What is CGI?

Computer-generated imagery (**CGI**) is the application of <u>computer graphics</u> to create or contribute to images in <u>art</u>, printed media, <u>video games</u>, films, <u>television programs</u>, shorts, commercials, videos, and <u>simulators</u>. The visual scenes may be dynamic or static, and may be two-dimensional (2D), though the term "CGI" is most commonly used to refer to <u>3D computer graphics</u> used for creating scenes or special effects in films and television. Additionally, the use of 2D CGI is often mistakenly referred to as "traditional animation", most often in the case when dedicated animation software such as <u>Adobe Flash</u> or <u>Toon Boom</u> is not used or the CGI is hand drawn using a tablet and mouse.

The term 'CGI animation' refers to dynamic CGI rendered as a movie. The term <u>virtual world</u> refers to agent-based, interactive environments. Computer graphics software is used to make computer-generated imagery for films, etc. Availability of CGI software and increased computer speeds have allowed individual artists and small companies to produce professional-grade films, games, and fine art from their home computers. This has brought about an Internet subculture with its own set of global celebrities, clichés, and technical vocabulary. The evolution of CGI led to the emergence of <u>virtual cinematography</u> in the 1990s where runs of the <u>simulated</u> <u>camera</u> are not constrained by the laws of physics.

Have you ever found yourself sitting in the theater, watching a Pixar film, and contemplating what it is about CGI animation that makes for some of the best children's movies?

The evolution of this field of graphic design didn't happen over a very long, extended period – but instead over a couple of decades. In fact, the rapid advancement of computer processing power is primarily what served as a catalyst for the explosion of CGI animation. But what is CGI animation, exactly?

If you're a computer graphic design artist, this post may not be for you. However, for those of you out there who are curious about this fascinating form of animation – read on for a brief history of the world of animation, and how computers completely transformed the art form.

What Ever Happened to Plain Old Cartoons?

Most of you can likely name at least one or two of your favorite childhood cartoons. Maybe it was Scooby Doo, the Flintstones or even the Jetsons. Maybe you're a bit younger (or not) and you still enjoy your Saturday morning cartoons.

However, most of the older folks out there probably started noticing that more and more cartoons look just a little bit *different* – just a little bit more *real*. What is it about CGI animation that gives the characters and the overall imagery more realism? The answer to that requires some history.

The history of animation is both nostalgic and sad. Many decades ago, animators were traditional artists who drew pictures by hand. Traditional animation consisted of a whole team of animators who would draw and color images on "cels" – transparent sheets that were placed on top of a background image to create a multi-layered frame.

In this way, segments of an image could change from frame to frame without the entire picture being redrawn. You can see an example of layers in the image to the left. The blue arrow points to the background, the green arrow to the layer with two characters, and a red arrow pointing to the third layer with an image of a flying paper airplane. By manipulating the drawings in each layer from frame to frame, animators would create what many adults today remember as the traditional cartoon.

Many movie fans may remember the hype surrounding the digital remastering of old films such as ***Star Wars***, where computer animation was used to digitally enhance the film. The first stages of CGI animation included 2D animation. This simply involved computers doing what animators had been doing for decades – creating multiple frames of images each second in order to generate the visual effect of animation.

The difference in this case was that as the field of computer graphic design advanced, the images gradually became much more advanced than most cartoon animators could manage by hand. The simplest form of this type of animation can be seen in the animated GIF files that became wildly popular on the Internet throughout the late 1990's.