch resistant Keeps it shiny look for a long time Doesn't react with foods Warp resistant	Advantages Excellent heat conduction	Advantages Excellent heat conduction Relatively expensive
Disadvantages Not a good conductor of heat	Disadvantages Reacts with foods unless seasoned High maintenance; requires regular seasoning Is heavier than most other types of cookware Can rust unless seasoned	Disadvantages Reacts with acidic foods Scratches and dents easily	Disadvantages Reacts with acidic foods Requires regular polishing
			

Resources

http://whatscookingamerica.net/Information/ChoosingCookware.htm
http://www.goodhousekeeping.com/product-reviews/cooking-tools/cookware-reviews/shopping-for-cookware
http://www.consumerreports.org/cro/kitchen-cookware.htm

OUTDOOR EQUIPMENT

Tents, Sleeping Bags, and Camp Stoves

In 2011, an estimated 42 million Americans went camping. Those campers spent a staggering 534.9 million days camping! There are many different types of camping experiences, each varying in time, terrain, season, and purpose. Properly preparing for a camping trip is probably one of the most important aspects of making the experience enjoyable. With this many people and time spent in the outdoors, it is important for each person to equip themselves with the best and most appropriate equipment available.

Three essential camping equipment items presented in this study guide are tents, sleeping bags, and camp stoves. With advances in technology over the last century, each item has improved in construction and purpose and is no longer a "one size fits all" product. To ensure a fun camping experience, consumers should become familiar with the many differences in the equipment before making purchases.

TENTS

A tent is a portable shelter constructed of a fabric and supported by poles, with lines securing the structure to the ground. Today's tents are built in/for a variety of shapes, seasons, sizes, weights, features, and purposes.

Seasons

- Three-Season Tents are designed for spring, summer, and fall. These have a variety of ventilation options and are typically made of thinner, less durable material than four-season. It is best used in mild to hot climates.
- Four-Season Tents are built to provide better protection from snowfall and wind. Venting is minimal and the material is tougher than three-season. The season type is a bit misleading in that these tents are really designed for one season, winter. This type of tent may not be suitable for hot climates due to its limited ventilation.

Size and Weight

One of the biggest factors in selecting a tent is its size. Size is usually quantified by how many people can sleep on the floor. This is typically depicted by a "person" rating. As an example, a tent may be described as capable of sleeping 4 people. Keep in mind, this rating does not take into consideration any gear that may also need to be stored in the tent. An alternative means of determining the best tent size is to estimate the amount of floor space needed by the camper(s) and match that to the floor space (noted by dimensions or square footage on the packaging) of the tent being purchased.

With size also comes weight. Factors that affect weight are the size of the tent itself, the type and amount of material used, and the tent's features. Weight is an extremely important factor to consider when camping in more remote locations (i.e., backpacking or wilderness camping) and the camper is hauling the gear on foot to the campsite. Weight is less of a factor if the camper is "car camping" (parked close to the campsite) or using a horse or ATV to haul the gear.

Features

Today's tents come with a variety of available features that help make your living space more enjoyable and comfortable.

- Rain fly: a removable, water-resistant outer wall made of cloth that helps protect the tent from rain. Rain fly's come in two categories: full-length and partial. Full-length extends almost completely to the floor and provides the most protection. Partial covers the mesh panels at the top of the tent and offers more ventilation than the full-length.
- Vestibule: a floorless "porch" usually created by an extension of the rain fly. Its purpose is to provide a semi-protected transition area between the tent and the outdoors. It is often used as an

area to remove wet or muddy shoes.

- Door: a cloth door panel that is often secured by a zipper. Some tents have multiple doors to allow easier movement in and out of the tent.
- Poles: a rod made of aluminum, fiberglass, or carbon fiber that helps provide shape and structure to a tent. Fiberglass poles are found on inexpensive, light-duty tents (cheaper, heavier, and less durable than the other two). Aluminum poles are strong, light, and inexpensive. Carbon fiber poles are found on high-end tents. These are very light and strong, but are the most expensive to replace.
- Panels/Walls: the inner cloth canopy that is made up of a solid and/or screened (mesh) material. A solid, waterproof wall can provide protection from rain, but provides less ventilation inside the tent. A screened wall allows for better airflow in and out of the tent, but does not prevent rain from entering the tent. A hybrid design that uses a mixture of solid and screened material helps reduce condensation inside the tent.
  Tent fabrics usually have a waterproof rating associated with its polyurethane-coated fabric. Higher values are associated with better waterproofing capabilities. For example, a rain fly with a rating of 2,500mm is more waterproof than 1,000mm. Keep in mind, the higher the rating (more coating), the heavier the tent will be also.
- Windows: typically made of screened (mesh) material; it allows air to flow in and out of the tent while also minimizing entry of insects or other critters
- Floor: a fabric component of the tent that is made of more durable material than the walls. The floor must hold up against the weight of its occupants and contact with the ground.
- Footprint: a durable material (also called a ground cloth) that is placed under the tent to provide extra protection from abrasion and moisture. A footprint will also help extend the life of the tent.

SLEEPING BAGS

Camping is all about enjoying the great outdoors, but while you're fast asleep in your tent, comfort is probably the number one priority. Having the right sleeping bag can make all the difference in getting a restful sleep. Below are three of the most important factors to consider when purchasing a sleeping bag.

Temperature Rating

The temperature rating indicates the lowest ambient temperature that the average user would still remain comfortable at inside the sleeping bag. For example, a rating of +35°F means that the average person would remain comfortable inside the sleeping bag at 35°F or higher. In selecting the ideal bag, select one that is rated for the coldest temperature expected.

Insulation Type

Most sleeping bags are insulated with either a synthetic polyester fill or goose down.

Type	Advantages	Disadvantages
Synthetic	Insulation when wet Dry fairly fast Easy to clean Less expensive Non-allergenic	Heavier Bulkier Shorter age Doesn't conform to body as well
Down	Warmer ounce for ounce Lightweight Highly Compressible Longer age Wicks moisture	Useless when wet Slow to dry Requires special cleaning May contain allergens More expensive

Source: http://wildbackpacker.com/gear/sleeping/buyingguide.html

Shape and Size

The most common shapes (in order of largest capacity to smallest) are rectangle, semi-rectangular, and mummy. Of the three, mummy shapes are smaller and typically lighter weight, ideal for backpacking. To compare sizes when purchasing, check the shoulder and hip girth specifications. Lengths come in "regular" or "long". Long is recommended

for individuals 6’ 6” or taller.

CAMP STOVES

Size and weight

Camp stoves come in a variety of arrangements, fuel types, and accessories. Stoves can range in weight from a few ounces to several pounds. Select a stove that minimizes weight and volume when backpacking. Be sure to factor in the weight of the stove’s fuel. If car-camping, size and weight are less of a factor.

Burners

Stoves are designed with single or multiple burners. Single-burners are best for simple meal preparations such as boiling water, or a single can/pot of food. Multiple burners are ideal when preparing large meals that require more than one burner going at a time. Single-burners weigh less, and are the burner of choice for most backpackers.

Fuel Type – Cartridge vs. Liquid Fuel

- Cartridge Stoves use compressed gasses such as propane, butane, or iso-butane that come in their own container. These are typically lighter in weight, require less maintenance, and burn cleaner. Butane does not perform at temperatures below freezing (32°F). Stoves are sold as a burner that attaches to the top of the cartridge, and the cartridge serves as the stove’s base. Canisters cannot be refilled.
- Liquid Gas Stoves have a refillable fuel tank that is typically filled with white gas or kerosene. These stoves work better in cold and windy conditions than cartridge stoves; however, they are more difficult to use and require more maintenance. Liquid fuels are heavier than the compressed gas fuels.

Sources:

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