

Buying A New TV

A Few Things To Keep In Mind:

Buying a TV does NOT immediately let you WATCH TV.

A TV is nothing more than a display, that displays whatever you connect to it.

Devices you can connect to a TV:

- Antenna
- Cable
- Satellite
- VCRs
- DVD Players
- BluRay Players
- Anything with a video output!
- Video Game Systems
- Desktop Computers
- Laptop Computers

Connection Types:

- Coaxial RF (Antenna) Connector
- Composite Video (Yellow, White & Red)
- Component (Green, Blue & Red)
- HDMI (High Definition)(Includes audio)
- USB (for cameras and Flash Drives)
- VGA + Headphone Jack (to connect a PC)
- Digital Optical Audio Input/Output (Surround Sound)
- LAN (Internet for Smart TV's)

Start With What Size You Want:

Take the distance (in feet) the TV will be from your couch (or other seating area). Multiply that by 6. That is how many inches your TV should be for optimal viewing.

For example: If you will be sitting 9 feet away from the TV (the average for most people)...

$$9 \times 6 = 54$$

So a 54" or larger TV would be optimal for 9' or so distance.

With smaller rooms, you might be only 6 feet away from the TV:

$$6 \times 6 = 36$$

So a 36" screen might be all you need.

If you are sitting further back, like 12 feet, you would need a larger TV to compensate:

$$12 \times 6 = 72''$$

If your eyesight is bad, just change the 6 to a 7 or 8, and multiply again:

$$12 \times 8 = 96''$$

If you have an eclectic group of people with varying vision, just remember that you can always have those with worse vision sit closer to the TV.

And if you will be using Closed Captioning, keep in mind the visibility of the text at the bottom of the screen, since that is not always something you can resize...

LCD, LED, OLED, or Plasma:

Standard LCD TVs use CCFL lighting.

All "**LED TVs**" are actually LCD TVs, they just use LED lights as their light source.

OLED, or **Organic LED** televisions are curved, more expensive, and only available with a screen size of 55 inches or larger. OLEDs are made with organic compounds that light up when fed electricity. On an OLED TV, each pixel lights itself up independently of the others, so only the area that needs light gets it.

Plasma TVs light the screen differently, and can handle fast-motion & special effects scenes more brilliantly. The only downsides are that their screens are typically glossy, and in a room with any amount of light can be hard to view without seeing reflections. Also, burn-in on the screen is more dangerous on plasma TVs, though most manufacturers integrate features to try to prevent this. On LCD TVs, it is easier to reset a burnt-in image. Panasonic has stopped making Plasma TVs, and only LG and Samsung continue to make plasma TVs.

When it comes to LEDs, "**Full Array Edge-Lit Local Dimming**" is good.

Backlit (Direct-Lit) is better.

Backlit with local dimming is best.

Contrast Ratio:

The most important factor in determining the quality of display.

Higher CR is better, and Native Contrast Ratio is better than Dynamic Contrast Ratio.



High Contrast Ratio

Low Contrast Ratio

1080p vs. 4K:

1080p means 1,080 pixels (vertical) by 1,920 pixels (wide). 4K means 4,096 (w) x 2,160 (h) pixels.

So 4K is basically double the vertical resolution of 1080p.

That said, 4K is a bit overkill in most cases, and more than most people need. At 10 feet away, the human eye cannot resolve the difference between otherwise identical 1080p and 720p 50" televisions. You'd have to get a TV at least 77 inches diagonal before you'd start having a pixel visibility problem with 1080p.

So the advantage of 4K is that you can sit way closer to your television (which no one will), or you can get a way bigger television (also unlikely). In fact, since there is no 4K content readily available (and even when there is, internet speeds have a long way to go to transmit them), there is really no point to 4K technology yet.

There are no 4K Plasma TVs currently...

Examples of Backlighting:



Plasma,
OLED,
Full-Array Local Dimming



Top&Bottom-lit LED
with local dimming



Bottom-lit LED
with local dimming



Sample of LED screen Backlit w/
Full Array Local Dimming

	Light Output	Energy Use	Resolution	Black Level	Contrast Ratio	Motion Blur	Viewing Angle	Consistant Brightness	Price
LCD			O	X	X	X	X	X	
LED	O	O							
OLED	O	O		O	O				X
Plasma	X	X	X			O	O	O	O

3D TVs:

There are 2 types of 3D TVs: Active and Passive 3D.

Active is slightly higher quality, while passive is like what the movie theaters use.

Both are inherently flawed in quality, currently.

3D TVs are also available in 4K models.

Accessories:

HDMI Cables:

All HDMI cables are the same quality, regardless of what the salesman tells you.

There are only 2 basic types of HDMI cables:

- High-speed (also called Category 2)
- Standard-speed (Category 1)

Some may have Ethernet as an option, but most people won't need this.

Stand/Mount:

Most TVs come with a stand for setting up on a flat surface. Mounting brackets for the wall are sold separately, and can cost anywhere from \$50-300, depending on how much tilt and swivel you need.

Antennas:

As long as the antenna is in good condition, and the antenna cable is not frayed at all, you can still use an old antenna to receive digital HDTV. Unlike older analog TV, when you don't get a signal strong enough for the channel, the result won't be snowy, it will be patchy, and the audio may cut out, which makes it harder to watch TV. The only way around that is to get a higher range antenna, or to use better quality cable.

Sound Bar:

An alternative to surround sound units that simulates surround sound. Designed to go either above or below the TV to save space. You have to connect the audio from your device(s) into the sound bar, and not all sound bars have multiple inputs, so you need to know how many and what audio connections you will need.

Some have Dolby Digital decoding, and some come with a subwoofer. They range in price from \$30 - \$3,000!

If you don't need the extra space though, nothing will outdo a full surround sound system, which can range from \$200 - \$2000.

Remote Control:

While the TV will undoubtedly come with a remote, you may want to invest in a universal remote to manage the myriad of devices which you will be connecting to the new TV.

- Be sure the remote is universal, and not one for a specific model
- Be sure it supports YOUR make/model TV
- Your TV may have advanced functionalities which the universal remote will not accommodate
- Keep the receipt

Streaming Media Players:

- Roku
- Chromecast
- Amazon Fire TV



Netflix, Hulu Plus, Amazon Instant Video, HBO GO, M-GO, VUDU, Redbox Instant by Verizon and more
Music from Spotify, Amazon Cloud Player, Pandora, MOG, Rdio, VEVO and TuneIn Radio

Live sports packages including NBA League Pass Broadband, NHL GameCenter LIVE, MLS LIVE, UFCTV, and MLB.TV Premium

Family entertainment from PBS and Disney

Photo and video sharing via Facebook, Flickr, and Picasa

Top news sources with MSNBC, Fox News, Huffington Post, CNBC and Wall Street Journal Live

Tons of channels featuring international & lifestyle programming, tech news, podcasts, cartoons, etc.

Projectors:

If you can't afford a larger TV, but have a projector screen (or a decent sized wall), you may be interested in a projector. A few things to keep in mind:

- **The room needs to be easily darkened**
You can have windows, but they need thick curtains or blinds for projection time. If nothing else, be sure the light does not hit your projection surface.
- **The smoother your "screen", the better**
There are different grades of screens, and smoothness will determine how crisp your picture is. If you are projecting to a wall, you may want to sand it down to remove small blemishes or paintbrush strokes.
- **White screens are a must!**
Whatever surface you project on MUST be white. The projector expects this, and some will only function properly if they sense a white area. You can actually BUY white screen paint to repaint a screen or wall if needed.
- **Not all projectors zoom very far**
Be sure you check the specs of the projector before buying, especially how far it will zoom, and at what distance it will project, and take that into account when you decide where you will place it...
- **Plan placement first**
This may be obvious, but the projector will need an unblocked view of the surface it projects on. And of course take into account the fact that you still need to run wires to it from the devices you will be connecting to it. If you mount it on the ceiling, you may need to run wires from ceiling to floor...
- **Remember sound**
Not all projectors handle sound, so you may need speakers or a surround sound system still. Even the projectors that DO output sound often do so at a reduced volume, which may not be ideal for home theater setups.

One Last Thing:

NEVER BUY A TV WITHOUT SEEING IT IN ACTION AS A "FLOOR MODEL"!

When they set up displays in the store, they don't fine-tune them like a home user would. Seeing how a TV performs with stock settings and comparing them to each other in a live demonstration is the best way to choose when you have more than one option you are contemplating.